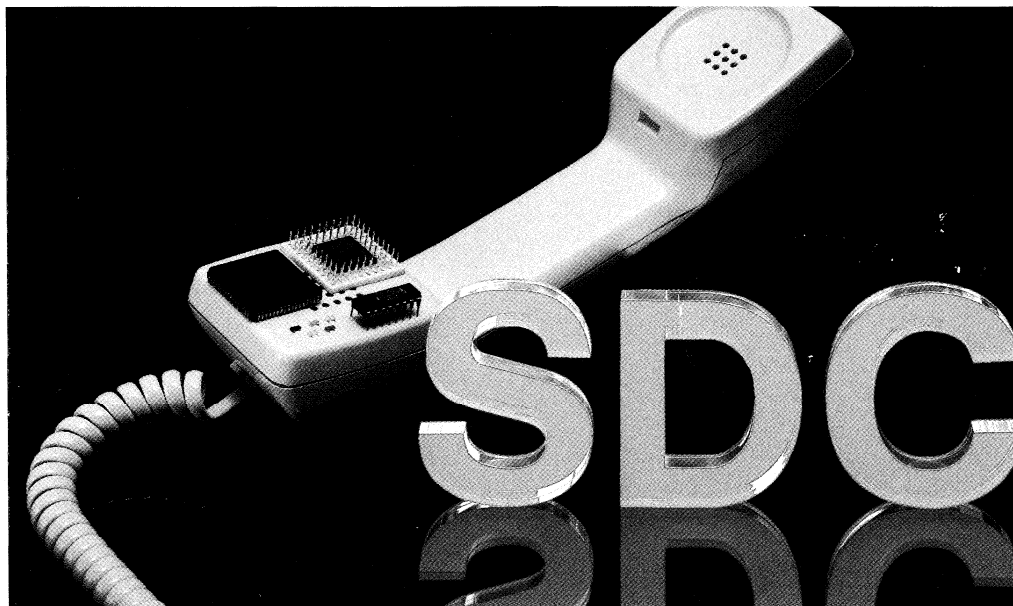


# SIEMENS



## Semiconductor Distribution Center

Halbleiter / Semiconductors  
Lagerliste / Preferred Products  
April 1992



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**Semiconductor Distribution Center**

**Halbleiter / Semiconductors**

**Lagerliste / Preferred Products**

**April 1992**

**Herausgegeben von Siemens AG, Bereich Halbleiter, Marketing-Kommunikation,  
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# Foreword

This new Siemens Catalog "Semiconductor Distribution Center", edition april 1992, replaces the "Siemens Components Service Catalog", edition April 1991.

Whether you buy via Siemens Offices, Representatives or our Distributors, you can benefit from the fact that they are backed by an efficient express-service of our large central stock in Fürth, West Germany. This means for you, the customer, direct information retrieval and ordering followed by prompt delivery of the components.

If you want to place an order or you have questions on prices, terms of delivery, technical information, and products not included in this catalog, please refer to the list of addresses.

Please note that returns of components can only be accepted if previously agreed upon. Quantities without original packaging or components cut off the tape are excluded from return.

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In case of justified claims against purchaser, based on patent rights of third parties concerning electronic components or subassemblies supplied by us, we shall be obliged — as far as such claims refer to the components/subassemblies per se and not to their application or to circuits implemented within the components — at our sole option and expense to obtain the right to use or to modify or exchange the components/subassemblies, or, if this should be impossible or cannot reasonably be demanded, to take back the components/subassemblies and to reimburse the purchase price. This applies provided the purchaser will inform us without delay and will not admit such claims. Any other claims are excluded, except where liability is enforced by law in cases of intent or gross negligence by us.

Furthermore, the General Terms and Conditions of Sales as well as the General Conditions of Supply and Delivery for Products and Services of the Electrical and Electronic Industry shall apply.

Whith compliments

Siemens AG  
Bereich Halbleiter

# Erläuterung der verwendeten Kennzeichen

- ausfuhrgenehmigungspflichtig
- US-reexportgenehmigungspflichtig
- ⊙ ausfuhr- und reexportgenehmigungspflichtig, d. h. Bauelemente, bei deren Bestellungen die Embargo-/Reexportvorschriften einzuhalten sind
- ▼ neu in diese Liste aufgenommene Bauelemente
- nicht für Neuentwicklung bestimmte Bauelemente
- \* variable Ziffer
- ® eingetragenes Warenzeichen
- Ⓔ Gütebestätigung nach CECC 50 000
- SMD (Surface Mounted Devices) grau gestrichelte Typenbezeichnungen kennzeichnen SMD-Gehäuse-Bauformen (oberflächenmontierbare Bauelemente)

Alle in den **Gehäusebauformen** angegebenen Maße verstehen sich in **mm**, sofern nicht anders angegeben.

# Explanation of Symbols

- components subject to export licensing (COCOM EMBARGO)
- components subject to US-reexport licensing
- ⊙ components subject to export (COCOM EMBARGO) and US-reexport licensing
- ▼ new included components
- components not for new design
- \* variable digit
- ® registered trademark
- Ⓔ CECC 50 000
- SMD (Surface Mounted Devices) type designations marked in grey refer to SMDs

All dimensions in **package outlines** are in **mm**, if not otherwise specified.







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## **Allgemeine Angaben**

### **LSL-(Langsame-Störsichere-Logik-)Serie FZ 100**

FZ 100 ist eine Serie langsamer störsicherer Logikbausteine in monolithisch integrierter Halbleitertechnik. Durch Verwendung einer Z-Diode im Eingang und durch Vergrößerung der Kollektorkapazität des Eingangstransistors erreicht man zusammen mit einer hohen Speisespannung von  $V_S = 12\text{ V}$  bzw.  $15\text{ V}$  ein gutes statisches und dynamisches Störverhalten der integrierten Schaltungen. Die Schaltzeiten sind mit einem Zusatzkondensator einstellbar. Dies bringt eine Erhöhung der dynamischen Störsicherheit. Die Serie FZ 100 ist somit besonders für den Einsatz bei stark störgefährdetem Betrieb geeignet, wenn es weniger auf hohe Schaltgeschwindigkeit als auf große Störsicherheit ankommt.

Die B- und S-Typen sind für Eingangsspannungen bis  $30\text{ V}$ , und im Falle von offenen Kollektorausgängen für Ausgangsspannungen bis  $30\text{ V}$  geeignet. Dadurch kann der Anwender ohne Interface-Schaltung direkt auf 24-V- oder 28-V-Systeme übergehen. Der LSL-TTL-Pegelumsetzer FZH 165 B ist von besonderer Bedeutung. Er dient als Umsetzer von Systemen mit Eingangsspannungen bis  $30\text{ V}$  auf 5-V-Systeme, z. B. Mikroprozessoren, CMOS, MOS oder TTL. Grenzwerte sind absolute Grenzwerte, bei deren Überschreitung auch nur eines Wertes die integrierte Schaltung zerstört werden kann.

## **General Information**

### **LSL (Low Speed Logic-)series FZ 100**

FZ 100 is a low-speed, noise immune logic series of monolithic integrated circuits. The excellent static dynamic noise immunity of these ICs is achieved by a Z-diode input, an increased collector capacitance of the input transistor and a high supply voltage  $V_S$  of  $12\text{ V}$  or  $15\text{ V}$ . Propagation delay times can be adjusted by means of an additional capacitor. Thus, the dynamic noise immunity can be increased as required. Due to these advantages, the FZ 100 series is particularly suitable for applications where strong noise endangers operation and where noise immunity is much more important than switching speed. The B and S types are intended for input voltages up to  $30\text{ V}$ , and in the case of open collector outputs for output voltages up to  $30\text{ V}$ . Thus, the user can change to  $24\text{ Vdc}$  or  $28\text{ Vdc}$  systems without interface circuit. The LSL TTL level converter FZH 165 B is of particular importance. It is used as converter of systems with input voltages up to  $30\text{ V}$  into  $5\text{ Vdc}$  systems, e. g. with microprocessors, CMOS, MOS or TTL.

Maximum ratings are absolute limit values, which must not be exceeded. Otherwise the IC could be irreversibly damaged.

**Allgemeine Angaben**  
**General Information**

**Grenzdaten**  
**Maximum Ratings**

	Symbol Symbol	Grenzwerte Limit Values		Einheit Unit
		min.	max.	
<b>Speisespannung</b> <b>Supply Voltage</b>				
FZH 185	$V_S$	0	7	V
Normal- und B-Typen Normal and B types	$V_S$	0	18	V
S-Typen S types	$V_S$	0	30	V
<b>Eingangsspannung</b> <b>Input Voltage</b>				
FZH 185	$V_I$	0	5.5	V
Normaltypen Normal types	$V_I$	0	18	V
B- und S-Typen B and S types	$V_I$	0	30	V
<b>Ausgangsspannung bei Offenem Kollektor</b> <b>Output Voltage with Open Collector</b>				
Normaltypen Normal types	$V_Q$	–	18	V
B- und S-Typen B and S types	$V_Q$	–	30	V
Spannung am Knotenpunkt N Voltage at the node N	$V_N$	– 1.0	0.6	V
Strom am Knotenpunkt N Current at the node N	$I_N$	– 10	2.0	mA
Betriebstemperatur Ambient temperature	$T_A$	– 25	85	°C
Lagertemperatur Storage temperature range	$T_{stg}$	– 65	125	°C

**Allgemeine Angaben**  
**General Information**

**Grenzdaten, Maximale Negative Werte**  
**Maximum Negative Ratings**

$T_A = -25 \dots 85 \text{ } ^\circ\text{C}$	$V_I \text{ (V)}$	$I_I \text{ (mA)}$	$V_S \text{ (V)}$
Alle Eingänge außer N-Knotenpunkt bei allen Bausteinen außer FZH 155 und FZH 185 und $N_1$ Anschluß bei FZH 175, FZH 245 Any input except N-nodes of any circuit except: FZH 155, FZH 185 and expander inputs $N_1$ of FZH 175, FZH 245		- 25	17
FZH 155	- 0.7	-	17
FZH 185	- 0.5	- 25	5

## Digitale ICs, LSL-Serie

### Digital ICs, LSL Series

Typ Type	Funktion Function	Bild <sup>3)</sup> Figure <sup>3)</sup>	Bestellnummer Ordering Code	Stck. Pcs.			
					Min.	min. bis/to 24	25 bis/to 99
■ FZH 115 B <sup>1)</sup>	4 NAND-Glieder mit je 2 Eingängen Quad 2-input NAND-gate with N-input	3/200	Q67000-H215	5			
■ FZH 145 <sup>2)</sup>	2 NAND-Leistungsglieder mit je 5 Eingängen und N-Anschluß Dual 5-input NAND-power gate with N-input	3/201	Q67000-H256	5			
■ FZH 155	2 UND/ODER-Glieder mit N-Anschluß Dual AND/OR-gate with N-input	3/202	Q67000-H260	5			
■ FZH 165 B	LSL-TTL-Pegelumsetzer mit offenem Kollektor und N-Anschluß LSL TTL-level converter with open collector and N-input	3/203	Q67000-H289	5			
■ FZH 185	TTL-LSL-Pegelumsetzer mit offenem Kollektor TTL LSL-level converter with open collector	2/204	Q67000-H327	5			
■ FZH 195	3 NAND-Glieder mit je 3 Eingängen und N-Anschluß Triple 3-input NAND-gate with N-input	3/205	Q67000-H634	5			

<sup>1)</sup> Ersatz für/replacement for FZH 101; FZH 105

<sup>2)</sup> Ersatz für/replacement for FZH 121; FZH 125; FZH 131; FZH 135; FZH 171; FZH 175

<sup>3)</sup> Gehäuse und Anschlußanordnungen auf Seite 35 ff.  
Packages and pin configurations on page 35 etc.

## Digitale ICs, LSL-Serie

### Digital ICs, LSL Series

Typ Type	Funktion Function	Bild Figure	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 499
■ FZH 205	6 Inverter mit Strobeeingängen Hex inverter with strobe inputs	3/206	Q67000-H637	5			
■ FZH 215 S	LSL-Treiber und Pegelwandler LSL driver stage and level converter	3/207	Q67000-H2431	5			
■ FZH 235	2 NAND-Glieder mit je 5 Eingängen, offenem Kollektor und N-Anschluß Dual 5-input NAND-gate with open collector out- put and N-input	3/208	Q67000-H643	5			
■ FZH 245 B	2 NAND-Schmitt-Trigger mit je 4 Eingängen, Erweiterungseingang N1 und N-Anschluß Dual 4-input NAND- Schmitt-Trigger with expander node N1 and N-input	3/209	Q67000-H646	5			
■ FZH 255 B	4 UND-Glieder mit je 2 Eingängen und N-Anschluß Quad 2-input AND-gate with N-input	3/210	Q67000-H818	5			
■ FZH 265 B	2 NAND-Glieder mit je 3 Eingängen und 4 Inver- tern Dual 2-input NAND-gate and quadruple inverter	3/211	Q67000-H820	5			



**Digitale ICs, LSL-Serie**  
**Digital ICs, LSL Series**

Typ Type	Funktion Function	Bild Figure	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 499
■ FZH 275	4 Exklusiv-ODER-Glieder mit je 2 Eingängen und N-Anschluß Quad 2-input exclusive-OR-gate with N-input	3/210	Q67000-H822	5			
■ FZH 285 B	4 NOR-Glieder mit je 2 Eingängen und N-Anschluß Quad 2-input NOR-gate with N-input	3/210	Q67000-H824	5			
■ FZH 295 B	4 ODER-Glieder mit je 2 Eingängen und N-Anschluß Quad 2-input OR-gate with N-input	3/210	Q67000-H826	5			
■ FZH 305	4 NOR-Glieder mit je 2 Eingängen für aktive Eingangsschaltungen Quad 2-input NOR-gate for active input circuits	2/212	Q67000-H1587	5			
■ FZJ 105	JK-Master-Slave-Flipflop mit je 2 J- und K-Eingängen und N-Anschluß JK master slave flipflop with two J- and K-input and N-input	3/213	Q67000-J124	5			
■ FZJ 115	JK-Master-Slave-Flipflop mit N-Anschlüssen JK master slave flipflop with N-input	3/214	Q67000-J125	5			

**3**

## Digitale ICs, LSL-Serie

### Digital ICs, LSL Series

Typ Type	Funktion Function	Bild Figure	Bestellnummer Ordering Code	Stck. Pcs.			
					Min.	min. bis/to 24	25 bis/to 99
■ FZJ 125	2 JK-Master-Slave- Flipflop Dual JK master slave flipflop	3/215	Q67000-J386	5			
■ FZJ 135	4 D-Flipflop Quadruple D flipflop	3/216	Q67000-J389	5			
■ FZJ 145 A	Synchroner Dezimalzähler mit Stell- und Rückstelleingängen, Takt- und Übertragsschaltgliedern und N-Anschluß Synchr. decimal counter with set and reset inputs, clock and transmission switching elements and N-input	3/217	Q67000-J647	5			
■ FZJ 155 A	Synchroner Binärzähler mit Stell- und Rückstelleingängen, Takt- und Übertragsschaltgliedern und N-Anschluß Synchr. binary counter with set and reset inputs, clock and transmission switching elements and N-input	3/217	Q67000-J685	5			
■ FZJ 165	Synchrones 4-bit-Schieberegister mit Stell- und Rückstelleingängen und N-Anschluß Synchronous 4-bit shift register, with set and reset inputs and N-input	3/218	Q67000-J562	5			

## Digitale ICs, LSL-Serie

### Digital ICs, LSL Series

Typ Type	Funktion Function	Bild Figure	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 499
■ FZK 105	Zeitglied mit den Betriebsarten: monostabile Kippstufe, Impulsverzögerung Timer with two modes of operation: monostable multivibrator, pulse delay	3/219	Q67000-K7	5			
■ FZL 105	BCD-Dezimal-Dekoder und Treiber für Ziffernanzeigeröhren BCD-decimal decoder and driver for indicator tubes	3/220	Q67000-L69	5			
■ FZL 125 S	Kurzschlußfester Leistungstreiber mit offenem Kollektor Short-circuit-proof power stage with open collector output	3/221	Q67000-L174	5			
■ FZL 135 S	Kurzschlußfester Leistungstreiber mit offenem Emitter Short-circuit-proof power stage with open emitter output	3/222	Q67000-L175	5			
■ FZL 145 S	Treiber für Leistungsstufen Driver stage for power stages	1/223	Q67000-L176	5			

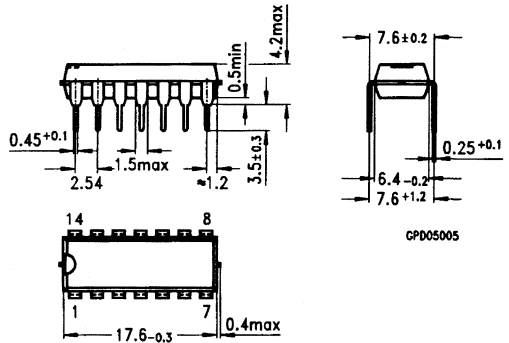
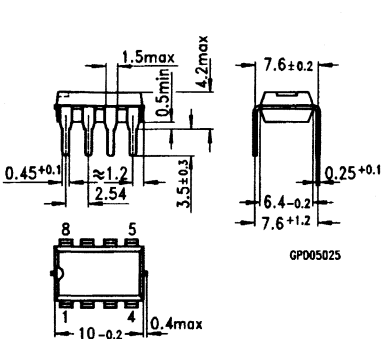
3

Gehäusebauformen (in mm)  
 Package Outlines (in mm)

Bild/Figure 1 ... 3

1

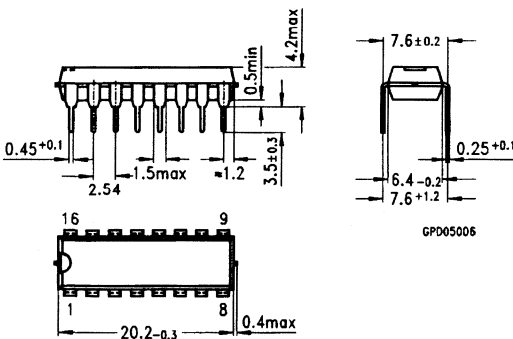
2



Kunststoff-Gehäuse, P-DIP-8  
 Plastic Package, P-DIP-8  
 (Dual-in-Line Package)  
 Gewicht etwa 0,7 g  
 Approx. weight 0.7 g

Kunststoff-Gehäuse, P-DIP-14  
 Plastic Package, P-DIP-14  
 (Dual-in-Line Package)  
 Gewicht etwa 1,1 g  
 Approx. weight 1.1 g

3

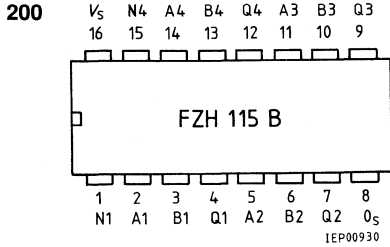


Kunststoff-Gehäuse, P-DIP-16  
 Plastic Package, P-DIP-16  
 (Dual-in-Line Package)  
 Gewicht etwa 1,2 g  
 Approx. weight 1.2 g

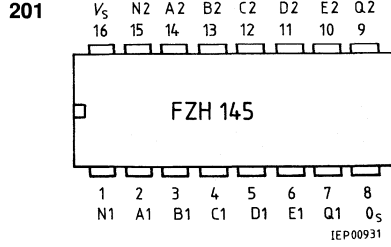
**Anschlußanordnungen**  
**Pin Configurations**

**Bild/Figure 200 ... 205**

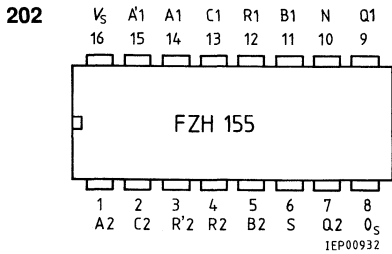
**3**



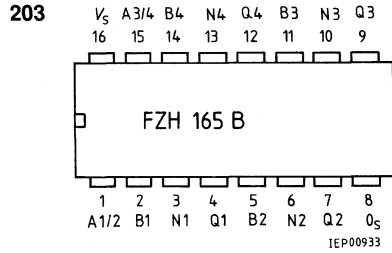
A, B = Eingänge  
 Inputs  
 Q = Ausgänge  
 Outputs



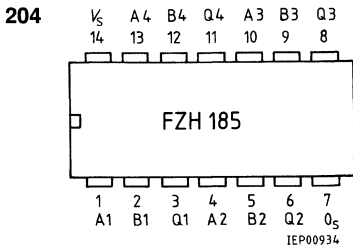
A, B, C, D, E = Eingänge  
 Inputs  
 Q = Ausgänge  
 Outputs



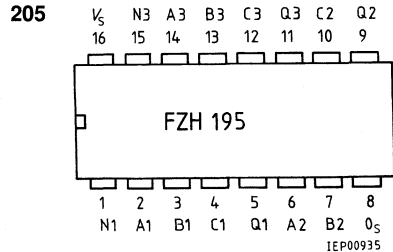
A, B, C, R, S = Eingänge  
 Inputs  
 Q = Ausgänge  
 Outputs



A, B = Eingänge  
 Inputs  
 Q = Ausgänge  
 Outputs



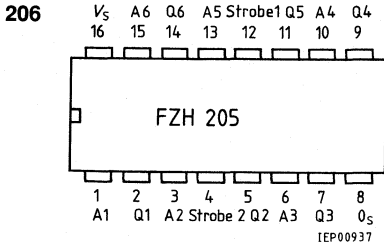
A, B = Eingänge  
 Inputs  
 Q = Ausgänge  
 Outputs



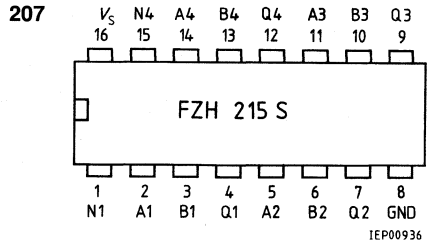
A, B, C = Eingänge  
 Inputs  
 Q = Ausgänge  
 Outputs

**Anschlußanordnungen**  
**Pin Configurations**

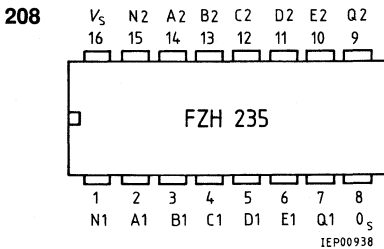
**Bild/Figure 206 ... 211**



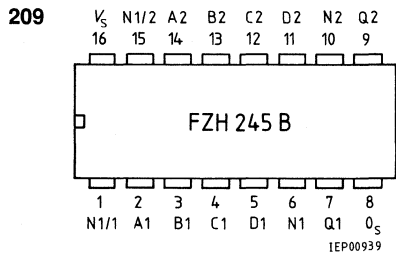
A, B = Eingänge Strobe: 1, 4, 5, 6  
 Inputs  
 Q = Ausgang Strobe 2, 3  
 Outputs



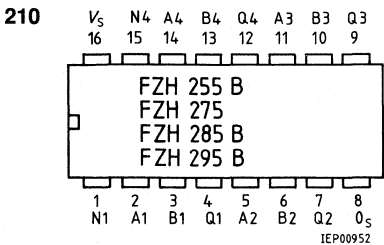
A, B = Eingänge  
 Inputs  
 Q = Ausgang  
 Output



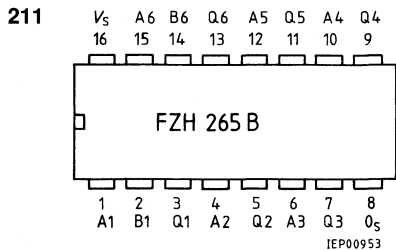
A, B, C, D, E = Eingänge  
 Inputs  
 Q = Ausgang  
 Output



A, B, C, D = Eingänge  
 Inputs  
 Q = Ausgang  
 Output  
 N1 = Erweiterungsingang  
 Expander node



A, B = Eingänge  
 Inputs  
 Q = Ausgang  
 Output

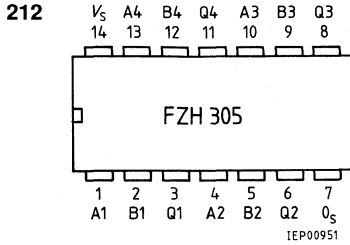


A, B = Eingänge  
 Inputs  
 Q = Ausgang  
 Output

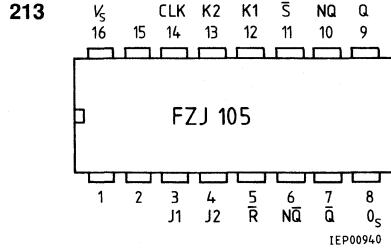
Anschlußanordnungen  
Pin Configurations

Bild/Figure 212 ... 217

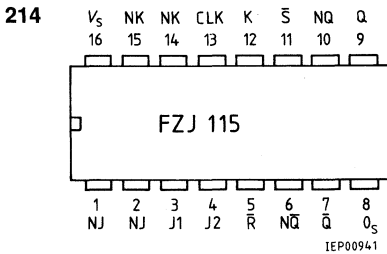
3



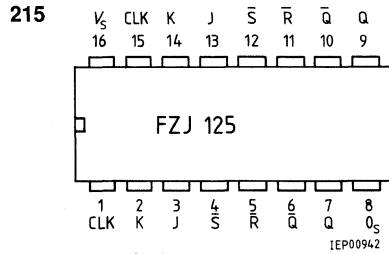
A, B = Eingänge  
Inputs  
Q = Ausgang  
Output



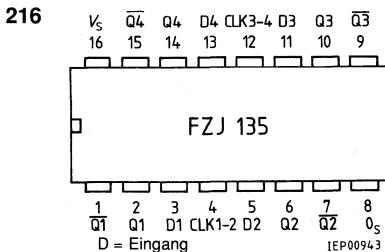
CLK = Clock input  
J, K = Eingänge  
Inputs  
R̄, S̄ = Reset, set  
Q/Q̄ = Ausgänge  
Outputs



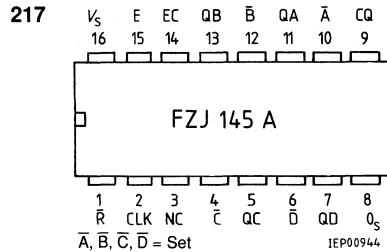
CLK = Clock input  
J, K = Eingänge  
Inputs  
R̄, S̄ = Reset, set  
Q/Q̄ = Ausgänge  
Outputs



CLK = Clock input  
J, K = Eingänge  
Inputs  
R̄, S̄ = Reset, set  
Q/Q̄ = Ausgänge  
Outputs



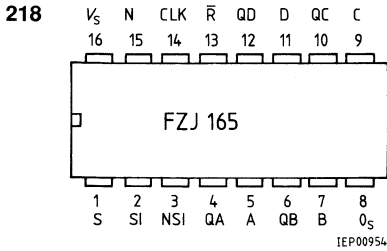
D = Eingang  
Input  
Q, Q̄ = Ausgänge  
Outputs  
CLK = Clock input



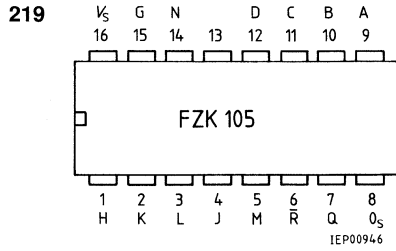
Ā, B̄, C̄, D̄ = Set  
CLK = Clock input  
Ü = Carry  
F = Enable  
R̄ = Reset  
Q, Q̄ = Ausgänge  
Outputs

**Anschlußanordnungen**  
**Pin Configurations**

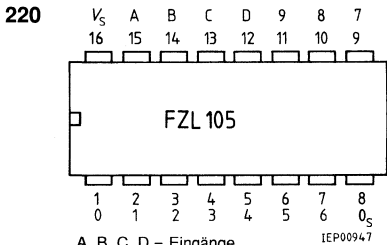
**Bild/Figure 218 ... 221**



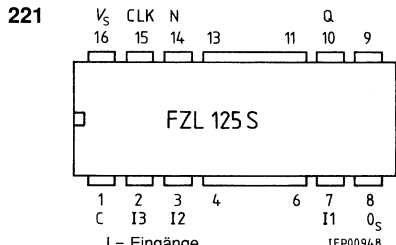
A, B, C, D, S = Set  
 $\bar{R}$  = Reset  
 SE = Serial input  
 CLK = Clock input  
 QA - QD = Ausgänge  
 Outputs



A, B, C, D = Eingänge  
 Input  
 J, K, L, M = Functional inputs  
 Q = Ausgang  
 Output  
 $\bar{R}$  = Reset



A, B, C, D = Eingänge  
 Inputs  
 0 - 9 = Ausgänge  
 Outputs

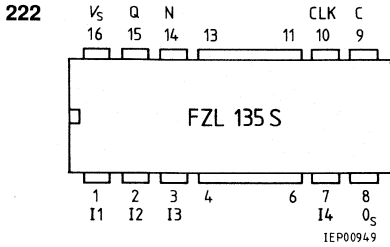


I = Eingänge  
 Inputs  
 Q = Ausgang  
 Output  
 CLK = Clock output  
 C = Anschluß für Taktkondensator  
 Connection for clock capacitor

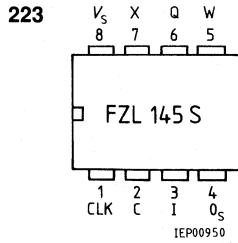


Anschlußanordnungen  
 Pin Configurations

Bild/Figure 222 ... 223



- I = Eingänge  
Inputs
- Q = Ausgang  
Output
- CLK = Clock output
- C = Taktkondensator-Pin  
Clock capacitor pin



- I = Eingänge  
Inputs
- Q = Ausgang  
Output
- CLK = Clock output
- C = Taktkondensator-Pin  
Clock capacitor pin
- X, W = Anschlüsse f. ext. Kurzschlußsicherung  
Connections for ext. short-circuit protection



## ICs für die Unterhaltungselektronik ICs for Entertainment Electronics

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.		
					min. bis/to 99	100 bis/to 499

### Bild-ZF-ICs

#### Video IF ICs

TDA 5930	Multistandard-Video-ZF Multistandard video IF IC	P-DIP-16	Q67000-A8169	25		
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### Ton-ZF-Verstärker

#### Tone IF Amplifiers

TBA 120 T	– für Keramikresonator – for ceramic resonator	P-DIP-14	Q67000-A919	50		
▼ TBA 229-2	– für LC-Kreis – for LC networks	P-DIP-16	Q67000-A8037	25		

### PLL

#### PLL

SDA 3302	1,3 GHz PLL für TV-Bänder 1.3 GhZ PLL for TV bands	P-DIP-18	Q67000-H5005	40		
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### Nichtflüchtige Speicher (EEPROM)

#### Non-Volatile Memories (EEPROM)

SDA 2506-3	1-Kbit, 3 line bus	P-DIP-8	Q67100-H5059	50		
SDA 2516-2	1-Kbit, I <sup>2</sup> C bus interface	P-DIP-8	Q67100-H5002	50		
SDA 2526-2	2-Kbit, I <sup>2</sup> C bus interface	P-DIP-8	Q67100-H5001	50		
SDA 2546	4-Kbit, I <sup>2</sup> C bus interface	P-DIP-8	Q67100-H8616	50		
SDA 2586	8-Kbit, I <sup>2</sup> C bus interface	P-DIP-8	Q67100-H8617	50		

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

## ICs für die Unterhaltungselektronik ICs for Entertainment Electronics

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.		
					min. bis/to 99	100 bis/to 499

### Stereo-Ton-IC Stereo Tone IC

▼ TDA 6200	Stereo-Klangregler Stereo sound	P-DIP-28	Q67000-A2461	10		
▼ TDA 6600-2	TV Stereo Dekoder und Matrix TV stereo decoder with matrix	P-DIP-24	Q67000-A8210	15		
TDA 6610-2	TV-Stereo-Prozessor TV stereo processor	P-DIP-28	Q67000-A5026	10		
▼ TDA 6611	TV Stereo-Prozessor TV stereo processor	P-DIP-24	Q67000-A8260	10		

### NF-Leistungsverstärker AF Power Amplifiers

TDA 4935	2 × 15 W Stereo/Brücken-Verstärker Stereo/bridge amplifier	P-SIP-9	Q67000-A2538	20		
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### Schaltnetzteil ICs

#### Switch-Mode Power Supply ICs

TDA 4601	Steuer ICs für SNT	P-SIP-9	Q67000-A2379	40		
TDA 4605-2	Control ICs for SMPS	P-DIP-8	Q67000-A5020	50		

### Videotext ICs und VPT System

#### Teletext ICs and VPT System

SDA 5231-2	Data-Slicer für VTX-Prozessor Data slicer for TTX processor	P-DIP-28	Q67000-A5006	10		
SDA 5243-2	Videotext-Prozessor Teletext Processor	P-DIP-40	Q67100-H5031	10		

### VCR – VPS IC

SDA 5642	Ein-Chip-VPS-Decoder Single-chip VPS decoder	P-DIP-14	Q67100-H8547	25		
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Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

3

## ICs für die Unterhaltungselektronik ICs for Entertainment Electronics

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.		
					min. bis/to 99	100 bis/to 499
<b>Bild-im-Bild Picture-in-Picture</b>						
SDA 9086-3	PLL für BIB System PLL for PIP System	P-DIP-8	Q67100-H5045	10		
▼ SDA 9087-2	A/D-Schnittstelle für eingebledetes Bild A/D Interface for Inserted Picture	P-DIP-28	Q67100-H5066	10		
SDA 9088-2	Bildeinblendungs- prozessor Picture Insertion Processor	P-DIP-28	Q67100-H5043	10		
<b>Autoradio FM-ZF Car Radio IC FM-IF</b>						
▼ TDA 4210-3	– für LC Kreis – for LC networks	P-DIP-18	Q67000-A8008	20		
<b>Analog-Digital Converter – ADC Analog-Digital Converter – ADC</b>						
▼ SDA 9205-2	3-fach 8-Bit Triple 8 bit	P-LCC-68	Q67100-H5029	5		
<b>Video-Speicher VRAM</b>						
▼ SDA 9251 X	868352-Bit Dynamic Sequential Access Memory for Television Applications (TV-SAM)	P-DSO-28- 350	Q67100-H5063	5		

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

# ICs für die Automobilelektronik

## ICs for Automotive Electronics

3

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. Min.	25 bis/to 99	100 bis/to 499

### Hall ICs

▼ HKZ 121	Hall-Magnetgabelschranke Hall-effect vane switch	Sondergehäuse Special Package	Q67000-A9097	5			
● TLE 4901 F	bipolar	P-SSO-3	-A2518	10			
● TLE 4902 F	bipolar	P-SSO-3	-A8048	50			
● TLE 4903 F	unipolar	P-SSO-3	-A8047	10			
● TLE 4910 G	analog	P-DSO-8	-A9009	10			
■ TLE 4920 G	Differenz-Hall-Sensor Differential-Hall-Sensor	P-DSO-8	-A9000	10			

### ICs für Motorsteuerung

#### ICs for Motor Control

TLE 4201 A1	1A-Brücke/bridge	P-DIP-18-L9	Q67000-A8080	10			
TLE 4201 S1	1A-Brücke/bridge	P-SIP-9	-A2285	10			
▼ ● TLE 4202	2A-Brücke/bridge	P-T66-7-H	-A8007	5			
● TLE 4202 B	2A-Brücke/bridge	P-T66-7-H	-A8225	10			
● TLE 4203	4A-Brücke/bridge	P-T66-7-H	-A8121	10			
▼ ● TLE 4203 S	4A-Brücke/bridge	P-T66-7-S	-A9101	10			
▼ ● TLE 4205	0.6A-Brücke/bridge	P-DIP-18-L9	-A9025	10			

### N-Leistungsschalter

#### N-Power Switches

● TLE 4211	2 × 2A Schalter/switch	P-T66-7-H	Q67000-A8118	10			
● TLE 4214	2 × 0,5A Schalter/switch	P-DIP-8	-A8183	10			
▼ ● TLE 4216	2 × 0,5A + 4 × 50mA Schalter/switch	P-DIP-20L16	-A8237	10			
▼ ● TLE 4220	4A Schalter/switch	P-T66-7-H	-A9010	10			

### P-Leistungsschalter

#### High-Side-Power Switches

▼ ● TLE 4215	2 × 0,5A Schalter/switch	P-DIP-20L16	Q67000-A8184	10			
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■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

# ICs für die Automobilelektronik

## ICs for Automotive Electronics

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 499

### 5-V Low-Drop-Spannungsregler mit Reset

### 5-V Low-Drop Voltage Regulators with Reset

5-V Low-Drop-Spannungsregler mit Reset							
			Q67000				
● TLE 4258	Standby	P-T66-7-H	-A8238	10			
● TLE 4260		P-T66-5-H	-A8187	10			
▼ ● TLE 4260 S		P-T66-5-S	-A9044	10			
● TLE 4261	Watchdog, inhibit	P-T66-7-H	-A9003	10			
▼ ● TLE 4261 G		P-DSO-20L12	-A9059	10			
▼ ● TLE 4262 G	Watchdog, inhibit	P-DSO-20L12	-A9068	10			
▼ ● TLE 4263 G		P-DSO-20L12	-A9095	10			

### Statische RAMs

### Static RAMs

Statische RAMs							
			Q67100				
SAE 81C52 G	CMOS, 256 × 8-Bit	P-DSO-20	-H8004	10			
SAE 81C52 P		P-DIP-16	-H8003	10			
▼ SAE 81C54 P	CMOS, 512 × 8-Bit	P-DIP-16	-H8486	10			
● SAE 81C80 A		PL-CC-44	-H8706	5			

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

# ICs für die Industrielektronik

## ICs for Industrial Electronics

Typ Type	Temperaturbereich Temperature range	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999
				Min.				

### Einfach-Operationsverstärker (NPN-Eingang, offener Kollektor, 70 mA, ± 18 V)

### Single-Operational Amplifiers (NPN Input, Open Collector, 70 mA, ± 18 V)

● TAA 762 A	- 55 ... 125 °C	P-DIP-6	Q67000- -A2271	25				
TAA 765 A	- 25 ... 85 °C	P-DIP-6	-A524	25				
TAA 765 G	- 25 ... 85 °C	P-DSO-6	-A599	25				

### Einfach-Operationsverstärker (PNP-Eingang, offener Kollektor, 100 mA, ± 18 V)

### Single-Operational Amplifiers (PNP Input, Open Collector, 100 mA, ± 18 V)

TAE 1453 A	- 25 ... 85 °C	P-DIP-6	Q67000- -A2017	25				
TAE 1453 G	- 25 ... 85 °C	P-DSO-6	-A2106	25				
● TAF 1453 A	- 55 ... 125 °C	P-DIP-6	-A2269	25				

### Einfach-Operationsverstärker (NPN-Eingänge)

### Single-Operational Amplifiers (NPN Inputs)

●● TCA 312 A	- 55 ... 125 °C	P-DIP-6	Q67000- -A2048	25				
■ TCA 315 A	- 25 ... 85 °C	P-DIP-6	-A561	25				
■ TCA 315 G	- 25 ... 85 °C	P-DSO-6	-A1005	25				

### Einfach-Operationsverstärker mit Darlington-Eingang

### Single-Operational Amplifiers with Darlington Input

●● TCA 332 A	- 55 ... 125 °C	P-DIP-6	Q67000- -A2272	25				
■ TCA 335 A	- 25 ... 85 °C	P-DIP-6	-A563	25				
■ TCA 335 G	- 25 ... 85 °C	P-DSO-6	-A1018	25				

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

# ICs für die Industrielektronik

## ICs for Industrial Electronics

Typ Type	Temperaturbereich Temperature range	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

### Zweifach-Operationsverstärker (NPN-Eingänge, Offener Kollektor, 70 mA, ± 15 V) Dual-Operational Amplifiers (NPN Inputs, Open Collector, 70 mA, ± 15 V)

● TAA 2762 A	- 55 ... 125 °C	P-DIP-8	Q67000- -A2499	20				
TAA 2765 A	- 25 ... 85 °C	P-DIP-8	-A1031	25				

### Zweifach-Operationsverstärker (PNP-Eingänge, Offener Kollektor, 100 mA, ± 18 V) Dual-Operational Amplifiers (PNP Inputs, Open Collector, 100 mA, ± 18 V)

TAE 2453 A	- 25 ... 85 °C	P-DIP-8	Q67000- -A2107	25				
TAE 2453 G	- 25 ... 85 °C	P-DSO-8	-A2108	25				
● TAF 2453 A	- 55 ... 125 °C	P-DIP-8	-A2210	20				

### Zweifach-Operationsverstärker (Darlington-Eingang) Dual-Operational Amplifiers (Darlington Input)

○ ● TBC 2332 B	- 55 ... 125 °C	P-DIP-8	Q67000- -A2500	20				
TBE 2335 B	- 25 ... 85 °C	P-DIP-8	-A1165	25				

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«



## ICs für die Industrieelektronik ICs for Industrial Electronics

**3**

Typ Type	Temperaturbereich Temperature range	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

**Vierfach-Operationsverstärker (PNP-Eingang, Offener Kollektor, 100 mA, ± 18 V)  
Quad-Operational Amplifiers (PNP Input, Open Collector, 100 mA, ± 18 V)**

			Q67000-					
TAE 4453 A	- 25 ... 85 °C	P-DIP-14	-A2109	15				
TAE 4453 G	- 25 ... 85 °C	P-DSO-14	-A2152	15				
● TAF 4453 A	- 55 ... 125 °C	P-DIP-14	-A2212	10				

**Vierfach-Operationsverstärker (PNP-, Darlington-Eingang, 70 mA, ± 15 V)  
Quad-Operational Amplifiers (PNP, Darlington Input, 70 mA, ± 15 V)**

			Q67000-					
■ TBE 4335 A	- 25 ... 85 °C	P-DIP-14	-A1167	15				

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

# ICs für die Industrielektronik

## ICs for Industrial Electronics

Typ Type	Funktion Function Temperaturbereich Temperature range	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.  Min.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

### Leistungsoperationsverstärker / Leistungstreiber Power Operational Amplifiers / Power Drivers

FZL 4145 D	Vierfachtreiber für Leistungsendstufen Quadruple driver for power stages	P-DIP-18	Q67000- -H8437	5				
▼ FZL 4146 G	Vierfachtreiber für Leistungsendstufen Quadruple driver for power stages	P-DSO-20- L18	-H8743	5				
■ TCA 365 B	1 × 4A/42V	P-T66-5-H	-A8189	10				
■ TCA 1365 B	1 × 4A/42V	P-T66-7-H	-A8190	10				
TCA 2365	2 × 2.5A/36V	P-SIP-9	-A1876	5				
TCA 2465	2 × 2.5A/42V	P-SIP-9	-A8109	20				
TCA 2465 A	2 × 2.5A/42V	P-DIP-16- L10	-A8110	5				

### Schwellenwertschalter Threshold Switches

TCA 105	- 25 ... 85 °C	P-DIP-6	Q67000- -A527	10				
▼ TCA 105 B	- 25 ... 85 °C	P-DIP-6	-A587	10				
TCA 105 G	- 25 ... 85 °C	P-DSO-6	-A988	10				
■ TCA 345 A	- 25 ... 85 °C	P-DIP-4	-A564	10				

### Einfach-Komparatoren, TTL-Kompatibel Single Comparators, TTL-Compatible

■ ● TCA 322 A	- 55 ... 125 °C	P-DIP-6	Q67000- -A2501	25				
■ TCA 325 A	- 25 ... 85 °C	P-DIP-6	-A562	25				
■ TCA 325 G	- 25 ... 85 °C	P-DSO-6	-A1012	25				

### Fensterdiskriminator Window Discriminator

TCA 965	- 25 ... 85 °C	P-DIP-14	Q67000- -A982	10				
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■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

<sup>1)</sup> Solange Vorrat reicht.

<sup>2)</sup> As long as quantities last.

# ICs für die Industrielektronik

## ICs for Industrial Electronics

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

### Schaltnetzteil ICs

#### Switched-Mode Power Supply ICs

Typ	Funktion	Gehäuse	Bestellnummer	Stck.	min. bis/to	25 bis/to	100 bis/to	500 bis/to
TDA 4700 A	Steuer IC für	P-DIP-24	Q67000- -Y594	5				
▼ TDA 4714 C	bipolare Leistungs-	P-DIP-14	-A8312	5				
▼ TDA 4716 C	stufen	P-DIP-16	-A8313	5				
TDA 4718	Control IC for	C-DIP-18	-Y638	5				
TDA 4718 A	bipolar power	P-DIP-18	-Y639	5				
	stages							
TDA 4814 A	IC für sinusförmige	P-DIP-14	-A8163	5				
▼ TDA 4816 G	Netzstrom-	P-DSO-14	-A8290	5				
	aufnahme							
	IC for sinusoidal							
	line-current con-							
	sumption							
▼ TDA 4817	wie / like	P-DIP-8	-8298	5				
▼ TDA 4817 G	TDA 4814A,	P-DSO-8	-8299	5				
	TDA 4816 G							
TDA 4918 A	Steuer IC für MOS-	P-DIP-20	-A8021	5				
TDA 4918 G	Leistungsstufen	P-DSO-20	-A8142	5				
TDA 4919 A	Control IC for MOS	P-DIP-20	-A8143	5				
TDA 4919 G	power stages	P-DSO-20	-A8018	5				

### Transistor-Arrays (5 NPN-Transistoren)

#### Transistor Arrays (5 NPN-Transistors)

Typ	Funktion	Gehäuse	Bestellnummer	Stck.	min. bis/to	25 bis/to	100 bis/to	500 bis/to
■ TCA 671	$V_{CE0} = 42 V$	P-DIP-14	Q67000- -T1	25				
■ TCA 671 G	$V_{CE0} = 42 V$	P-DSO-14	-A2366	25				
■ TCA 871	$V_{CE0} = 32 V$	P-DIP-14	-T2	25				
■ TCA 871 G	$V_{CE0} = 32 V$	P-DSO-14	-A2367	25				
■ TCA 971	$V_{CE0} = 42 V$	P-DIP-14	-T11	25				
■ TCA 971 G	$V_{CE0} = 42 V$	P-DSO-14	-A8075	25				
■ TCA 991	$V_{CE0} = 32 V$	P-DIP-14	-T12	25				
■ TCA 991 G	$V_{CE0} = 32 V$	P-DSO-14	-A8076	25				

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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# ICs für die Industrieelektronik

## ICs for Industrial Electronics

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

### Phasenanschnittsteuerungen Phase Control ICs

TCA 785	für Thyristoren for Thyristors	P-DIP-16	Q67000- -A2321	5				
■ TLE 3101	für Triacs	P-DIP-18	-A2337	10				
■ TLE 3102	for Triacs	P-DIP-14	-A2338	10				
■ TLE 3103		P-DIP-14	-A2339	10				
■ TLE 3104		P-DIP-8	-A2312	10				

### A/D Umsetzer

#### A/D Converters

● SDA 5200 N	6-bit/100 MHz	C-DIP-16	Q67000- -A2242	1				
● SDA 5200 S	6-bit/100 MHz	C-DIP-16	-A2243	1				
● SDA 0808 B	8-bit, $\mu$ P-kompatibel 8-bit, $\mu$ P-compatible	P-DIP-28	-A8129	10				
● SDA 0810 B	8-Kanal-Mux 8-channel-mux							
● SDA 0810 B	10-bit, 8-Kanal-Mux 8-channel mux	P-DIP-28	-A8144	10				
▼ SDA 1810 D	10-bit/66 kHz, 8-Kanal-Mux 8-channel mux	P-DIP-28	-H8730	10				
▼ SDA 0812 A	12-bit, selbstkal. 4-Kanal-Mux	P-DIP-28	-A8233	1				
▼ SDA 1812 D	12-bit, selfcal. 4-channel mux							
▼ SDA 1812 D	12-bit/100 kHz, 4-Kanal-Mux 4-channel mux	P-DIP-28	-A8291	1				
■ ● SDA 8010	8-bit/100 MHz $\pm 1/2$ LSB ECL kompatibel ECL compatible	C-DIP-24	-A2566	1				

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

# ICs für die Industrielektronik ICs for Industrial Electronics

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Typ Type	Funktion Function	Gehäuse Package	Bestell-Nr. Ordering Code	Stck. Pcs.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

## Zeitgeberschaltungen – Programmierbare Digitale Timer Timer ICs – Programmable Digital Timers

▼ SAE 0530 <sup>1)</sup>	≥ 31.5 h; 50 Hz	P-DIP-18	Q67000- -H8403	5				
▼ SAE 0531	≥ 31.5 h; 60 Hz	P-DIP-18	-H8431	5				
▼ SAE 0532 G <sup>2)</sup>	≥ 31.5 h; 50/60 Hz	P-DSO-20	-H8432	5				
▼ TBB 278 B	Videoimpulsgeber Video pulse generator	P-DIP-22	Q67100- -H8759	10				

## Tongebeschaltungen Audible Signal ICs

SAB 0600	Dreiklang-Gong IC Three-tone chime IC	P-DIP-8	Q67000- -H1948	5				
SAB 0601	Einklang-Gong Single-tone chime	P-DIP-8	-H2312	5				
SAB 0602	Zweiklang-Gong Dual-tone chime	P-DIP-8	-H2313	5				
■ SAE 0700	Signalton-Generator IC Audible signal IC	P-DIP-8	-A2445	10				

## Ansteuerschaltungen für Motoren DC Motor Control ICs

■ SLE 4520	Pulsweitenmodulator Pulse width modulator	P-DIP-28	Q67100- -H8271	2				
■ TCA 955	Drehzahlregler (1800-9000 U/m), einstellbar (16 V) Speed controller (1800-9000 rpm), adjustable (16 V)	P-DIP-16	Q67000- -A983	5				
■ TCA 1560 B	Schrittmotortreiber	P-DIP-18	-A8208	10				
TCA 1561 B	Stepper motor driver	P-SIP-9	-A8209	5				
TCA 3727	2-Phasen-Schrittmotortreiber	P-DIP-20-L16	-A8302	5				
TCA 3727 G	2-phase stepper motor driver	P-DSO-24-L16	-A8335	5				

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

<sup>1)</sup> Ersatz für SAB 529.  
Replacement for SAB 529.

<sup>2)</sup> Ersatz für SAB 529 G.  
Replacement for SAB 529 G.

# ICs für die Industrieelektronik

## ICs for Industrial Electronics

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stk. Pcs.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

### Näherungsschalter

#### Proximity Switches

					Q67000-				
■ TCA 205 A		P-DIP-14	-A1034	10					
TCA 305 A	Stromaufnahme	P-DIP-14	-A2291	10					
TCA 305 G	< 1 mA	P-DSO-14	-A2305	10					
TCA 355 B	Current consumption	P-DIP-8	-A2443	10					
TCA 505 G	< 1 mA	P-DSO-8	-A2444	10					
▼ TCA 505 B <sup>1)</sup>		P-DIP-16	-A8344	10					
▼ TCA 505 BG <sup>2)</sup>		P-DSO-16	-A8341	10					
▼ TCA 605 G	2-Draht; Stromaufnahme < 0,5 A Current consumption < 0,5 A	P-DSO-16	-A8292	10					

### Dimmer

#### Dimmers

					Q67100-				
SLB 0586 A	Dimmer-IC für Glühlampen	P-DIP-8	-H8721	10					
SLB 0586 G	Dimmer-IC for incandescent lamps	P-DSO-8	-H8720	10					
▼ SLB 0587	Dimmer-IC für Glüh- und Halogenlampen	P-DIP-8	-A8310	10					
▼ SLB 0587 G	Dimmer IC for incandescent and halogen lamps	D-DSO-8	-A8315	10					

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

<sup>1)</sup> Ersatz für TCA 505 A.  
Replacement for TCA 505 A.  
<sup>2)</sup> Ersatz für TCA 505 B.  
Replacement for TCA 505 B.

# ICs für die Informationstechnik ICs for Communications

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.				
					min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

## ICs für Professionelle Funkgeräte ICs for Mobile Communication

TBB 202	Dual-Modulus-	P-DIP-8	Q67000- -H8217	5				
TBB 202 G	Teiler 128/129, 16 Hz	P-DSO-8	-H8218	5				
TBB 212 A	Dual modulus	P-DIP-8	-A8760	5				
TBB 212 AG	divider 64/65, 16 Hz	P-DSO-8	-A8761	5				
TBB 204 G	Mixer IC	P-DSO-14	-A8213	5				
TBB 200	PLL-Frequenz-	P-DIP-14	Q67100- -H8215	5				
TBB 200 G	Synthesizer mit I <sup>2</sup> C-Bus PLL frequency synthesizer with I <sup>2</sup> C-bus	P-DSO-14	-H8216	5				
TBB 206	PLL-Frequenz-	P-DIP-14	Q67000- -H8722	5				
TBB 206 G	Synthesizer mit 3-Leiter Bus PLL frequency synthesizer with 3-line bus	P-DSO-14	-H8723	5				
▼ PMB 2200 T	GSM Sender GSM emitter	P-DSO-20	Q67000- -A6025 -C701	5				
▼ PMB 2400 T	GSM Empfänger GSM receiver	P-DSO-24	-A6024 -X201A1	5				

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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# ICs für die Informationstechnik

## ICs for Communications

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 499

### ISDN

▼ ● PEB 2055-P-VA3	Extended PCM Interface Controller (EPIC™-1)	P-DIP-40	Q67100- -H6036	1			
▼ ● PEB 2055-N-VA3	Extended PCM Interface Controller (EPIC™-1)	P-LCC-44	-H6035	1			
● PEB 2070-P-V2.4	ISDN	P-DIP-24	-H6212	1			
● PEB 2070-N-V2.4	Communications Controller (ICC)	P-LCC-28-R	-H6213	1			
▼ ● PEB 2075-N-V1.3	ISDN D-Channel Exchange Controller (IDEC)	P-LCC-44	-H6189	1			
● PEB 2080-N-VB1	Circuit (SBC)	P-LCC-28-R	-H8395	1			
● PEB 2095-N-VA5	Transceiver Circuit (IBC)	P-LCC-28-R	-H8396	1			

### Digitale Sprach-Datenterminals

#### Digital Speech-Data Terminals

● PEB 2085-P-V2.3	ISDN Subscriber	P-DIP-40	Q67100- -H8401	1			
● PEB 2085-N-V2.3	Access Contr. (ISAC®-S)	P-LCC-44	-H8601	1			
▼ ● PEB 2110-P-V2.2	ISDN Terminal	P-DIP-40	-H6294	1			
▼ ● PEB 2110-N-V2.2	Adapter Circuit (ITAC®)	P-LCC-44	-H8644				
● PSB 2120-P-VB4	ISDN Remote Power Controller (IRPC)	P-DIP-22	-H8645	5			
● PSB 2121-P-VA4	General Purpose	P-DIP-16	-H8646	5			
● PSB 2121-T-VA4	Power Controller (GPPC)	P-DSO-16	-H6032	5			
● PSB 2160-P-V2.2	Audio-Ringing	P-DIP-24	-H8503	1			
● PSB 2160-N-V2.2	CODEC-Filter (ARCOFI®)	P-LCC-28-R	-H6031	1			

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«



# ICs für die Informationstechnik ICs for Communications

Typ Type	Funktion Function	Gehäuse Package	Bestell-Nr. Ordering Code	Stück. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 499

## ICs für Digitale Vermittlungssysteme ICs for Digital Exchange Systems

Typ	Funktion	Gehäuse	Bestell-Nr.	Stück.	min. bis/to	25 bis/to	100 bis/to
● PEB 2045-P-VA3	Memory Time	P-DIP-40	Q67100- -H8322	1			
● PEB 2045-N-VA3	Switch CMOS (MTSC)	P-LCC-44	-H8602	1			
● PEB 2046-P-VA3	Memory Time	P-DIP-40	-H6105	1			
● PEB 2046-N-VA3	Switch Small (MTSS)	P-LCC-44	-H6104	1			
● PEB 2047-N-V2.1	Memory Time Switch Large (MTSL)	P-LCC-44	-H6238	1			
● PEB 2050-P-VB1	Peripheral Board	P-DIP-40	-H3032	1			
● PEB 2050-N-VB1	Controller (PBC)	P-LCC-44	-H8392	1			
● PEB 2055-N-VA3	Extended PCM	P-LCC-44	-H6035	1			
● PEB 2055-P-VA3	Interface Controller (EPIC™-1)	P-DIP-40	-H6036	1			
● PEB 2060-P-V4.4	Signal Processing	P-DIP-22	-Z170	1			
● PEB 2060-N-V4.4	Codec Filter (SICOFI®)	P-LCC-28-R	-H8393	1			
● PEB 2260-N-V2.0	Dual SICOFI (SICOFI®-2)	P-LCC-28	-H6191	1			
● PEB 2235-P-V4.1	ISDN Primay	P-DIP-28	-H6207	1			
● PEB 2235-N-V4.1	Rate Transceiver (IPAT®)	P-LCC-28	-H6208	1			
● PEB 2245-N-V1.2	Multipoint Switching and Conferencing (MUSAC)	P-LCC-44	-H6209	1			

## Datacom ICs

Typ	Funktion	Gehäuse	Bestell-Nr.	Stück.	min. bis/to	25 bis/to	100 bis/to
● SAB 82520-P	High-Level Serial	P-DIP-28	Q67100- -H8014	1			
● SAB 82520-N	Communications Controller (HSCC)	P-LCC-28-R	-H8400	1			
● SAB 82525-N	HDLC Protocol	P-LCC-44	-H8590	1			
● SAB 82526-N	Controller (HSCX)	P-LCC-44	-H6111	1			
● SAB 82532-N	Serial Controller (2 channels) for SYNC/ ASYNc protocols	P-LCC-68	-H6128	1			

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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# ICs für die Informationstechnik

## ICs for Communications

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 499

### ICs für Analoge Endgeräte

### ICs for Analog Telephone Sets

PSB 4500	Speech Circuits	P-DIP-20	Q67000- -A8146	5			
PSB 4500-T		P-DSO-20	-A8147	5			
PSB 4501		P-DIP-20	-A8148	5			
PSB 4501-T		P-DSO-20	-A8149	5			
PSB 4506	Enhanced Speech Circuits (ESC)	P-DIP-28	-A6017	5			
PSB 4506-A		P-DIP-28	-A6019	5			
PSB 4506-AT		P-DSO-28	-A6031	5			
PSB 45030	Handsfree-Add- On-Circuit (HAC)	P-DIP-28	-A6020	5			
PSB 45030-T		P-DSO-28	-A6015	5			
PSB 6520-2	Tone Ringer IC (TRI)	P-DIP-8	-A8093	20			
PSB 6521-2		P-DIP-8	-A8094	20			
PSB 6620		Ringling Detector IC	P-DIP-8	-A2498	10		
PSB 8510-1	Programmable Dialing Circuit (PDC)	P-DIP-20	Q67100- -H6109	5			
PSB 8510-6		P-DIP-20	-H6223	5			
▼ PSB 8510-6T	Programmable Dialing Circuit (PDL)	P-DSO-28	-H6225	5			

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«





## Speicher-Bausteine Memory Components

### Speicher-Bausteine (DRAMs) Memory Components (DRAMs)

Typ Type	Zugriffszeit Access Time	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.	
				Min.	
<b>1M × 1-bit</b>					
● HYB 511000B-60	60 ns	P-DIP-18-T	Q67100-Q512	8	
● HYB 511000B-70	70 ns	P-DIP-18-T	Q67100-Q427	8	
● HYB 511000BJ-60	60 ns	P-SOJ-26/20-300	Q67100-Q515	8	
● HYB 511000BJ-70	70 ns	P-SOJ-26/20-300	Q67100-Q430	8	
● HYB 511000BZ-60	60 ns	P-ZIP-20/19	Q67100-Q521	8	
● HYB 511000BZ-70	70 ns	P-ZIP-20/19	Q67100-Q522	8	
<b>256K × 4-bit</b>					
● HYB 514256B-60	60 ns	P-DIP-20-T	Q67100-Q530	8	
● HYB 514256B-70	70 ns	P-DIP-20-T	Q67100-Q433	8	
● HYB 514256BJ-60	60 ns	P-SOJ-26/20-300	Q67100-Q533	8	
● HYB 514256BJ-70	70 ns	P-SOJ-26/20-300	Q67100-Q436	8	
● HYB 514256BZ-60	60 ns	P-ZIP-20/19	Q67100-Q539	8	
● HYB 514256BZ-70	70 ns	P-ZIP-20/19	Q67100-Q540	8	
<b>4M × 1-bit</b>					
● HYB 514100AJ-70	70 ns	P-SOJ-26/20-300	Q67100-Q584	4	
● HYB 514100AJ-80	80 ns	P-SOJ-26/20-300	Q67100-Q585	4	
<b>1M × 4-bit</b>					
● HYB 514400AJ-70	70 ns	P-SOJ-26/20-300	Q67100-Q590	4	
● HYB 514400AJ-80	80 ns	P-SOJ-26/20-300	Q67100-Q591	4	

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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## Speicher-Bausteine Memory Components

### Speicher-Module mit DRAMs Memory Modules with DRAMs

Typ Type	Zugriffszeit Access Time	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.  Min.	
<b>1M × 9-bit</b>					
▼ ● HYM 91000S-60	60 ns	L-SIM-30-800	Q67100-Q470	1	
● HYM 91000S-70	70 ns	L-SIM-30-800	Q67100-Q445	1	
● HYM 91000L-70	70 ns	L-SIM-30-800	Q67100-Q497	1	
<b>4M × 9-bit</b>					
● HYM 94500S-70	70 ns	L-SIM-30-800	Q67100-Q582	1	
● HYM 94500S-80	80 ns	L-SIM-30-800	Q67100-Q573	1	
<b>256K × 36-bit</b>					
● HYM 362500S-80	80 ns	L-SIM-72-1000	Q67100-Q548	1	
<b>512K × 36-bit</b>					
● HYM 365120S-80	80 ns	L-SIM-72-1000-D	Q67100-Q549	1	
<b>1M × 36-bit</b>					
▼ ● HYM 361120GS-70	70 ns	L-SIM-72-1000-D	Q67100-Q623	1	
▼ ● HYM 361120GS-80	80 ns	L-SIM-72-1000-D	Q67100-Q624	1	
<b>2M × 36-bit</b>					
▼ ● HYM 362120GS-70	70 ns	L-SIM-72-1000-D	Q67100-Q645	1	
▼ ● HYM 362120GS-80	80 ns	L-SIM-72-1000-D	Q67100-Q646	1	

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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**Mikrocomputer-Bausteine**

**Microcomputer Components**

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**5**





# Mikrocomputer-Bausteine Microcomputer Components

## Mikrocontroller Microcontrollers

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stk. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 999

### 8-Bit Ein-Chip-Mikrocontroller (ohne ROM) 8-Bit Single-Chip Microcontrollers (without ROM)

☒ SAB 8031 A-N		P-LCC-44	Q67120-C271	7			
☒ SAB 8031A-P		P-DIP-40	Q67120-C183	7			
☒ SAB 8031A-16-N		P-LCC-44	Q67120-C349	5			
☒ SAB 8031A-16-P		P-DIP-40	Q67120-C347	5			
SAB 8031A-20-N		P-LCC-44	Q67120-C467	5			
SAB 8031A-20-P		P-DIP-40	Q67120-C466	5			
SAB 8032B-N		P-LCC-44	Q67120-C423	6			
SAB 8032B-P		P-DIP-40	Q67120-C419	6			
SAB 8032B-16-N		P-LCC-44	Q67120-C425	5			
SAB 8032B-16-P		P-DIP-40	Q67120-C421	5			
SAB 8032B-20-P		P-DIP-40	Q67120-C471	5			
SAB 80535-N		P-LCC-68	Q67120-C241	2			
SAB 80C32-N	CMOS	P-LCC-44	Q67120-C395	4			
SAB 80C32-P	CMOS	P-DIP-40	Q67120-C378	4			
SAB 80C32-16-N	CMOS	P-LCC-44	Q67120-C502	3			
SAB 80C32-16-P	CMOS	P-DIP-40	Q67120-C500	3			
SAB 80C32-20-N	CMOS	P-LCC-44	Q67120-C711	3			
SAB 80C32-20-P	CMOS	P-DIP-40	Q67120-C709	3			
SAB 80C535-N	CMOS	P-LCC-68	Q67120-C508	2			
SAB 80C535-16-N	CMOS	P-LCC-68	Q67120-C509	2			
SAB 80C537-N	CMOS	P-LCC-84	Q67120-C452	1			
SAB 80C537-16-N	CMOS	P-LCC-84	Q67120-C722	1			
SAB 80C515A-N-18	CMOS	P-LCC-68	Q67120-C581	1			
SAB 80C517A-N-18	CMOS	P-LCC-84	Q67120-C583	1			

☒ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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# Mikrocomputer-Bausteine

## Microcomputer Components

### Mikrocontroller

### Microcontrollers

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 999

**für erweiterten Temperaturbereich von – 40 bis + 85 °C**  
**for Extended Temperature Range from – 40 to + 85 °C**

SAB 8031A-12-P-T40/85		P-DIP-40	Q67120-C230	5			
SAB 8032B-P-T40/85		P-DIP-40	Q67120-C427	5			
SAB 80535-N-T40/85		P-LCC-68	Q67120-C240	2			
SAB 80C32-P-T40/85	CMOS	P-DIP-40	Q67120-C520	3			
SAB 80C32-16-P-40/85	CMOS	P-DIP-40	Q67120-C527	3			
SAB 80C535-N-T40/85	CMOS	P-LCC-68	Q67120-C510	2			
SAB 80C535-16-N-T40/85	CMOS	P-LCC-68	Q67120-C562	2			
SAB 80C537-N-T40/85	CMOS	P-LCC-84	Q67120-C484	1			
SAB 80C537-16-N-T40/85	CMOS	P-LCC-84	Q67120-C725	1			
SAB 80C515A-N18-T3	CMOS	P-LCC-68	Q67120-C784	1			
SAB 80C517A-N18-T3	CMOS	P-LCC-84	Q67120-C769	1			

### Experimentierplatine für 8-Bit Single-Chip Mikrocontroller

### Experimental Board for 8-Bit Single-Chip Microcontrollers

EMOD-C517	–	–	Q67120-C486	1			
EPC 535	–	–	Q67120-C300	1			

### 16-Bit Ein-Chip-Mikrocontroller (ohne ROM)

### 16-Bit Single-Chip Microcontrollers (without ROM)

● SAB 80C166-S	CMOS	P-MQFP-100	Q67120-C493	1			
● SAB 80C166-S16	CMOS	P-MQFP-100	Q67120-C777	1			
▼● SAB 80C166-S16-T3	CMOS	P-MQFP-100	Q67120-C782	1			

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

# Mikrocomputer-Bausteine Microcomputer Components

## Mikroprozessoren Microprocessors

Typ Type	Takt Clock	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 999

### 8-Bit Mikroprozessoren

#### 8-Bit Microprocessors

SAB 8085AH-P	3 MHz	P-DIP-40	Q67120-C122	20			
SAB 8085AH-2-P	5 MHz	P-DIP-40	Q67120-C124	20			
SAB 8088-1-P	10 MHz	P-DIP-40	Q67120-C249	10			
SAB 8088-2-P	8 MHz	P-DIP-40	Q67120-C213	10			
SAB 80188-N	8 MHz	P-LCC-68	Q67120-C252	10			
SAB 80188-1-N	10 MHz	P-LCC-68	Q67120-C299	10			

### 16-Bit Mikroprozessoren

#### 16-Bit Microprocessors

SAB 8086-1-P	10 MHz	P-DIP-40	Q67120-C141	10			
SAB 8086-2-P	8 MHz	P-DIP-40	Q67120-C142	10			
SAB 80186-N	8 MHz	P-LCC-68	Q67120-C250	10			
SAB 80186-1-N	10 MHz	P-LCC-68	Q67120-C306	10			
SAB 80286-1-N	10 MHz	P-LCC-68	Q67120-C269	10			
SAB 80286-12-N	12,5 MHz	P-LCC-68	Q67120-C381	10			

### 32-Bit RISC Mikroprozessoren

#### 32-Bit RISC Microprocessors

● SAB-R 3000A-25-AE	25 MHz	C-PGA-175	Q67120-C590	1			
● SAB-R 3000A-33-AE	33 MHz	C-PGA-175	Q67120-C498	1			

### 32/64-Bit Gleitkomma-Kopprozessoren

#### 32/64-Bit Floating-Point Accelerators

● SAB-R 3010A-25-A	25 MHz	C-PGA-84	Q67120-C593	1			
● SAB-R 3010A-33-A	33 MHz	C-PGA-84	Q67120-C499	1			

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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# Mikrocomputer-Bausteine Microcomputer Components

## Support-Bausteine Support Components

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 999

### Treiberbaustein

#### Driver Chip

SAB 8282A-P	8-bit, invertierend	P-DIP-20	Q67020-Y149	20			
SAB 8283A-P	8-bit, inverted	P-DIP-20	Q67020-Y150	20			

### Taktgenerator

#### Clock Generator

SAB 8284B-P	8 MHz	P-DIP-18	Q67020-Y151	20			
SAB 8284B-1-P	10 MHz	P-DIP-18	Q67020-Y152	20			
SAB 82284-P	8 MHz	P-DIP-18	Q67020-Y162	10			
SAB 82284-1-P	10 MHz	P-DIP-18	Q67020-Y167	10			

### Bus-Treiber

#### Bus Driver

SAB 8286A-P	8-bit, invertierend	P-DIP-20	Q67020-Y153	20			
SAB 8287A-P	8-bit, inverted	P-DIP-20	Q67020-Y154	20			

### Bus-Steuerung

#### Bus Controller

SAB 8288A-P	10 MHz	P-DIP-20	Q67020-Y155	20			
SAB 82288-P	8 MHz	P-DIP-20	Q67120-Y75	10			
SAB 82288-1-P	10 MHz	P-DIP-20	Q67120-Y69	10			

### Bus-Arbiter

#### Bus Arbiter

SAB 8289-P	8 MHz	P-DIP-20	Q67020-Y74	10			
SAB 8289-1-P	10 MHz	P-DIP-20	Q67020-Y85	5			
SAB 82289-P	8 MHz	P-DIP-20	Q67120-Y77	1			

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

# Mikrocomputer-Bausteine Microcomputer Components

## System-Bausteine System Components

Typ Type	Takt Clock	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 999

### Floppy-Disk-Steuerung Floppy Disc Controller

SAB 2793B-P	Singlesided	P-DIP-40	Q67120-Y82				
SAB 2797B-P	Doublesided	P-DIP-40	Q67120-Y84				

### Statisches RAM, mit E/A und Progr. Zeitgeber Static RAM, with I/O and Progr. Timer

SAB 8155-P	256 × 8-bit	P-DIP-40	Q67120-Q42				
SAB 8155-2-P	256 × 8-bit	P-DIP-40	Q67120-Q86				

### Progr. Multifunktions-Steuerung (MUART) Progr. Multifunction Controller (MUART)

SAB 8256A-P	3 MHz	P-DIP-40	Q67120-Y43				
SAB 8256A-2-P	5 MHz	P-DIP-40	Q67120-Y59				

### DMA-Steuerung DMA Controller

▼ SAB 82C257A-1-N	10 MHz, CMOS	P-LCC-68	Q67120-P311				
SAB 82258A-A	8 MHz	C-PGA-68	Q67120-P248				
SAB 82258A-N	8 MHz	P-LCC-68	Q67120-P246				
SAB 82258A-R	8 MHz	C-CC-68	Q67120-P250				
SAB 82258A-1-A	10 MHz	C-PGA-68	Q67120-P247				
SAB 82258A-1-N	10 MHz	P-LCC-68	Q67120-P245				
SAB 82258A-1-R	10 MHz	C-CC-68	Q67120-P249				
▼ SAB 82C258A-1-N	10 MHz, CMOS	P-LCC-68	Q67120-P312				
▼ SAB 82C258A-12-N	12,5 MHz, CMOS	P-LCC-68	Q67120-P313				
▼ SAB 82C258A-16-N	16 MHz, CMOS	P-LCC-68	Q67120-P314				
▼ SAB 82C258A-20-N	20 MHz, CMOS	P-LCC-68	Q67120-P323				
SAB 8237A-5-P	5 MHz	P-DIP-40	Q67120-Y72				
SAB 82257-N	8 MHz	P-LCC-68	Q67120-P176				

### Serielle Steuerung Serial Controller

SAB 7201A-P	–	P-DIP-40	Q67120-P143				
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■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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# Mikrocomputer-Bausteine

## Microcomputer Components

### System-Bausteine (Fortsetzung)

### System Components (cont'd)

Typ Type	Funktion Function	Gehäuse Package	Bestellnummer Ordering Code	Stck. Pcs.			
					min. bis/to 24	25 bis/to 99	100 bis/to 999
<b>Token Bus Modem</b>							
▼ SAB 82511-1-NE	10 Mbit/s	P-LCC-68	Q67020-P58	1			
SAB 82511-5-NE	5 Mbit/s	P-LCC-68	Q67020-P57	1			
<b>Universelle System-Schnittstellen-Steuerung (USIC)</b>							
<b>Universal System Interface Controller (USIC)</b>							
▼ SAB 82556-N	–	P-LCC-68	Q67120-P287	1			
<b>Unterbrechungs-Steuerung</b>							
<b>Interrupt Controller</b>							
SAB 8259A-P	5 MHz	P-DIP-28	Q67120-P46	20			
SAB 8259A-2-P	8 MHz	P-DIP-28	Q67120-P81	20			

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«

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**Semicustom-Schaltungen**

**Semicustom ICs**

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# Semicustom-Schaltungen

## Semicustom ICs

### Gate Arrays

Typ Type	Funktion Function	Gehäuse Package <sup>1)</sup>	Bestellnummer Ordering Code	Stck. Pcs.		
					min. bis/to 24	25 bis/to 99
			Q67000-			
SH 133 C01	D-Flipflop-1 GHz	C-QFP-24	-H7036	1		
SH 133 C0 116	D-Flipflop-1 GHz	C-DIP-16	-H2878	1		
SH 133 C0 116-SO	D-Flipflop-1 GHz	P-DSO-14	-H3070	1		
■ S360 B 110	Zähler Counter	P-DIP-40	-H7508	1		
■ S360 B 114	Zähler Counter	P-DIP-28	-Y555-V702	1		

■ = SMD (Surface Mounted Device)

Gehäuse siehe Kapitel »Gehäusebauformen für ICs«

For the package refer to Chapter »Package Outlines for ICs«





**Symbole und Begriffe**  
**Symbols and Terms**

<b>Symbol</b>	<b>Bezeichnung</b>	<b>Designation</b>
$C_T$	Diodenkapazität	Diode capacitance
$F$	Rauschzahl	Noise figure
$f$	Frequenz	Frequency
$f_T$	Transitfrequenz	Transition frequency
$G$	Leistungsverstärkung	Power gain
$h_{FE}$	Strom-Verstärkung	Current gain
$I_C$	Kollektorstrom	Collector current
$I_D$	Drain-Gleichstrom	Continuous drain current
$I_F$	Durchlaßstrom	Forward current
$R_F$	Flußwiderstand	Forward resistance
$V_F$	Durchlaßspannung	Forward voltage
$V_S$	Versorgungsspannung	Supply voltage
$V_{DS}$	Drain-Source-Spannung	Drain-source voltage
$V_R$	Sperrspannung	Reverse voltage
$V_{(BR)}$	Durchbruchspannung	Breakdown voltage
$V_{CB0}$	Kollektor-Basis-Sperrspannung	Collector-base reverse voltage
$V_{CE0}$	Kollektor-Emitter-Sperrspannung	Collector-emitter reverse voltage

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Dioden AF Diodes

Typ Type	$V_R$	$V_F$	$I_F$	Anschluß Terminal	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999
	V	V	mA				Min.				

### Schaltdioden im SOT-23-Gehäuse (8-mm-Gurt)

#### Switching Diodes in SOT-23 Package (8-mm Type)

						Q62702-					
BAL 74	50	$\leq 1,0$	250	1	1	-A718	500				
BAR 74	50	$\leq 1,0$	250	2	1	-A704	500				
☉BAS 16	75	$\leq 1,25$	250	2	1	-A739	500				
BAS 19	100	$\leq 1,0$	200	2	1	-A95	500				
BAS 20	200	$\leq 1,0$	200	2	1	-A113	500				
BAS 21	250	$\leq 1,0$	200	2	1	-A79	500				
						Q68000-					
☉BAV 70	70	$\leq 1,25$	250	3	1	-A6622	500				
☉BAV 99	70	$\leq 1,25$	250	5	1	-A549	500				
						Q62702-					
☉BAW 56	70	$\leq 1,25$	250	4	1	-A688	500				

### Schaltdioden im SOT-143-Gehäuse (8-mm-Gurt)

#### Switching Diodes in SOT-143 Package (8-mm Tape)

						Q62702-					
BAS 28	75	$\leq 1,25$	250	1	2	-A77	100				
BAW 101	300	$\leq 1,3$	200	1	2	-A712	100				

Typ Type	$V_R$	$V_F$	$I_F$	Anschluß Terminal	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999
	V	V	mA				Min.				

### Schaltdioden im SOT-223-Gehäuse (12-mm-Gurt)

#### Switching Diodes in SOT-223 Package (12-mm Tape)

						Q62702-					
BAS 78 A	50	$\leq 1,6$	1000	1	3	-A0910	25				
BAS 78 B	100	$\leq 1,6$	1000	1	3	-A0911	25				
BAS 78 C	200	$\leq 1,6$	1000	1	3	-A0912	25				
BAS 78 D	400	$\leq 1,6$	1000	1	3	-A0913	25				
BAS 79 A	50	$\leq 1,6$	1000	2	3	-A0914	25				
BAS 79 B	100	$\leq 1,6$	1000	2	3	-A0915	25				
BAS 79 C	200	$\leq 1,6$	1000	2	3	-A0916	25				
BAS 79 D	400	$\leq 1,6$	1000	2	3	-A0917	25				

☉ = SMD (Surface Mounted Device)

For package outlines please refer to the following pages.

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Dioden AF Diodes

Typ Type	$V_{(BR)}$	$V_F$	$I_F$	Anschluß Terminal	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
	V	mV	mA					Min.	min. bis/to 99	100 bis/to 499	500 bis/to 999

### Schottky-Dioden im SOT-23-Gehäuse (8-mm-Gurt)

### Schottky Diodes in SOT-23 Package (8-mm Type)

☒ BAS 40	40	500	100	2	1	Q62702- -D339	50				
☒ BAS 40-04	40	500	100	5	1	-D980	50				
☒ BAS 40-05	40	500	100	3	1	-D979	50				
☒ BAS 40-06	40	500	100	4	1	-D978	50				
☒ BAS 70	70	750	50	2	1	-A118	50				
☒ BAS 70-04	70	750	50	5	1	-A730	50				
☒ BAS 70-05	70	750	50	3	1	-A711	50				
☒ BAS 70-06	70	750	50	4	1	-A774	50				
BAT 64	30	440	200	2	1	-A879	100				
BAT 64-04	30	440	230	5	1	-A961	50				
BAT 64-05	30	440	230	3	1	-A962	50				
BAT 64-06	30	440	230	4	1	-A963	50				

### Schottky-Dioden im SOT-143-Gehäuse (8-mm-Gurt)

### Schottky Diodes in SOT-143 Package (8-mm Tape)

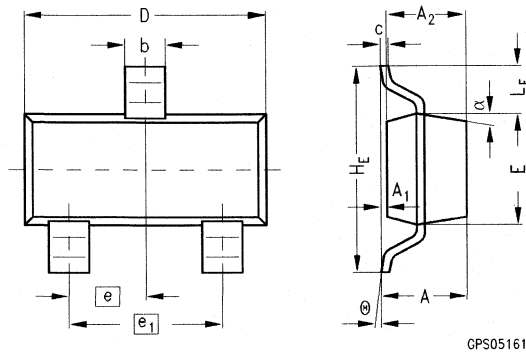
BAS 40-07	40	500	100	1	2	Q62702- -A697	25				
BAS 70-07	70	750	50	1	2	-A846	25				
BAT 64-07	30	440	230	1	2	-A964	50				

☒ = SMD (Surface Mounted Device)

For package outlines please refer to the following pages.

SOT-23

Bild/Figure 1

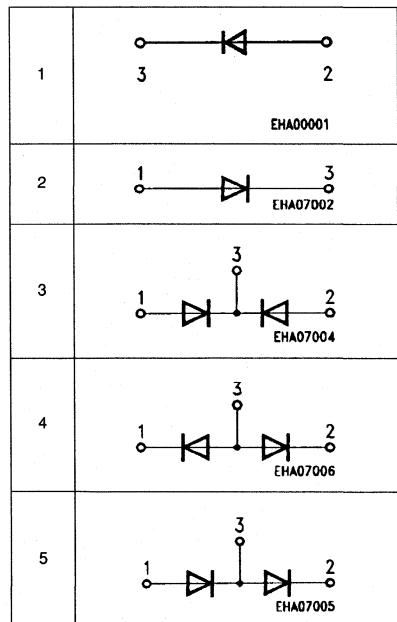


GPS05161

Anschluß/Terminal

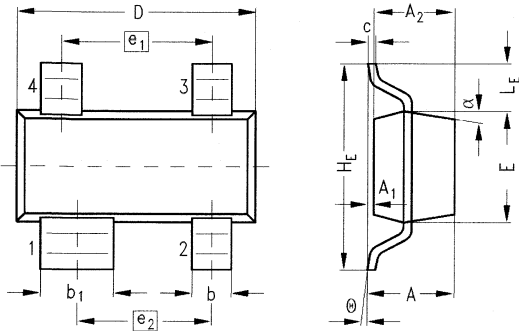
Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.1	-	-
A <sub>1</sub>	-	-	0.1	-	-
A <sub>2</sub>	-	-	1.0	-	-
b	0.35	-	0.50	-	-
c	0.08	-	0.15	-	-
D	2.8	-	3.0	-	-
E	1.2	-	1.4	-	-
e	-	0.95	-	-	-
e <sub>1</sub>	-	1.9	-	-	-
H <sub>E</sub>	-	-	2.6	-	-
L <sub>E</sub>	0.6	-	-	-	-
α	-	-	-	max. 10°	1
θ	-	-	-	2 ... 30°	-

Note: 1) Applicable to all sides



SOT-143

Bild/Figure 2

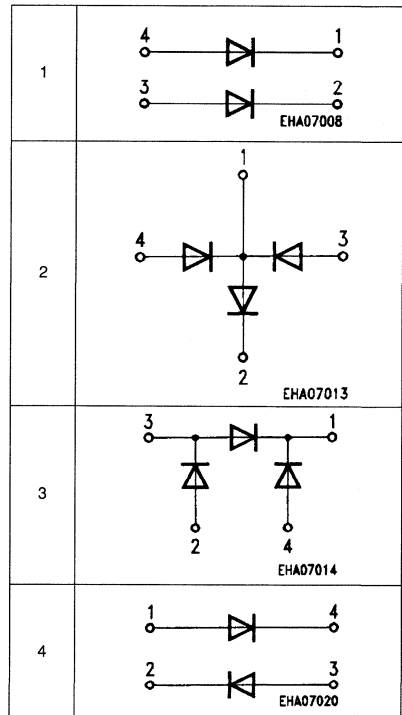


GPS05178

Anschluß/Terminal

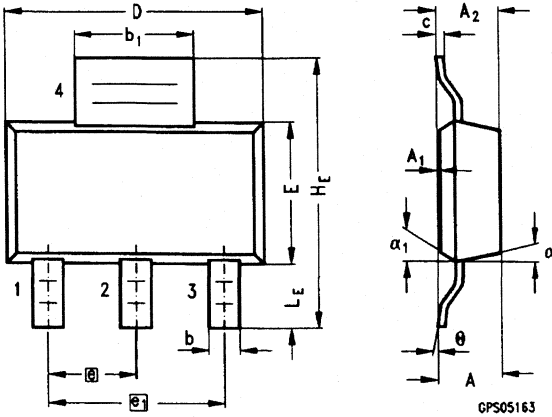
Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.1	-	-
A <sub>1</sub>	-	-	0.1	-	-
A <sub>2</sub>	-	-	1.0	-	-
b	0.35	0.4	0.50	-	-
b <sub>1</sub>	0.75	0.8	0.90	-	-
c	0.08	-	0.15	-	-
D	2.8	-	3.0	-	-
E	1.2	-	1.4	-	-
e <sub>1</sub>	-	1.9	-	-	-
e <sub>2</sub>	-	1.7	-	-	-
H <sub>E</sub>	-	-	2.6	-	-
L <sub>E</sub>	0.6	-	-	-	-
α	-	-	-	max. 10°	1
θ	-	-	-	2 ... 30°	-

Note: 1) Applicable to all sides



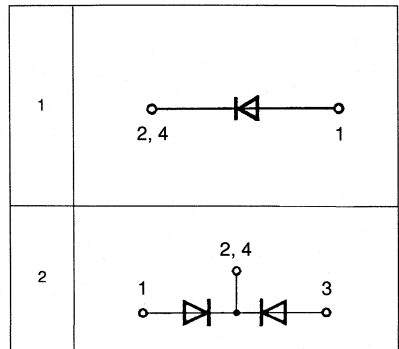
SOT-223

Bild/Figure 3



Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.7	-	-
A <sub>1</sub>	0.02	-	0.1	-	-
A <sub>2</sub>	-	-	1.6	-	-
b	0.60	-	0.80	-	-
b <sub>1</sub>	2.9	-	3.1	-	-
C	0.24	-	0.32	-	-
D	6.3	-	6.7	-	-
E	3.3	-	3.7	-	-
e	-	2.3	-	-	-
e <sub>1</sub>	-	4.6	-	-	-
H <sub>E</sub>	6.7	-	7.3	-	-
L <sub>E</sub>	-	1.7	-	-	-
α	-	-	-	max. 16°	1
α <sub>1</sub>	-	-	-	13°	2
θ	-	-	-	10°	-

Anschluß/Terminal



Notes: 1) Applicable to case top  
2) Applicable to case bottom

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$	$I_C$	$f_T$	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
	V	mA	MHz	Min.					min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

### NPN-Transistoren im TO-92-Gehäuse NPN Transistors in TO-92 Package

BC 167 A	45	100	200	≤ 220	1	7	Q62702- -C74	250				
BC 167 B	45	100	200	≤ 460	1	7	-C75	250				
BC 237 A	45	100	200	≤ 220	1	6	-C276	250				
BC 237 B	45	100	200	≤ 460	1	6	-C277	250				
BC 238 B	20	100	200	≤ 460	1	6	-C279	250				
BC 238 C	20	100	200	≤ 800	1	6	-C280	250				
BC 239 C	20	50	200	≤ 800	1	6	-C282	250				
BC 337-16	45	800	150	≤ 250	1	6	-C313-V3	250				
BC 337-25	45	800	150	≤ 400	1	6	-C313-V1	250				
BC 337-40	45	800	150	≤ 630	1	6	-C313-V2	250				
BC 338-25	25	800	150	≤ 400	1	6	-C314-V2	250				
BC 338-40	25	800	150	≤ 630	1	6	-C314-V3	250				
BC 368	20	1000	100	≤ 375	2	6	-C747	100				
BC 414 C	45	100	200	≤ 800	1	6	-C376-V2	250				
BC 546 B	65	100	200	≤ 450	1	6	-C687-V2	250				
BC 547 B	45	100	200	≤ 450	1	6	-C688-V2	250				
BC 548 B	30	100	200	≤ 450	1	6	-C689-V2	250				
BC 548 C	30	100	200	≤ 800	1	6	-C689-V3	250				
BC 549 C	30	100	200	≤ 800	1	6	-C690-V2	250				
BC 550 C	45	100	200	≤ 800	1	6	-C691-V2	250				
							Q68000-					
BC 635	45	1000	70	≤ 250	2	6	-A3360	200				
BC 637	60	1000	70	≤ 160	2	6	-A2285	200				
BC 639	80	1000	70	≤ 160	2	6	-A3361	200				

1) Anschluß/Terminal  
For package outlines please refer to the following pages.



# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$ V	$I_C$ mA	$f_T$ MHz	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
									min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

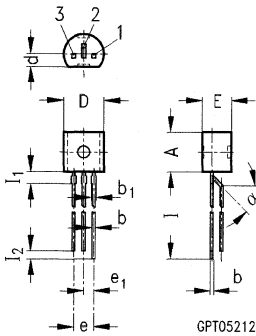
### PNP-Transistoren im TO-92-Gehäuse PNP Transistors in TO-92 Package

Typ	$V_{CE0}$	$I_C$	$f_T$	$h_{FE}$	1)	Bild	Bestellnummer	Stck.				
Type	V	mA	MHz			Fig.	Ordering Code	Pcs.	min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999
BC 257 A	45	100	200	$\leq 220$	1	7	Q62702- -C184	250				
BC 257 B	45	100	200	$\leq 460$	1	7	-C206	250				
BC 307 A	45	100	200	$\leq 220$	1	6	-C283	250				
BC 307 B	45	100	200	$\leq 460$	1	6	-C324	250				
BC 308 B	25	100	200	$\leq 460$	1	6	-C286	250				
BC 308 C	25	100	200	$\leq 800$	1	6	-C393	250				
BC 327-16	45	800	150	$\leq 250$	1	6	-C311-V3	250				
BC 327-25	45	800	150	$\leq 400$	1	6	-C311-V4	250				
BC 327-40	45	800	150	$\leq 630$	1	6	-C311-V2	250				
BC 328-25	25	800	150	$\leq 400$	1	6	-C312-V4	250				
BC 328-40	25	800	150	$\leq 630$	1	6	-C312-V2	250				
BC 369	20	1000	1000	$\leq 375$	2	6	-C748	100				
BC 415 C	35	100	200	$\leq 800$	1	6	-C377-V3	250				
BC 416 C	45	100	200	$\leq 800$	1	6	-C378-V3	250				
BC 556 B	65	100	200	$\leq 450$	1	6	-C692-V2	250				
BC 557 B	45	100	200	$\leq 450$	1	6	-C693-V2	250				
BC 558 B	30	100	200	$\leq 450$	1	6	-C694-V2	250				
BC 558 C	30	100	200	$\leq 800$	1	6	-C694-V3	250				
BC 559 C	30	100	200	$\leq 800$	1	6	-C695-V3	250				
BC 560 B	30	100	200	$\leq 450$	1	6	-C696-V2	250				
BC 560 C	45	100	200	$\leq 800$	1	6	-C696-V3	250				
							Q68000-					
BC 636	45	1000	125	$\leq 250$	2	6	-A3365	200				
BC 638	60	1000	125	$\leq 160$	2	6	-A3366	200				
BC 640	80	1000	125	$\leq 160$	2	6	-A3367	200				

1) Anschluß/Terminal  
For package outlines please refer to the following pages.

**TO-92 Off-set**

**Bild/Figure 6**



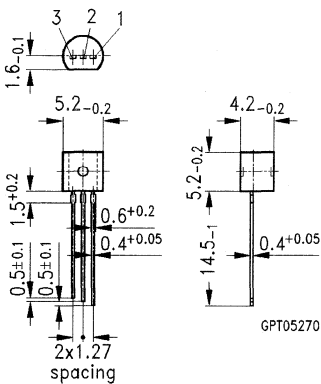
Dim.	Millimeters			Gradient
	min.	typ.	max.	
A	5.0	5.2	—	—
b	—	0.4	0.45	—
b <sub>1</sub>	—	0.6	0.62	—
E	4.0	4.2	—	—
e	—	2.54	—	—
e <sub>1</sub>	—	1.27	—	—
D	5.0	5.2	—	—
d	1.5	1.6	—	—
I	13.5	14.5	—	—
I <sub>1</sub>	—	1.5	1.7	—
I <sub>2</sub>	0.9	1.0	1.1	—
α	—	—	—	45°

**Anschluß/Terminal**

Pin	1	2	3
1	C	B	E
2	E	C	B

**TO-92 In-line**

**Bild/Figure 7**



**Anschluß/Terminal**

Pin	1	2	3
1	E	C	B

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$ V	$I_C$ mA	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stk. Pcs. Min.				
								min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

### NPN-Transistoren im SOT-23-Gehäuse (8-mm-Gurt)

### NPN Transistors in SOT-23 Package (8-mm Tape)

Typ	$V_{CE0}$	$I_C$	$h_{FE}$	1)	Bild	Bestellnummer	Stk.						
Type	V	mA			Fig.	Ordering Code	Pcs.	min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999		
BC 817-16	45	500	100 ... 250	6	1	Q62702- -C1732	500						
BC 817-25	45	500	160 ... 400	6	1	-C1690	500						
BC 817-40	45	500	250 ... 630	6	1	-C1738	500						
BC 818-16	25	500	100 ... 250	6	1	-C1739	500						
BC 818-25	25	500	160 ... 400	6	1	-C1740	500						
BC 818-40	25	500	250 ... 630	6	1	-C1505	500						
BC 846 A	65	100	110 ... 220	6	1	-C1772	500						
BC 846 B	65	100	200 ... 450	6	1	-C1746	500						
BC 847 A	45	100	110 ... 220	6	1	-C1884	500						
BC 847 B	45	100	200 ... 450	6	1	-C1687	500						
BC 847 C	45	100	420 ... 800	6	1	-C1715	500						
BC 848 A	30	100	110 ... 220	6	1	-C1741	500						
BC 848 B	30	100	200 ... 450	6	1	-C1704	500						
BC 848 C	30	100	420 ... 800	6	1	-C1506	500						
☉ BCW 60A	32	100	120 ... 220	6	1	-C1517	500						
☉ BCW 60B	32	100	180 ... 310	6	1	-C1497	500						
☉ BCW 60C	32	100	250 ... 460	6	1	-C1476	500						
☉ BCW 60D	32	100	380 ... 630	6	1	-C1477	500						
☉ BCW 65A	32	800	100 ... 250	6	1	-C1516	500						
☉ BCW 65B	32	800	160 ... 400	6	1	-C1612	500						
☉ BCW 65C	32	800	250 ... 630	6	1	-C1479	500						
☉ BCW 66F	45	800	100 ... 250	6	1	-C1892	500						
☉ BCW 66G	45	800	160 ... 400	6	1	-C1526	500						
☉ BCW 66H	45	800	250 ... 630	6	1	-C1632	500						
☉ BCX 41	125	800	> 40	6	1	-C1659	100						
☉ BCX 70G	45	100	120 ... 220	6	1	-C1539	500						
☉ BCX 70H	45	100	180 ... 310	6	1	-C1481	500						
☉ BCX 70J	45	100	250 ... 460	6	1	-C1552	500						
☉ BCX 70K	45	100	380 ... 630	6	1	-C1571	500						

☉ = SMD (Surface Mounted Device)

1) Anschluß/Terminal

For package outlines please refer to the following pages.

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$	$I_C$	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
	V	mA	Min.					min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

### NPN-Transistoren im SOT-89-Gehäuse (12-mm-Gurt)

### NPN Transistors in SOT-89 Package (12-mm Tape)

						Q62702-				
BCX 54	45	1000	40 ... 250	1	4	-C1745	100			
BCX 55	60	1000	40 ... 250	1	4	-C1729	100			
BCX 56	80	1000	40 ... 250	1	4	-C1614	100			
BCX 68	20	1000	63 ... 400	1	4	-C1572	100			

### PNP-Transistoren im SOT-23-Gehäuse (8-mm-Gurt)

### PNP Transistors in SOT-23 Package (8-mm Tape)

						Q62702				
BC 807-16	45	500	100 ... 250	6	1	-C1735	500			
BC 807-25	45	500	160 ... 400	6	1	-C1689	500			
BC 807-40	45	500	250 ... 630	6	1	-C1721	500			
BC 808-16	25	500	100 ... 250	6	1	-C1736	500			
BC 808-25	25	500	160 ... 400	6	1	-C1504	500			
BC 808-40	25	500	250 ... 630	6	1	-C1692	500			
BC 856 A	65	100	125 ... 250	6	1	-C1773	500			
BC 856 B	65	100	220 ... 475	6	1	-C1886	500			
BC 857 A	45	100	125 ... 250	6	1	-C1850	500			
BC 857 B	45	100	220 ... 475	6	1	-C1688	500			
BC 857 C	45	100	420 ... 800	6	1	-C1851	500			
BC 858 A	30	100	125 ... 250	6	1	-C1742	500			
BC 858 B	30	100	220 ... 475	6	1	-C1698	500			
BC 858 C	30	100	420 ... 800	6	1	-C1507	500			
BCW 61A	32	100	120 ... 220	6	1	-C452	500			
BCW 61B	32	100	180 ... 310	6	1	-C1585	500			
BCW 61C	32	100	250 ... 460	6	1	-C1478	500			
BCW 61D	32	100	380 ... 630	6	1	-C1556	500			

■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal  
For package outlines please refer to the following pages.

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$ V	$I_C$ mA	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

### PNP-Transistoren im SOT-23-Gehäuse (8-mm-Gurt)

### PNP Transistors in SOT-23 Package (8-mm Tape)

BCW 67A	32	800	100 ... 250	6	1	Q62702- -C1560	500			
BCW 67B	32	800	160 ... 400	6	1	-C1480	500			
BCW 67C	32	800	250 ... 630	6	1	-C1681	500			
BCW 68F	45	800	100 ... 250	6	1	-C1893	500			
BCW 68G	45	800	160 ... 400	6	1	-C1322	500			
BCW 68H	45	800	250 ... 630	6	1	-C1555	500			
BCX 42	125	800	> 40		1	-C1485	100			
BCX 71G	45	100	120 ... 220	6	1	-C1482	500			
BCX 71H	45	100	180 ... 310	6	1	-C1586	500			
BCX 71J	45	100	250 ... 460	6	1	-C1554	500			
BCX 71K	45	100	380 ... 630	6	1	-C1654	500			

### PNP-Transistoren im SOT-89-Gehäuse (12-mm-Gurt)

### PNP Transistors in SOT-89 Package (12-mm Tape)

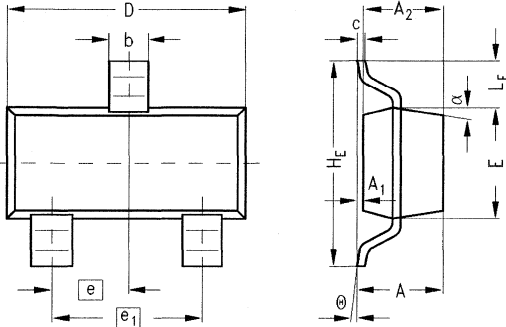
BCX 51	45	1000	40 ... 250	1	4	Q62702- -C1847	100			
BCX 52	60	1000	40 ... 250	1	4	-C1743	100			
BCX 53	80	1000	40 ... 250	1	4	-C905	100			
BCX 69	20	1000	63 ... 400	1	4	-C1714	100			

■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal  
For package outlines please refer to the following pages.

SOT-23

Bild/Figure 1



GPS05161

Anschluß/Terminal

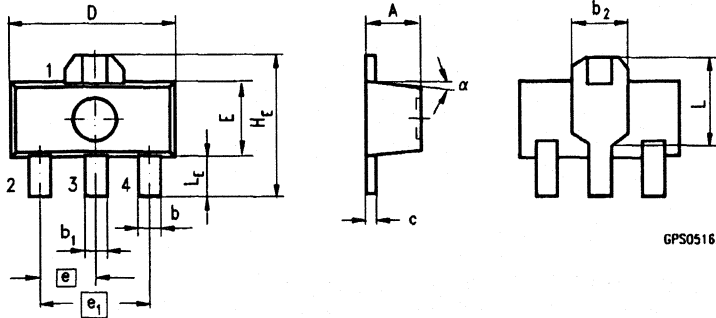
Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	–	–	1.1	–	–
A <sub>1</sub>	–	–	0.1	–	–
A <sub>2</sub>	–	–	1.0	–	–
b	0.35	–	0.50	–	–
c	0.08	–	0.15	–	–
D	2.8	–	3.0	–	–
E	1.2	–	1.4	–	–
e	–	0.95	–	–	–
e <sub>1</sub>	–	1.9	–	–	–
H <sub>E</sub>	–	–	2.6	–	–
L <sub>E</sub>	0.6	–	–	–	–
$\alpha$	–	–	–	max. 10°	1
$\Theta$	–	–	–	2 ... 30°	–

Note: 1) Applicable to all sides

Pin	1	2	3
6	B	E	C

SOT-89

Bild/Figure 4



GPS05162

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	—	1.5	—	—	—
b	—	—	0.65	—	—
b <sub>1</sub>	—	—	0.65	—	—
b <sub>2</sub>	—	1.6	—	—	—
c	0.25	—	—	—	—
D	—	4.5	—	—	—
E	—	—	2.6	—	—
e	—	1.5	—	—	—
e <sub>1</sub>	—	3	—	—	—
H <sub>E</sub>	—	—	4.25	—	—
L	2.6	—	2.85	—	—
L <sub>E</sub>	0.8	—	1.2	—	—
α	—	—	—	max. 10°	1

Note: 1) Applicable to all sides

Anschluß/Terminal

Pin	1	2	3
1	B	C	E

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{ce0}$ V	$I_c$ A	$f_T$ MHz	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
									min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999
								Min.				

### NPN-Transistoren im SOT-223-Gehäuse (12-mm-Gurt)

### NPN Transistors in SOT-223 Package (12-mm Tape)

☐ BCP 54	45	1	125	40 ... 250	3	3	Q62702- -C2117	25					
☐ BCP 54-10	45	1	125	63 ... 160	3	3	-C2119	25					
☐ BCP 54-16	45	1	125	100 ... 250	3	3	-C2120	25					
☐ BCP 55	60	1	125	40 ... 250	3	3	-C2148	25					
☐ BCP 55-10	60	1	125	63 ... 160	3	3	-C2122	25					
☐ BCP 55-16	60	1	125	100 ... 250	3	3	-C2123	25					
☐ BCP 56	100	1	125	40 ... 250	3	3	-C2149	25					
☐ BCP 56-10	100	1	125	63 ... 160	3	3	-C2125	25					
☐ BCP 56-16	100	1	125	100 ... 250	3	3	-C2106	25					
☐ BCP 68	25	1	100	63 ... 400	3	3	-C2126	100					

### PNP-Transistoren im SOT-223-Gehäuse (12-mm-Gurt)

### PNP Transistors in SOT-223 Package (12-mm Tape)

☐ BCP 51	45	1	125	40 ... 250	3	3	Q62702- -C2107	25					
☐ BCP 51-10	45	1	125	63 ... 160	3	3	-C2109	25					
☐ BCP 51-16	45	1	125	100 ... 250	3	3	-C2110	25					
☐ BCP 52	60	1	125	40 ... 250	3	3	-C2146	25					
☐ BCP 52-10	60	1	125	63 ... 160	3	3	-C2112	25					
☐ BCP 52-16	60	1	125	100 ... 250	3	3	-C2113	25					
☐ BCP 53	100	1	125	40 ... 250	3	3	-C2147	25					
☐ BCP 53-10	100	1	125	63 ... 160	3	3	-C2115	25					
☐ BCP 53-16	100	1	125	100 ... 250	3	3	-C2116	25					
☐ BCP 69	25	1	100	63 ... 400	3	3	-C2130	100					

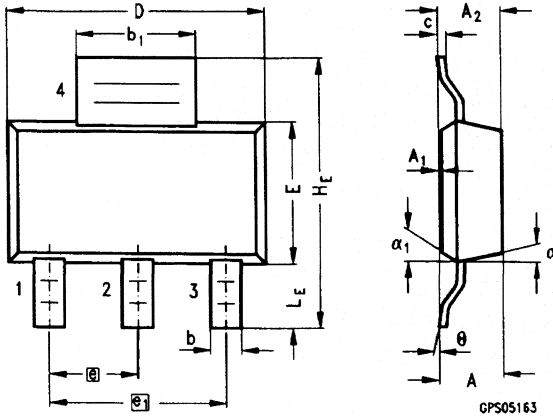
☐ = SMD (Surface Mounted Device)

1) Anschluß/Terminal



SOT-223

Bild/Figure 3



Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	–	–	1.7	–	–
A <sub>1</sub>	0.02	–	0.1	–	–
A <sub>2</sub>	–	–	1.6	–	–
b	0.60	–	0.80	–	–
b <sub>1</sub>	2.9	–	3.1	–	–
C	0.24	–	0.32	–	–
D	6.3	–	6.7	–	–
E	3.3	–	3.7	–	–
e	–	2.3	–	–	–
e <sub>1</sub>	–	4.6	–	–	–
H <sub>E</sub>	6.7	–	7.3	–	–
L <sub>E</sub>	–	1.7	–	–	–
α	–	–	–	max. 16°	1
α <sub>1</sub>	–	–	–	13°	2
θ	–	–	–	10°	–

Notes: 1) Applicable to case top  
2) Applicable to case bottom

Anschluss/Terminal

Pin	1	2	3	4
3	B	C	E	C

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{ce0}$ V	$I_c$ mA	$f_T$ MHz	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
									min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

### NPN-Darlington-Transistoren im TO-92-Gehäuse

#### NPN Darlington Transistors in TO-92 Package

							Q62702-				
BC 517	30	400	150	> 30000	1	6	-C825	250			
BC 875	45	1000	150	> 2000	2	6	-C853	100			
BC 877	60	1000	150	> 2000	2	6	-C854	100			
BC 879	80	1000	150	> 2000	2	6	-C855	100			

### PNP-Darlington-Transistoren im TO-92-Gehäuse

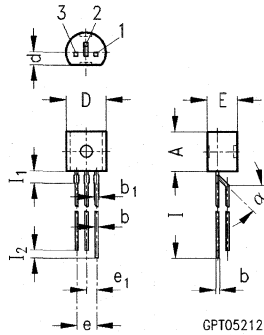
#### PNP Darlington Transistors in TO-92 Package

							Q62702-				
BC 516	30	400	150	> 30000	1	6	-C944	250			
BC 876	45	1000	150	> 2000	2	6	-C943	100			
BC 878	60	1000	150	> 2000	2	6	-C942	100			
BC 880	80	1000	150	> 2000	2	6	-C941	100			

1) Anschluß/Terminal

TO-92 Off-set

Bild/Figure 6



Dim.	Millimeters			Gradient
	min.	typ.	max.	
A	5.0	5.2	–	–
b	–	0.4	0.45	–
b <sub>1</sub>	–	0.6	0.62	–
E	4.0	4.2	–	–
e	–	2.54	–	–
e <sub>1</sub>	–	1.27	–	–
D	5.0	5.2	–	–
d	1.5	1.6	–	–
l	13.5	14.5	–	–
l <sub>1</sub>	–	1.5	1.7	–
l <sub>2</sub>	0.9	1.0	1.1	–
α	–	–	–	45°

Anschluß/Terminal

Pin	1	2	3
1	C	B	E
2	E	C	B

7

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$ V	$I_C$ mA	$f_T$ MHz	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
									min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

### NPN-Darlington-Transistoren im SOT-23-Gehäuse (8-mm-Gurt)

### NPN Darlington Transistors in SOT-23 Package (8-mm Tape)

BCV 27	30	500	170	$\geq 20000$	6	1	Q62702- -C1474	200				
BCV 47	80	500	170	$\geq 10000$	6	1	-C1501	200				

### PNP-Darlington-Transistoren im SOT-23-Gehäuse (8-mm-Gurt)

### PNP Darlington Transistors in SOT-23 Package (8-mm Tape)

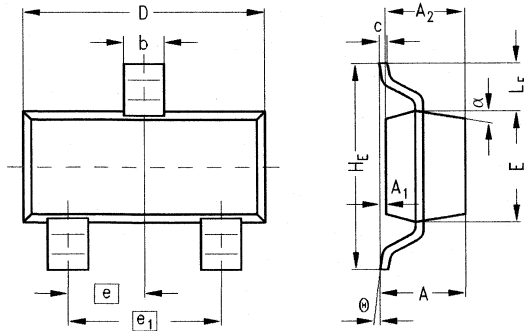
BCV 26	30	500	200	$\geq 20000$	6	1	Q62702- -C1493	200				
BCV 46	60	500	170	$\geq 10000$	6	1	-C1501	200				

■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal

**SOT-23**

**Bild/Figure 1**



GPS05161

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.1	-	-
A <sub>1</sub>	-	-	0.1	-	-
A <sub>2</sub>	-	-	1.0	-	-
b	0.35	-	0.50	-	-
c	0.08	-	0.15	-	-
D	2.8	-	3.0	-	-
E	1.2	-	1.4	-	-
e	-	0.95	-	-	-
e <sub>1</sub>	-	1.9	-	-	-
H <sub>E</sub>	-	-	2.6	-	-
L <sub>E</sub>	0.6	-	-	-	-
$\alpha$	-	-	-	max. 10°	1
$\Theta$	-	-	-	2 ... 30°	-

Note: 1) Applicable to all sides

**Anschluß/Terminal**

Pin	1	2	3
6	B	E	C

7

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$	$I_C$	$f_T$	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
	V	mA	MHz	Min.					min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

### NPN-Darlington-Transistoren im SOT-89-Gehäuse (12-mm-Gurt)

### NPN Darlington Transistors in SOT-89 Package (12-mm Tape)

BCV 49	60	500	150	$\geq 10000$	1	4	Q62702- -C1832	100				
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### PNP-Darlington-Transistoren im SOT-89-Gehäuse (12-mm-Gurt)

### PNP Darlington Transistors in SOT-89 Package (12-mm Tape)

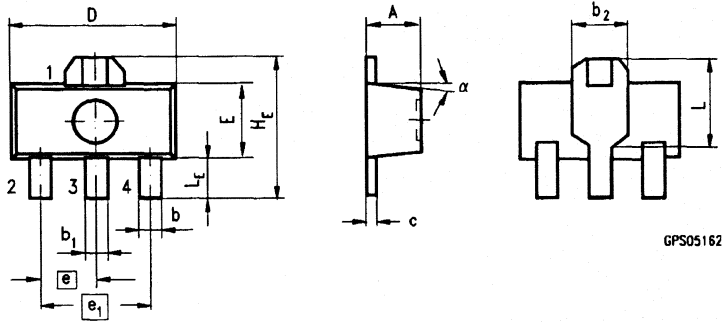
BCV 48	60	500	200	$\geq 10000$	1	4	Q62702- -C1854	100				
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■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal

SOT-89

Bild/Figure 4



Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	1.5	-	-	-
b	-	-	0.65	-	-
b <sub>1</sub>	-	-	0.65	-	-
b <sub>2</sub>	-	1.6	-	-	-
c	0.25	-	-	-	-
D	-	4.5	-	-	-
E	-	-	2.6	-	-
e	-	1.5	-	-	-
e <sub>1</sub>	-	3	-	-	-
H <sub>E</sub>	-	-	4.25	-	-
L	2.6	-	2.85	-	-
L <sub>E</sub>	0.8	-	1.2	-	-
α	-	-	-	max. 10°	1

Note: 1) Applicable to all sides

Anschluß/Terminal

Pin	1	2	3
1	B	C	E

7

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$	$I_c$	$f_T$	$h_{FE}$	1)	Bild Fig.	Bestellnumm er Ordering Code	Stck. Pcs.  Min.				
	V	mA	MHz	min. bis/to 99					100 bis/to 499	500 bis/to 999	1000 bis/to 2999	

### NPN-Darlington-Transistoren im SOT-223-Gehäuse (12-mm-Gurt) NPN Darlington Transistors in SOT-223 Package (12-mm Tape)

							Q62702-					
BCP 29	40	0,5	200	$\geq 20000$	3	3	-C2136	100				
BCP 49	80	0,5	200	$\geq 10000$	3	3	-C2137	25				
BSP 50	60	1,0	200	$\geq 2000$	3	3	-P1163	25				
BSP 51	80	1,0	200	$\geq 2000$	3	3	-P1164	25				
BSP 52	100	1,0	200	$\geq 2000$	3	3	-P1165	25				

### PNP-Darlington-Transistoren im SOT-223-Gehäuse (12-mm-Gurt) PNP Darlington Transistors in SOT-223 Package (12-mm Tape)

							Q62702-					
BCP 28	40	0,5	200	$\geq 20000$	3	3	-C2134	100				
BCP 48	80	0,5	200	$\geq 10000$	3	3	-C2135	25				
BSP 60	60	1,0	200	$\geq 2000$	3	3	-P1166	25				
BSP 61	80	1,0	200	$\geq 2000$	3	3	-P1167	25				
BSP 62	100	1,0	200	$\geq 2000$	3	3	-P1168	25				

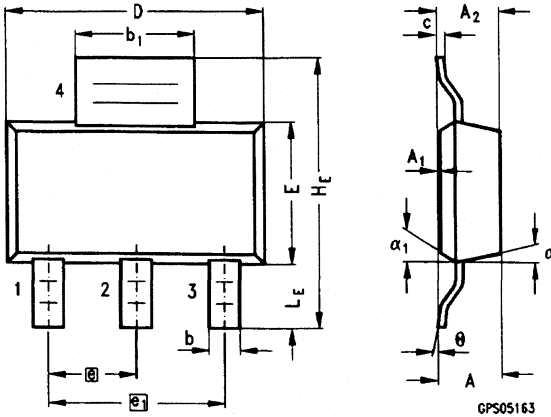
■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal



**SOT-223**

**Bild/Figure 3**



GPS05163

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	–	–	1.7	–	–
A <sub>1</sub>	0.02	–	0.1	–	–
A <sub>2</sub>	–	–	1.6	–	–
b	0.60	–	0.80	–	–
b <sub>1</sub>	2.9	–	3.1	–	–
C	0.24	–	0.32	–	–
D	6.3	–	6.7	–	–
E	3.3	–	3.7	–	–
e	–	2.3	–	–	–
e <sub>1</sub>	–	4.6	–	–	–
H <sub>E</sub>	6.7	–	7.3	–	–
L <sub>E</sub>	–	1.7	–	–	–
α	–	–	–	max. 16°	1
α <sub>1</sub>	–	–	–	13°	2
θ	–	–	–	10°	–

**Anschluß/Terminal**

Pin	1	2	3	4
3	B	C	E	C

Notes: 1) Applicable to case top  
 2) Applicable to case bottom

# Einzelhalbleiter Small-Signal Semiconductors

## NF-Transistoren AF Transistors

Typ Type	$V_{CE0}$ V	$I_C$ mA	$f_T$ MHz	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
									min. bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

### NPN-Hochvolt-Transistor im TO-92-Gehäuse NPN High Voltage Transistor in TO-92 Package

BFP 22	200	500	70	> 40	2	7	Q62702- -F621	100				
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### PNP-Hochvolt-Transistor im TO-92-Gehäuse PNP High Voltage Transistor in TO-92 Package

BFP 23	200	500	70	> 40	2	7	Q62702- -F622	100				
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### NPN-Hochvolt-Transistor im SOT-23-Gehäuse (8-mm-Gurt) NPN High Voltage Transistor in SOT-23 Package (8-mm Tape)

€ BFN 26	300	200	70	≥ 40	6	1	Q62702- -F976	100				
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### PNP-Hochvolt-Transistor im SOT-23-Gehäuse (8-mm-Gurt) PNP High Voltage Transistor in SOT-23 Package (8-mm Tape)

€ BFN 27	300	200	100	≥ 40	6	1	Q62702- -F977	100				
----------	-----	-----	-----	------	---	---	------------------	-----	--	--	--	--

Typ Type	$V_{CE0}$ V	$I_C$ mA	$f_T$ MHz	$h_{FE}$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
									min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

### NPN-Hochvolt-Transistor im SOT-89-Gehäuse (12-mm-Gurt) NPN High Voltage Transistor in SOT-89 Package (12-mm Tape)

BFN 16	250	200	70	≥ 40	1	4	Q62702- -F885	25				
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### PNP-Hochvolt-Transistor im SOT-89-Gehäuse (12-mm-Gurt) PNP High Voltage Transistor in SOT-89 Package (12-mm Tape)

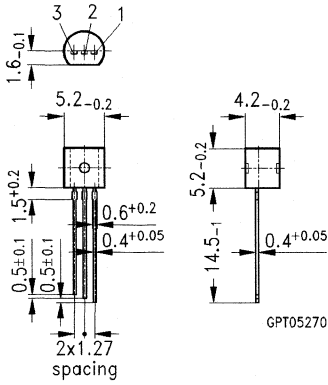
BFN 17	250	200	100	≥ 40	1	4	Q62702- -F884	25				
--------	-----	-----	-----	------	---	---	------------------	----	--	--	--	--

■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal  
For package outlines please refer to the following pages.

**TO-92 In-line**

**Bild/Figure 7**

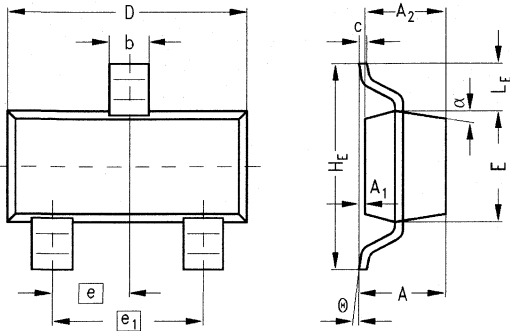


**Anschluß/Terminal**

Pin	1	2	3
2	E	B	C

SOT-23

Bild/Figure 1



GPS05161

Anschluß/Terminal

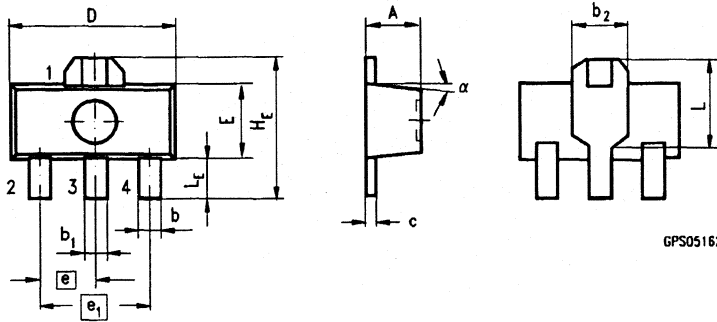
Pin	1	2	3
6	B	E	C

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.1	-	-
A <sub>1</sub>	-	-	0.1	-	-
A <sub>2</sub>	-	-	1.0	-	-
b	0.35	-	0.50	-	-
c	0.08	-	0.15	-	-
D	2.8	-	3.0	-	-
E	1.2	-	1.4	-	-
e	-	0.95	-	-	-
e <sub>1</sub>	-	1.9	-	-	-
H <sub>E</sub>	-	-	2.6	-	-
L <sub>E</sub>	0.6	-	-	-	-
α	-	-	-	max. 10°	1
ϑ	-	-	-	2 ... 30°	-

Note: 1) Applicable to all sides

SOT-89

Bild/Figure 4



GPS05162

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	—	1.5	—	—	—
b	—	—	0.65	—	—
b <sub>1</sub>	—	—	0.65	—	—
b <sub>2</sub>	—	1.6	—	—	—
c	0.25	—	—	—	—
D	—	4.5	—	—	—
E	—	—	2.6	—	—
e	—	1.5	—	—	—
e <sub>1</sub>	—	3	—	—	—
H <sub>E</sub>	—	—	4.25	—	—
L	2.6	—	2.85	—	—
L <sub>E</sub>	0.8	—	1.2	—	—
α	—	—	—	max. 10°	1

Note: 1) Applicable to all sides

Anschluß/Terminal

Pin	1	2	3
1	B	C	E

7

# Einzelhalbleiter

## Small-Signal Semiconductors

### NF-Transistoren

### AF Transistors

Typ Type	$V_{ce0}$	$I_c$	$f_T$	$h_{FE}$	1)	Bild Fig.	Bestellnum- mer Ordering Code	Stck. Pcs.				
									min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999
	V	mA	MHz					Min.				

#### NPN-Hochvolt-Transistoren im SOT-223-Gehäuse (12-mm-Gurt)

#### NPN High Voltage Transistors in SOT-223 Package (12-mm Tape)

							Q62702-					
BF 720	300	50	100	$\geq 50$	3	3	-F1238	25				
BF 722	250	50	100	$\geq 50$	3	3	-F1306	25				
BFN 36	250	200	70	$\geq 40$	3	3	-F1246	25				
BFN 38	300	200	70	$\geq 30$	3	3	-F1303	25				

#### PNP-Hochvolt-Transistoren im SOT-223-Gehäuse (12-mm-Gurt)

#### PNP High Voltage Transistors in SOT-223 Package (12-mm Tape)

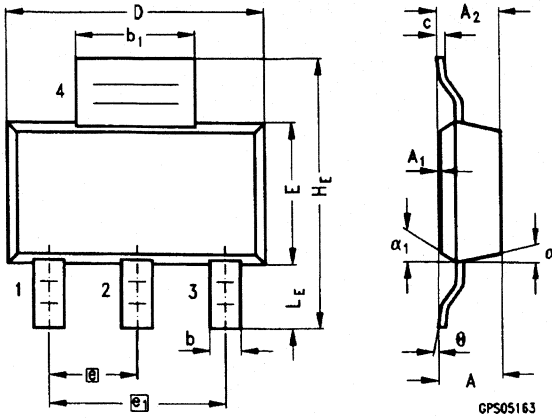
							Q62702-					
BF 721	300	50	100	$\geq 50$	3	3	-F1239	25				
BF 723	250	50	100	$\geq 50$	3	3	-F1309	25				
BFN 37	250	200	100	$\geq 40$	3	3	-F1304	25				
BFN 39	300	200	100	$\geq 30$	3	3	-F1305	25				

■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal

SOT-223

Bild/Figure 3



Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.7	-	-
A <sub>1</sub>	0.02	-	0.1	-	-
A <sub>2</sub>	-	-	1.6	-	-
b	0.60	-	0.80	-	-
b <sub>1</sub>	2.9	-	3.1	-	-
C	0.24	-	0.32	-	-
D	6.3	-	6.7	-	-
E	3.3	-	3.7	-	-
e	-	2.3	-	-	-
e <sub>1</sub>	-	4.6	-	-	-
H <sub>E</sub>	6.7	-	7.3	-	-
L <sub>E</sub>	-	1.7	-	-	-
α	-	-	-	max. 16°	1
α <sub>1</sub>	-	-	-	13°	2
θ	-	-	-	10°	-

Anschluß/Terminal

Pin	1	2	3	4
3	B	C	E	C

Notes: 1) Applicable to case top  
2) Applicable to case bottom

7

# Einzelhalbleiter Small-Signal Semiconductors

## HF-Dioden RF Diodes

Typ Type	$V_{(BR)}$	$V_F$	$I_F$	Anschluß Terminal	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
	V	mV	mA					Min.	min. bis/to 99	100 bis/to 499	500 bis/to 999

### Schottky-Dioden im DO-35-Gehäuse Schottky Diodes in DO-35 Package

■ BAS 40-02	> 40	< 380	100	—	5	Q62702- -A629	25					
■ BAS 70-02	> 70	< 410	50	—	5	-A624	25					

### Schottky-Dioden im SOT-23-Gehäuse (8-mm-Gurt) Schottky Diodes in SOT-23 Package (8-mm Tape)

						Q62702						
BAT 17	4	600	30	2	1	-A504	50					
BAT 17-04	4	600	30	5	1	-A775	50					
BAT 17-05	4	600	30	3	1	-A776	50					
BAT 17-06	4	600	30	4	1	-A777	50					
BAT 68	8	500	30	2	1	-A926	50					
BAT 68-04	8	500	30	5	1	-A0004	50					
BAT 68-05	8	500	30	3	1	-A0015	50					
BAT 68-06	8	500	30	4	1	-A0019	50					

### Schottky-Dioden im SOT-143-Gehäuse (8-mm-Gurt) Schottky Diodes in SOT-143 Package (8-mm Tape)

						Q62702-						
BAT 14-099 R	—	480	90	5	2	-A65	100					
BAT 15-099 R	—	320	110	5	2	-A67	100					
BAT 68-07	8	500	30	1	2	-A0044	50					

Typ Type	$V_{(BR)}$	$V_F$	$I_F$	Anschluß Terminal	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
	V	mV	mA					Min.	min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

### Schottky-Dioden im SOT-143-Gehäuse (8-mm-Gurt) Schottky Diodes in SOT-143 Package (8-mm Tape)

BAT 62	40	780	30	4	2	-A971	10					
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■ = SMD (Surface Mounted Device)

For package outlines please refer to the following pages.



# Einzelhalbleiter Small-Signal Semiconductors

## HF-Dioden RF Diodes

Typ Type	$V_{(BR)}$	$R_F$	$C_T$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
								min. bis/to	25 bis/to	100 bis/to	500 bis/to	1000 bis/to
	V	$\Omega$	pF	-			Min.	24	99	499	999	2999

### PIN-Diode im DO-35-Gehäuse

#### PIN Diode in DO-35 Package

■ BAR 12-1	$\geq 100$	5	0,35	-	5	Q62702- -A651	10					
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### PIN-Dioden im SOT-23-Gehäuse (8-mm-Gurt)

#### PIN Diodes in SOT-23 Package (8-mm Tape)

■ BAR 14-1	100	7	0,25	5	1	Q62702- -A772	25					
■ BAR 15-1	100	7	0,25	3	1	-A731	25					
■ BAR 16-1	100	7	0,25	4	1	-A773	25					
■ BAR 17	100	3,5	0,32	2	1	-A858	10					

### PIN-Dioden im SOT-143-Gehäuse (8-mm-Gurt)

#### PIN Diodes in SOT 143 Package (8-mm Tape)

■ BAR 60	100	7	0,25	2	2	Q62702- -A786	10					
■ BAR 61	100	7	0,25	3	2	-A120	10					

### Abstimmioden im SOT-23-Gehäuse (8-mm-Gurt)

#### Variable Capacitance Diodes in SOT-23 Package (8-mm Tape)

Typ Type	$V_R$	$I_R$	$C_T$	$C_T/C_{T4}$	$r_s$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
										min. bis/to	25 bis/to	100 bis/to	500 bis/to	1000 bis/to
	V	nA	pF		$\Omega$				Min.	24	99	499	999	2999
■ BBY 51	7	10	2.7 ... 7.5	1.75	0.37	3	1	Q62702- -B631	25					

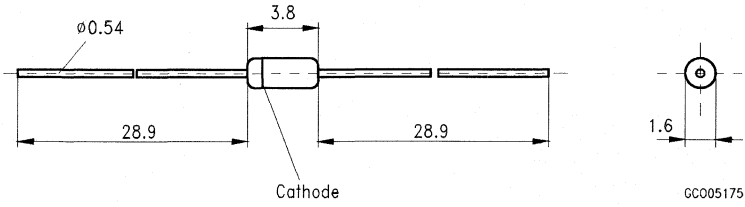
■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal

For package outlines please refer to the following pages.

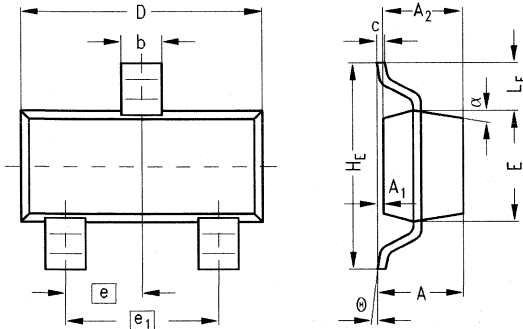
**DO-35 DHD**

**Bild/Figure 5**



SOT-23

Bild/Figure 1

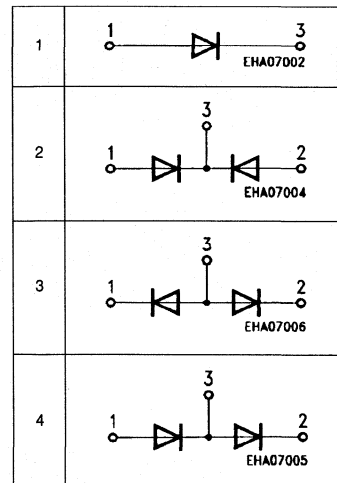


GPS05161

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.1	-	-
A <sub>1</sub>	-	-	0.1	-	-
A <sub>2</sub>	-	-	1.0	-	-
b	0.35	-	0.50	-	-
c	0.08	-	0.15	-	-
D	2.8	-	3.0	-	-
E	1.2	-	1.4	-	-
e	-	0.95	-	-	-
e <sub>1</sub>	-	1.9	-	-	-
H <sub>E</sub>	-	-	2.6	-	-
L <sub>E</sub>	0.6	-	-	-	-
α	-	-	-	max. 10°	1
Θ	-	-	-	2 ... 30°	-

Note: 1) Applicable to all sides

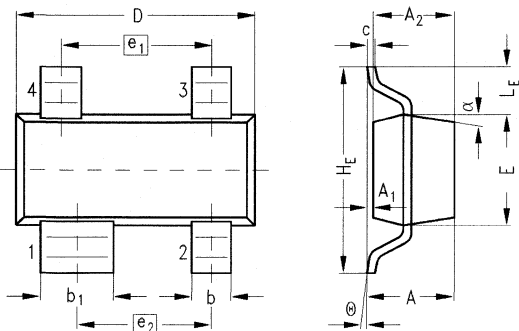
Anschluß/Terminal



# Einzelhalbleiter Small-Signal Semiconductors

SOT-143

Bild/Figure 2

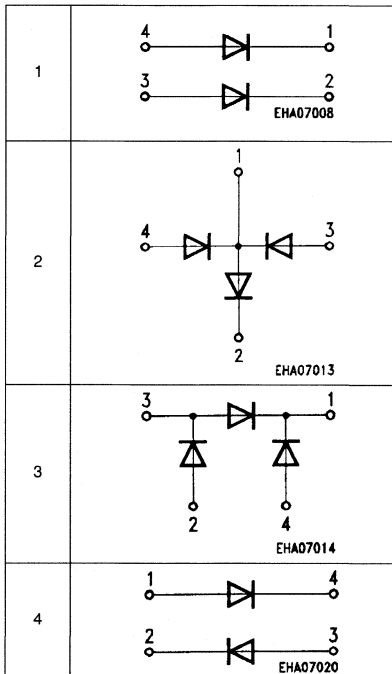


GPS05178

## Anschluß/Terminal

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.1	-	-
A <sub>1</sub>	-	-	0.1	-	-
A <sub>2</sub>	-	-	1.0	-	-
b	0.35	0.4	0.50	-	-
b <sub>1</sub>	0.75	0.8	0.90	-	-
c	0.08	-	0.15	-	-
D	2.8	-	3.0	-	-
E	1.2	-	1.4	-	-
e <sub>1</sub>	-	1.9	-	-	-
e <sub>2</sub>	-	1.7	-	-	-
H <sub>E</sub>	-	-	2.6	-	-
L <sub>E</sub>	0.6	-	-	-	-
α	-	-	-	max. 10°	1
Θ	-	-	-	2 ... 30°	-

Note: 1) Applicable to all sides



# Einzelhalbleiter

## Small-Signal Semiconductors

### HF-Transistoren

### RF Transistors

Typ Type	$V_{ce0}$ V	$I_c$ mA	$f_t$ GHz	$G$ dB	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
									min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

#### NPN-Breitbandtransistoren im Cerec-X-Gehäuse (12-mm-Gurt)

#### NPN Broadband Transistors in Cerec-X Package (12-mm Tape)

	BFQ 70	15	35	5,0	18	1 8	Q62702- -F774	5						
☉	BFQ 71	15	30	5,2	15	1 8	-F775	5						
☉	BFQ 72	15	50	5,1	18	1 8	-F776	5						
☉	BFQ 73S	15	100	5,4	15	1 8	-F1104	5						
	BFQ 74	16	35	6,0	14	1 8	-F778	5						
	BFQ 82	12	80	8,0	11	1 8	-F1189	5						
	BFQ 181	12	20	8,0	19	1 8	-F1295	5						
	BFQ 645	12	40	9,0	18	1 8	-F1283	5						

#### NPN-Breitbandtransistoren im TO-72-Gehäuse

#### NPN Broadband Transistors in TO-72 Package

☉	BFT 66	15	30	4,3	—	1 12	Q62702- -F456	5						
	BFR 15A	12	30	4,5	12	1 12	-F460	5						
	BFS 55A	15	50	4,5	10	1 12	-F454	5						
	BFX 59	20	100	0,9	—	2 12	-F422-E5	5						
	BFX 59F	20	100	1,1	—	2 12	-F369-E4	5						
	BFX 59R	20	100	1,1	—	2 12	-F370-E2	5						
	BFY 90	15	25	2,0	8	2 12	-F297	10						
	BFX 60	25	25	0,5	—	2 12	Q60206- -X60	5						

Typ Type	$V_{ce0}$ V	$I_c$ mA	$f_t$ GHz	$G$ dB	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
									min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999	3000 bis/to 9999

#### NPN-Breitbandtransistoren im SOT-89-Gehäuse (12-mm-Gurt)

#### NPN Broadband Transistors in SOT-89 Package (12-mm Tape)

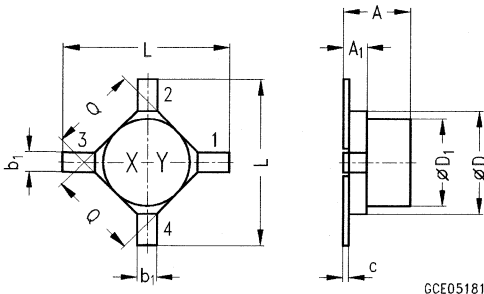
■	BFQ 17P	25	150	1,4	11,5	1 4	Q62702- -F983	25						
☉	BFQ 19S	15	75	5,1	11,8	1 4	-F1088	25						
	BFQ 193	12	80	7,5	15	1 4	-F1312	25						

■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal  
For package outlines please refer to the following pages.

**Cerec-X**

**Bild/Figure 8**



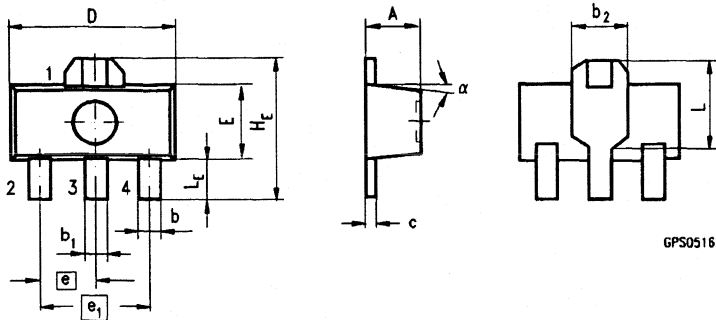
**Anschluß/Terminal**

Dim.	Millimeters		
	min.	typ.	max.
A	–	–	1.6
A <sub>1</sub>	–	0.6	–
b <sub>1</sub>	0.45	0.5	0.55
c	0.1	0.15	0.2
D	2.35	2.55	2.75
D <sub>1</sub>	–	2.1	–
L	4.0	4.2	–
Q	2.0	2.2	2.4

Pin	1	2	3	4
6	B	E	C	E

SOT-89

Bild/Figure 4



GPS05162

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	1.5	-	-	-
b	-	-	0.65	-	-
b <sub>1</sub>	-	-	0.65	-	-
b <sub>2</sub>	-	1.6	-	-	-
c	0.25	-	-	-	-
D	-	4.5	-	-	-
E	-	-	2.6	-	-
e	-	1.5	-	-	-
e <sub>1</sub>	-	3	-	-	-
H <sub>E</sub>	-	-	4.25	-	-
L	2.6	-	2.85	-	-
L <sub>E</sub>	0.8	-	1.2	-	-
α	-	-	-	max. 10°	1

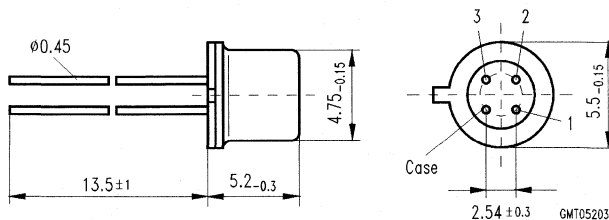
Anschluß/Terminal

Pin	1	2	3
1	B	C	E

Note: 1) Applicable to all sides

TO-72

Bild/Figure 12



Anschluß/Terminal

Pin	1	2	3
1	C	E	B
2	C	B	E

7

# Einzelhalbleiter Small-Signal Semiconductors

## HF-Transistoren RF Transistors

Typ Type	$V_{CE0}$ V	$I_c$ mA	$f_T$ GHz	$G$ dB	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
									25 bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

### NPN-Breitbandtransistoren im SOT-23-Gehäuse (8-mm-Gurt)

### NPN Broadband Transistors in SOT-23 Package (8-mm Tape)

								Q62702-				
☉ BFR 29P	15	30	5,0	14	6	1	-F659	25				
BFR 81	16	30	5,8	15	6	1	-F1049	25				
BFR 35AP	12	30	4,9	14	6	1	-F938	25				
☉ BFR 92P	15	30	5,0	14	6	1	-F1050	25				
BFR 93A	12	50	5,5	13,5	6	1	-F1086	25				
☉ BFR 93P	15	50	5,0	13	6	1	-F1051	25				
BFR 180	8	4	6,2	14,5	6	1	-F1296	25				
BFR 280	8	10	7,0	16,5	6	1	-F1298	25				
BFR 181	12	20	8,0	18	6	1	-F1314	25				
BFR 182	12	35	8,0	18	6	1	-F1315	25				
BFR 183	12	65	8,0	18,5	6	1	-F1316	25				
BFR 193	12	80	8,0	13,5	6	1	-F1267	25				
☉ BFS 17P	15	25	2,5	10	6	1	-F940	50				

### PNP-Breitbandtransistoren im SOT-23-Gehäuse (8-mm-Gurt)

### PNP Broadband Transistors in SOT-23 Package (8-mm Tape)

								Q62702-				
BFT 92	15	25	5,0	18	6	1	-F1062	25				
BFT 93	12	35	5,0	16,5	6	1	-F1063	25				
BFR 194	15	100	5	—	6	1	-F1346	25				

☉ = SMD(Surface Mounted Device)

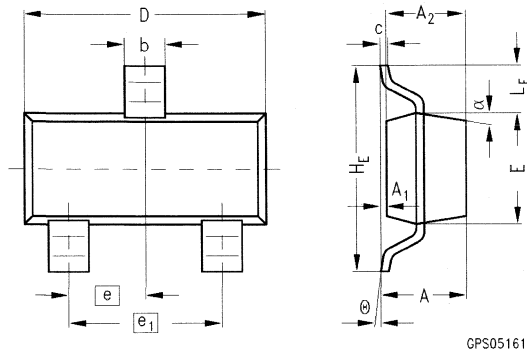
1) Anschluß/Terminal

For package outlines please refer to the following pages.



SOT-23

Bild/Figure 1



Anschluß/Terminal

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	–	–	1.1	–	–
A <sub>1</sub>	–	–	0.1	–	–
A <sub>2</sub>	–	–	1.0	–	–
b	0.35	–	0.50	–	–
c	0.08	–	0.15	–	–
D	2.8	–	3.0	–	–
E	1.2	–	1.4	–	–
e	–	0.95	–	–	–
e <sub>1</sub>	–	1.9	–	–	–
H <sub>E</sub>	–	–	2.6	–	–
L <sub>E</sub>	0.6	–	–	–	–
$\alpha$	–	–	–	max. 10°	1
$\Theta$	–	–	–	2 ... 30°	–

Note: 1) Applicable to all sides

Pin	1	2	3
6	B	E	C

# Einzelhalbleiter Small-Signal Semiconductors

## HF-Transistoren RF Transistors

Typ Type	$V_{CE0}$ V	$I_c$ mA	$f_T$ GHz	$G$ dB	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.					
								min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

### NPN-Breitbandtransistoren im T-plast-Gehäuse

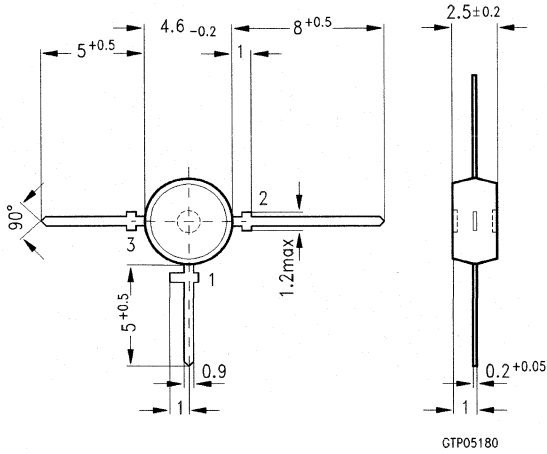
### NPN Broadband Transistors in T-Plast Package

BFQ 69	15	30	5,8	16,5	11	Q62702- -F780	10					
BFR 34A	12	30	5,0	14	11	-F346-S1	25					
BFR 90	15	30	5,0	14	11	-F560	25					
BFR 91	15	50	5,0	17	11	-F559	25					
BFR 91A	12	35	6,2	14	11	-F735	25					
BFT 65	15	50	5,0	12	11	-F451	25					
BFT 97	15	30	5,0	—	11	-F514	25					
BFT 98T	20	150	3,2	12	11	-F877	10					
BFW 92	15	25	2,4	11	11	-F321	50					
■ BFR 96	15	90	5	10	11	-F516	25					
BFR 96S	15	100	5,5	11,5	11	Q68000- -A5689	25					

For package outlines please refer to the following pages.

T-plast

Bild/Figure 11



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# Einzelhalbleiter Small-Signal Semiconductors

## HF-Transistoren RF Transistors

Typ Type	$V_{ce0}$ V	$I_c$ mA	$f_r$ GHz	$G$ dB	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
									min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

### NPN-Breitbandtransistoren im SOT-143-Gehäuse (8-mm-Gurt)

### NPN Broadband Transistors in SOT-143 Package (8-mm Tape)

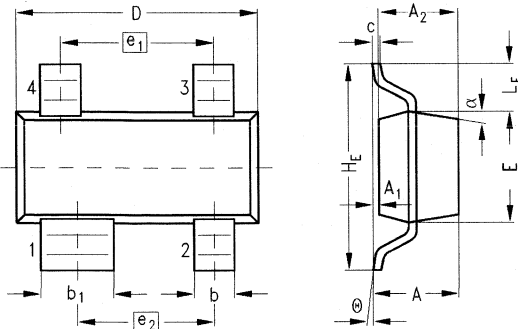
BFP 81	16	30	5,8	16,5	6	2	Q62702-	25						
BFP 93A	12	50	5,5	16,5	6	2	-F1122	25						
BFP 180	8,0	4	6,2	16,5	6	2	-F1144	25						
BFP 280	8,0	10	7,0	20,0	6	2	-F1297	25						
BFP 181	12	20	8,0	20,0	6	2	-F1300	25						
BFP 182	12	35	8,0	18	6	2	-F1317	25						
BFP 183	12	65	8,0	20	6	2	-F1318	25						
BFP 193	12	80	8,0	15	6	2	-F1319	25						
BFP 196	12	100	7,5	16	6	2	-F1282	25						
							-F1320	25						

■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal  
For package outlines please refer to the following pages.

SOT-143

Bild/Figure 2



GPS05178

Anschluß/Terminal

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.1	-	-
A <sub>1</sub>	-	-	0.1	-	-
A <sub>2</sub>	-	-	1.0	-	-
b	0.35	0.4	0.50	-	-
b <sub>1</sub>	0.75	0.8	0.90	-	-
c	0.08	-	0.15	-	-
D	2.8	-	3.0	-	-
E	1.2	-	1.4	-	-
e <sub>1</sub>	-	1.9	-	-	-
e <sub>2</sub>	-	1.7	-	-	-
H <sub>E</sub>	-	-	2.6	-	-
L <sub>E</sub>	0.6	-	-	-	-
α	-	-	-	max. 10°	1
Ø	-	-	-	2 ... 30°	-

Pin	1	2	3	4
6	C	E	B	E

Note: 1) Applicable to all sides

# Einzelhalbleiter Small-Signal Semiconductors

## HF-Transistoren RF Transistors

Typ Type	$V_{CE0}$ V	$I_c$ mA	$f_t$ GHz	$G$ dB	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
									Min.	min. bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999

### PNP-Breitbandtransistor im SOT-143-Gehäuse (8-mm-Gurt)

#### PNP Broadband Transistors in SOT-143 Package (8-mm Tape)

BFP 194	15	100	5	–	6	2	Q62702- -F1347	25						
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### NPN-Breitbandtransistoren im SOT-223-Gehäuse (12-mm-Gurt)

#### NPN Broadband Transistors in SOT-223 Package (12-mm Tape)

BFG 135A	15	150	6	10,5	4	3	Q62702- -F1322	25						
BFG 235	12	300	6	–	4	3	-F1432	10						
BFG 19S	15	100	5,3	18	4	3	-F1359	25						
BFG 193	12	80	8,0	16	4	3	-F1291	25						
BFG 196	12	100	7,2	14	4	3	-F1292	25						

### PNP-Breitbandtransistor im SOT-223-Gehäuse (12-mm-Gurt)

#### PNP Broadband Transistor in SOT-223 Package (12-mm Tape)

BFG 194	15	100	5	–	4	3	Q62702- -F1321	25						
---------	----	-----	---	---	---	---	-------------------	----	--	--	--	--	--	--

Typ Type	$V_{CE0}$ V	$I_c$ mA	$f_t$ GHz	$G$ dB	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
									Min.	min. bis/to 9	10 bis/to 24	25 bis/to 99

### NPN-Kleinleistungs-Transistoren im TO-117-Gehäuse

#### NPN Low-Power Transistors in TO-117 Package

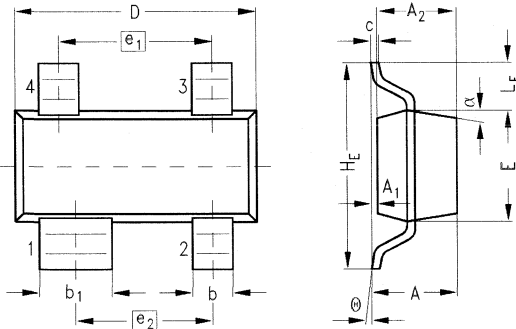
BFT 98	20	200	3,3	15	–	10	Q62702- -F523	1						
BFT 99	20	350	3,3	12	–	10	-F524	1						

■ = SMD (Surface Mounted Device)

1) Anschluß/Terminal  
For package outlines please refer to the following pages.

SOT-143

Bild/Figure 2



GPS05178

Anschluß/Terminal

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	-	-	1.1	-	-
A <sub>1</sub>	-	-	0.1	-	-
A <sub>2</sub>	-	-	1.0	-	-
b	0.35	0.4	0.50	-	-
b <sub>1</sub>	0.75	0.8	0.90	-	-
c	0.08	-	0.15	-	-
D	2.8	-	3.0	-	-
E	1.2	-	1.4	-	-
e <sub>1</sub>	-	1.9	-	-	-
e <sub>2</sub>	-	1.7	-	-	-
H <sub>E</sub>	-	-	2.6	-	-
L <sub>E</sub>	0.6	-	-	-	-
α	-	-	-	max. 10°	1
Θ	-	-	-	2 ... 30°	-

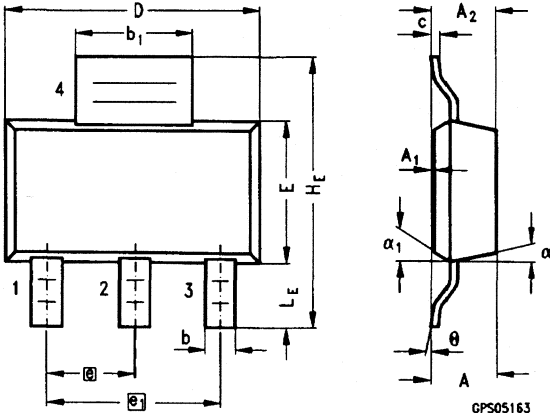
Pin	1	2	3	4
6	C	E	B	E

Note: 1) Applicable to all sides

7

SOT-223

Bild/Figure 3



Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	–	–	1.7	–	–
A <sub>1</sub>	0.02	–	0.1	–	–
A <sub>2</sub>	–	–	1.6	–	–
b	0.60	–	0.80	–	–
b <sub>1</sub>	2.9	–	3.1	–	–
C	0.24	–	0.32	–	–
D	6.3	–	6.7	–	–
E	3.3	–	3.7	–	–
e	–	2.3	–	–	–
e <sub>1</sub>	–	4.6	–	–	–
H <sub>E</sub>	6.7	–	7.3	–	–
L <sub>E</sub>	–	1.7	–	–	–
α	–	–	–	max. 16°	1
α <sub>1</sub>	–	–	–	13°	2
Θ	–	–	–	10°	–

Anschluß/Terminal

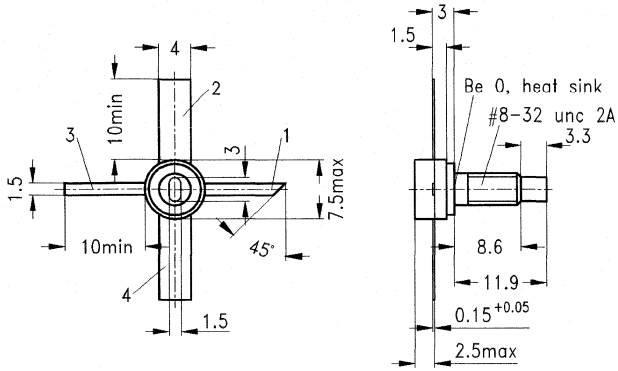
Pin	1	2	3	4
4	E	B	E	C

Notes: 1) Applicable to case top  
2) Applicable to case bottom



TO-117

Bild/Figure 10



GMT05204

7

# Einzelhalbleiter Small-Signal Semiconductors

## HF-GaAs-Feldeffekt-Transistoren RF GaAs Fieldeffect Transistors

Typ Type	$V_{os}$ V	$I_o$ mA	$F$ dB	$G$ dB	<sup>1)</sup>	Bild Fig.	Bestell-Nr. Ordering Code	Stck. Pcs. Min.						
									min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

### GaAs-FET im Cerec-X-Gehäuse (12-mm-Gurt) GaAs FET in Cerec-X Package (12-mm Tape)

							Q62703-									
CFY 19-18	6	80	< 1,8	> 9,5	2	8	-F14	5								
CFY 19-22	6	80	< 2,2	> 9,0	2	8	-F8	5								

### GaAs-FET im Micro-X-Gehäuse (12-mm-Gurt) GaAs FET in Micro-X Package (12-mm Tape)

							Q62703-									
CFY 25-17	5	80	1,6	9,5	-	9	-F106	5								
CFY 25-20	5	80	1,9	9,0	-	9	-F107	5								
CFY 25-23	5	80	2,2	9,0	-	9	-F108	5								

### GaAs-FET im SOT-143-Gehäuse (8-mm-Gurt) GaAs FET in SOT-143 Package (8-mm Tape)

							Q62703-									
CFY 30	5	80	1,4	11,5	7	2	-F97	10								

### GaAs-FET im MW-4-Gehäuse (8-mm-Gurt) GaAs FET in MW-4 Package (8-mm Tape)

							Q62702-									
CFY 35-20	5	60	1,9	-	1	14	-F1393	10								

Typ Type	$V_{os}$ V	$I_o$ mA	$F$ dB	$G$ dB	<sup>1)</sup>	Bild Fig.	Bestell-Nr. Ordering Code	Stck. Pcs. Min.						
									min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

### Ga-As-HEMT FET im Micro-X-Gehäuse (12-mm-Gurt) GaAs HEMT FET in Micro-X Package (12-mm Tape)

							Q62703-									
CFY 65-12	4	70	1,1	11,5	-	9	-F101	1								
CFY 65-14	4	70	1,3	11,5	-	9	-F102	1								

### GaAs HEMT im MW-4-Gehäuse (8-mm-Gurt) GaAs HEMT in MW-4 Package (8-mm Tape)

							Q62702-									
CFY 75-13	4	70	1,2	10,5	1	14	-F1376	10								

☒ = SMD (Surface Mounted Device)

<sup>1)</sup> Anschluß/Terminal  
For package outlines please refer to the following pages.

# Einzelhalbleiter Small-Signal Semiconductors

## HF-GaAs-Feldeffekt-Transistoren RF GaAs Fieldeffect Transistors

Typ Type	$V_{os}$	$I_D$	$F$	$G_s$ ( $G_{sa}$ )	1)	Bild Fig.	Bestell-Nr. Ordering Code	Stck. Pcs.					
									min. bis/to	25 bis/to	100 bis/to	500 bis/to	1000 bis/to
V	mA	dB	dB	Min.					24	99	499	999	2999

### Dual Gate GaAs FET im SOT-143-Gehäuse (8-mm-Gurt)

### Dual Gate GaAs FET in SOT-143 Package (8-mm Tape)

■ CF 739	10	80	1,8	(17)	8	2	Q62702- -F1215	10						
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## HF-GaAs-MMIC RF GaAs MMICs

Typ Type	$V_{os}$	$I_D$	$f$	$G$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
									min. bis/to	25 bis/to	100 bis/to	500 bis/to	1000 bis/to
V	mA	MHz	dB	Min.					24	99	499	999	2999

### GaAs-Breitbandverstärker im SOT-143-Gehäuse (8-mm-Gurt)

### GaAs Broadband Amplifier in SOT-143 Package (8-mm Tape)

● CGY 50	< 7,5	60	> 200	8,5	9	2	Q68000- -A8370	10						
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Typ Type	$V_{os}$	$I_D$	$f$	$G$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
									min. bis/to	10 bis/to	25 bis/to	100 bis/to	500 bis/to
V	mA	MHz	dB	Min.					9	24	99	499	999

### GaAs-Breitbandverstärker im TO-12-Gehäuse

### GaAs Broadband Amplifier in TO-12-Package

CGY 21	< 6	160	> 100	21	-	13	Q68000- -A5953	1						
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### GaAs-Breitbandverstärker im Cerec-X-Gehäuse (12-mm-Gurt)

### GaAs Broadband Amplifier in Cerec-X Package (12-mm Tape)

● CGY 40	< 5,5	60	> 200	10,5	2	8	Q68000- -A4444	1						
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Typ Type	$V_s$	$I_{op}$	$f$	$G$	1)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
									min. bis/to	25 bis/to	100 bis/to	100 bis/to	1000 bis/to
V	mA	MHz	dB	Min.					24	99	499	999	2999

### Dual Gate GaAs FET im SOT-143-Gehäuse (8-mm-Gurt)

### Dual Gate GaAs FET in SOT-143 Package (8-mm-Tape)

● CF 750	< 8	80	> 900	15	10	2	Q62702- -F1436	10						
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■ = SMD (Surface Mounted Device)

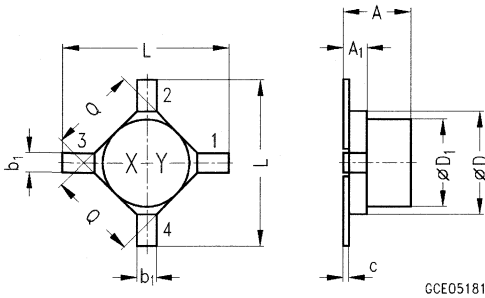
1) Anschluß/Terminal

For package outlines please refer to the following pages.

7

**Bild/Figure 8**

**Cerec-X**



GCE05181

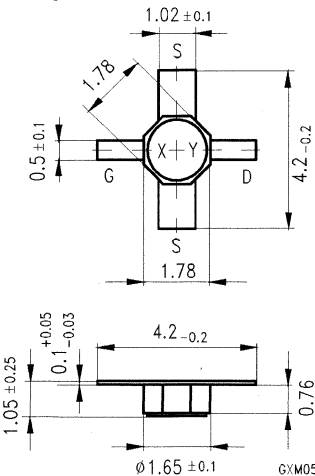
Dim.	Millimeters		
	min.	typ.	max.
A	-	-	1.6
A <sub>1</sub>	-	0.6	-
b <sub>1</sub>	0.45	0.5	0.55
c	0.1	0.15	0.2
D	2.35	2.55	2.75
D <sub>1</sub>	-	2.1	-
L	4.0	4.2	-
Q	2.0	2.2	2.4

**Anschluß/Terminal**

Pin	1	2	3	4
2	D	S	G	S

**Bild/Figure 9**

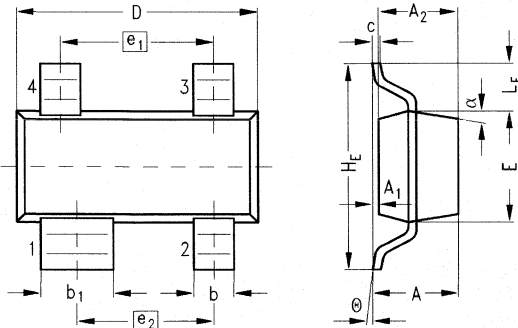
**Micro-X**



GXM05208

SOT-143

Bild/Figure 2



GPS05178

Dim.	Millimeters			Gradient	Note
	min.	typ.	max.		
A	—	—	1.1	—	—
A <sub>1</sub>	—	—	0.1	—	—
A <sub>2</sub>	—	—	1.0	—	—
b	0.35	0.4	0.50	—	—
b <sub>1</sub>	0.75	0.8	0.90	—	—
c	0.08	—	0.15	—	—
D	2.8	—	3.0	—	—
E	1.2	—	1.4	—	—
e <sub>1</sub>	—	1.9	—	—	—
e <sub>2</sub>	—	1.7	—	—	—
H <sub>E</sub>	—	—	2.6	—	—
L <sub>E</sub>	0.6	—	—	—	—
α	—	—	—	max. 10°	1
Θ	—	—	—	2 ... 30°	—

Note: 1) Applicable to all sides

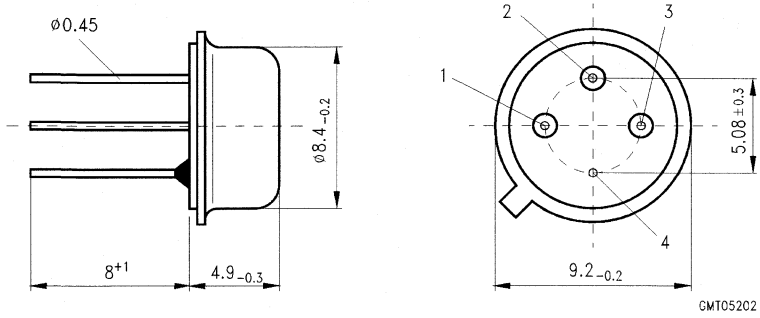
Anschluß/Terminal

Pin	1	2	3	4
7	S	D	S	G
8	S	D	G <sub>2</sub>	G <sub>1</sub>
9	S	D <sub>OUT</sub>	S	G <sub>IN</sub>
10	GND	D	G	S

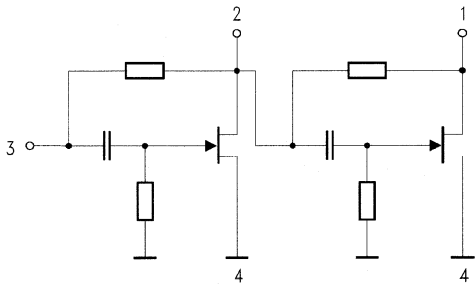
# Einzelhalbleiter Small-Signal Semiconductors

TO-12

Bild/Figure 13



GMT05202



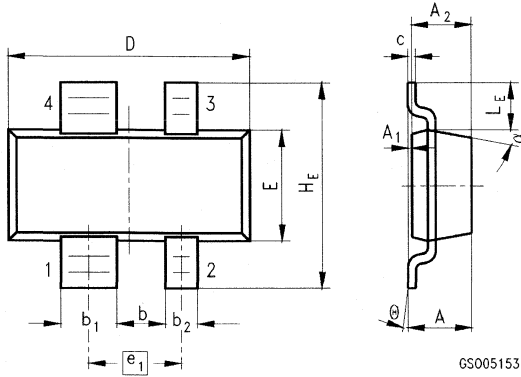
EHA07017

Pin	1	2	3	4
	RF output $V_s$	Interstage $V_s$	RF input	RF and DC ground, case

**Einzelhalbleiter**  
**Small-Signal Semiconductors**

**MW-4**

**Bild/Figure 14**



GS005153

**Anschluß/Terminal**

Pin	1	2	3	4
	S	D	S	G

Dim.	Millimeters			Gradient
	min.	typ.	max.	
A	-	-	1.1	-
A <sub>1</sub>	-	-	0.1	-
A <sub>2</sub>	-	-	1.0	-
b	-	0.6	-	-
b <sub>1</sub>	-	0.7	-	-
b <sub>2</sub>	-	0.4	-	-
c	0.08	-	0.15	-
D	2.8	-	3.0	-
E	1.2	-	1.4	-
e <sub>1</sub>	-	1.15	-	-
H <sub>E</sub>	-	-	2.6	-
L <sub>E</sub>	0.6	-	-	-
α*	-	-	-	max 10°
θ	-	-	-	2° ... 30°

\* Note: Applicable to all sides.

**7**







**Symbole und Begriffe**  
**Symbols and Terms**

Symbol	Bezeichnung	Designation
$dv/dt$	Spannungsteilheit	Rate of voltage rise
$f$	Trägerfrequenz	Carrier frequency
$f_{CO}$	Grenzfrequenz	Cut-off frequency
$I_{CE}$	Kollektor-Emitter-Strom	Collector-emitter current
$I_C/I_F$	Stromübertragsverhältnis	Current transfer ratio
$I_e^{(1)}$	Strahlstärke	Radiant intensity
$I_F$	Durchlaßstrom	Forward current
$I_F$	Segmentstrom	Current per segment
$I_{FT}$	Zündstrom	Ignition current
$I_P$	Fotostrom	Photo current
$I_R$	Sperrstrom	Reverse current
$I_T$	Laststrom	Running current
$I_S$	Stromaufnahme Detektor IC	Current input detector IC
$I_V$	Lichtstärke	Luminous intensity
$S, S_\lambda$	Fotoempfindlichkeit	Sensitivity
$t_r/t_f$	Anstiegszeit/Abfallzeit	Rise time/Fall time
$t_{PHL}, t_{PLH}$	Verzögerungszeit	Delay time
$V_{CC}$	Versorgungsspannung	Supply voltage
$V_{CE}$	Kollektor-Emitter-Spannung	Collector-emitter voltage
$V_{DRM/RRM}$	Spitzensperrspannung	Peak reverse voltage
$V_F$	Durchlaßspannung	Forward voltage
$V_{IO}$	Isolationsprüfspannung	Isolation test voltage
$V_{IORM}$	Max. Betriebsisolationsspannung	Max. operating isolation voltage
$V_R$	Sperrspannung	Reverse voltage
$\Delta p$	Druckbereich	Pressure range
$\varphi$	Linearer Drehwinkel	Linear angle of rotation
$2\varphi$	Öffnungskegel (Vollwinkel)	Viewing angle
$\Phi_{in}$	Eingekoppelte Lichtleistung	Coupled-in radiant power
$\Phi_{opt}$	Optische Leistung	Optical output
$\Phi_V$	Lichtstrom	Luminous flux
$\lambda$	Wellenlänge	Wavelength
$\lambda_{peak}$	Wellenlänge des emittierten Lichts (Strahlung bei $I_{max}$ )	Wavelength at peak emission Radiation at $I_{max}$
$\lambda_{Smax}$	Wellenlänge d. max. Fotoempfind.	Wavelength of max. sensitivity

<sup>1)</sup> Gemessen mit HP Radiant Flux Meter 8334 A (Option 013), (Meßabstand  $\geq 70$  mm)  
Measured with HP radiant flux meter 8334 A (option 013, measuring distance  $\geq 70$  mm)  
 $t_r = 20$  ms;  $I_F = 100$  mA

Alle Angaben zur Fotoempfindlichkeit beziehen sich auf die ungefilterte Strahlung einer Wolfram-Fadenlampe mit einer Farbtemperatur von 2856 K (Normlicht nach DIN 5033 und IEC 306-1)  
The spectral sensitivity indicated refers to unfiltered radiation of a tungsten filament lamp at a color temperature of 2856 K (standard light in acc. with DIN 5033 and IEC 306-1)

**Lumineszenzdioden (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999
		mcd			Min.			

**3 mm; klar; lang; Vollwinkel: 50 Grad (2φ)**

**3 mm; clear; long; Viewing Angle: 50 Degrees (2φ)**

LS 3340-JM	super-red	4 ... 32	15	Q62703-Q1701	500			
LS 3340-M	super-red	16 ... 32	15	Q62703-Q1704	500			
LS 3340-LP	super-red	10 ... 80	15	Q62703-Q1703	500			
LO 3340-JO	orange	20 (≤ 4)	15	Q62703-Q1886	500			
LY 3340-HL	yellow	2.5 ... 20	15	Q62703-Q1789	500			
LY 3340-L	yellow	10 ... 20	15	Q62703-Q1791	500			
LY 3340-KN	yellow	6.3 ... 50	15	Q62703-Q1792	500			
LG 3330-KN	green	6.3 ... 50	15	Q62703-Q1698	500			
LG 3330-M	green	16 ... 32	15	Q62703-Q1700	500			
LG 3330-LP	green	10 ... 80	15	Q62703-Q2011	500			

**3 mm; klar; lang; Vollwinkel: 40 Grad (2φ)**

**3 mm; clear; long; Viewing Angle: 40 Degrees (2φ)**

LS 3341-KN	super-red	6.3 ... 50	16	Q62703-Q2145	500			
LS 3341-MQ	super-red	16 ... 125	16	Q62703-Q2148	500			
LY 3341-JM	yellow	4 ... 32	16	Q62703-Q2149	500			
LY 3341-LP	yellow	10 ... 80	16	Q62703-Q2152	500			
▼ LG 3341-JM	green	4 ... 32	16	Q62703-Q2153	500			
LG 3341-LP	green	10 ... 80	16	Q62703-Q2156	500			

**3 mm; diffus; lang; Vollwinkel: 70 Grad (2φ)**

**3 mm; diffused; long; Viewing Angle: 70 Degrees (2φ)**

LR 3360-DG	red	0.4 ... 3.2	15	Q62703-Q1316	500			
LR 3360-F	red	1 ... 2	15	Q62703-Q1317	500			
LR 3360-FJ	red	1 ... 8	15	Q62703-Q1319	500			
LS 3360-HL	super-red	2.5 ... 20	15	Q62703-Q1320	500			
LS 3360-K	super-red	6.3 ... 12.5	15	Q62703-Q1321	500			
LS 3360-KN	super-red	6.3 ... 50	15	Q62703-Q1323	500			
LO 3360-HL	orange	2.5 ... 20	15	Q62703-Q1887	500			
LY 3360-HL	yellow	2.5 ... 20	15	Q62703-Q1324	500			
▼ LY 3360-K	yellow	6.3 ... 12.5	15	Q62703-Q1325	500			
LY 3360-JM	yellow	4 ... 32	15	Q62703-Q1998	500			
LG 3360-GK	green	1.6 ... 12.5	15	Q62703-Q1331	500			
▼ LG 3360-K	green	6.3 ... 12.5	15	Q62703-Q2008	500			
LG 3360-JM	green	4 ... 32	15	Q62703-Q2009	500			



**Lumineszenzdiolen (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999
		mcd			Min.			

**3 mm; diffus; lang; Vollwinkel: 100 Grad (2φ)**

**3 mm; diffused; long; Viewing Angle: 100 Degrees (2φ)**

LS 3380-GK	super-red	1.6 ... 12.5	15	Q62703-Q1348	500			
LS 3380-J	super-red	4 ... 8	15	Q62703-Q1349	500			
LS 3380-JM	super-red	4 ... 32	15	Q62703-Q1351	500			
LY 3380-FJ	yellow	1 ... 8	15	Q62703-Q1352	500			
▼ LY 3380-J	yellow	4 ... 8	15	Q62703-Q1354	500			
LY 3380-HL	yellow	2.5 ... 20	15	Q62703-Q1355	500			
LG 3380-EH	green	0.63 ... 5	15	Q62703-Q1356	500			
▼ LG 3380-J	green	4 ... 8	15	Q62703-Q2318	500			
LG 3380-GK	green	1.6 ... 12.5	15	Q62703-Q1359	500			

**L \*3330, L \*3340, L \*3360, L \*3380** **Bild/Figure 15**

Approx. weight 0.15 g

GEX06710

**L \*3341** **Bild/Figure 16**

Approx. weight 0.15 g

GEX06711

Circuit diagram

**Lumineszenzdiolen (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$\Phi_v$ ( $I_F = 15 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999

**ARGUS® LEDs, 3 mm; klar; lang**

**ARGUS® LEDs, 3 mm; clear; long**

LS K380-LP	super-red	10 ... 80	17	Q62703-Q1768	500			
▼ LS K380-P	super-red	40 ... 80	17	Q62703-Q1003	500			
LO K380-LP	orange	10 ... 80	17	Q62703-Q1888	500			
▼ LO K380-P	orange	40 ... 80	17	Q62703-Q2228	500			
LY K380-LP	yellow	10 ... 80	17	Q62703-Q1769	500			
▼ LY K380-N	yellow	25 ... 50	17	Q62703-Q0575	500			
LG K380-LP	green	10 ... 80	17	Q62703-Q1770	500			
▼ LG K380-P	green	40 ... 80	17	Q62703-Q1034	500			

**Super-ARGUS® LEDs, 3 mm; klar; lang;**

**Super-ARGUS® LEDs, 3 mm; clear; long**

Typ Type	$V_F$	$\Phi_v$ ( $I_F = 50 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999

LS K382-RO	super-red	160 ( $\geq 100$ )	17	Q62703-Q1956	500			
LO K382-RO	orange	160 ( $\geq 100$ )	17	Q62703-Q1957	500			
LY K382-RO	yellow	160 ( $\geq 100$ )	17	Q62703-Q1958	500			
LG K382-RO	green	160 ( $\geq 100$ )	17	Q62703-Q1959	500			
▼ LP K382-PO	pure green	63 ( $\geq 40$ )	17	Q62703-Q2123	500			

**Niedrigstrom-ARGUS® LEDs, 3 mm; klar; lang**

**Low-Current ARGUS® LEDs, 3 mm; clear; long**

Typ Type	$V_F$	$\Phi_v$ ( $I_F = 2 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999

LS K389-FO	super-red	5 ( $\geq 1$ )	17	Q62703-Q1771	500			
LY K389-FO	yellow	3.2 ( $\geq 1$ )	17	Q62703-Q1772	500			
LG K389-FO	green	3.2 ( $\geq 1$ )	17	Q62703-Q1773	500			

**Lumineszenzdioden (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$\Phi$ , ( $I_F = 15 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999
		mm			Min.			

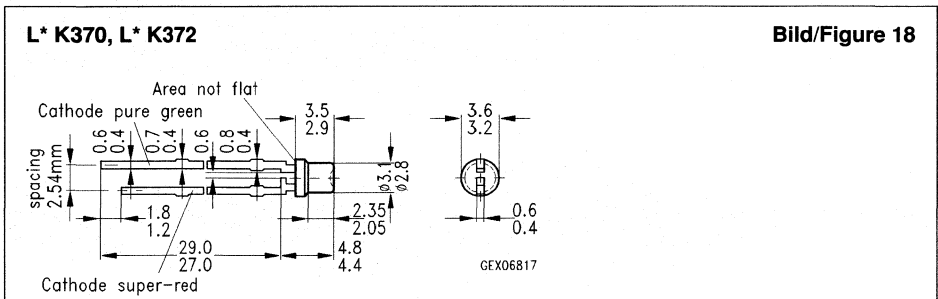
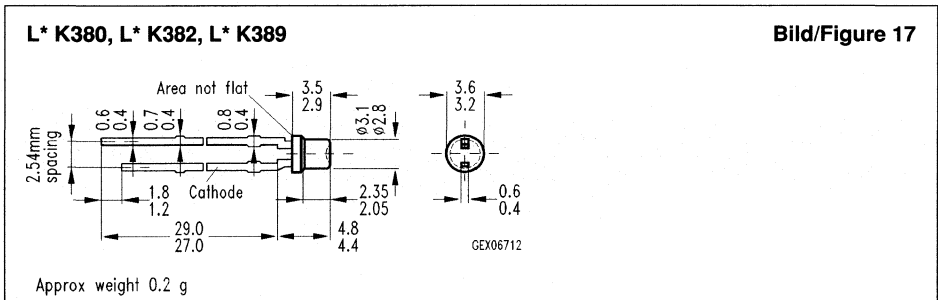
**ARGUS-MULTILED® , 3 mm; lang**  
**ARGUS-MULTILED® , 3 mm; long**

LSG K370-LO	super-red/ green	25 ( $\geq 10$ )	18	Q62703-Q2298	500			
LSP K370-KO	super-red/ pure green	10 ( $\geq 6.3$ )	18	Q62703-Q2379	500			

**Super-ARGUS-MULTILED® , 3 mm; lang**  
**Super-ARGUS-MULTILED® , 3 mm; long**

LSG K372-RO	super-red/ green	160 ( $\geq 100$ ) <sup>1)</sup>	18	Q62703-Q2299	500			
LSP K372-PO	super-red/ pure green	80 ( $\geq 40$ ) <sup>1)</sup>	18	Q62703-Q2380	500			

1)  $I_F = 50 \text{ mA}$



**Lumineszenzdioden (LEDs)**  
**LEDs;**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )  mcd	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999

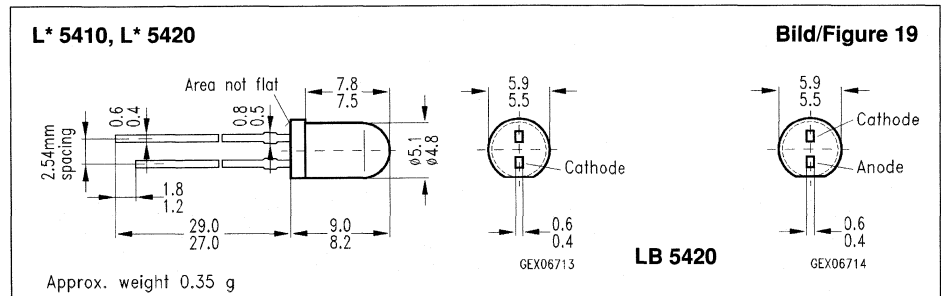
**5 mm; klar; lang; Vollwinkel: 24 Grad (2φ)**  
**5 mm; clear; long; Viewing Angle: 24 Degrees (2φ)**

LS 5420-LP	super-red	10 ... 80	19	Q62703-Q1428	500			
LS 5420-P	super-red	40 ... 80	19	Q62703-Q1430	500			
LS 5420-NR	super-red	25 ... 200	19	Q62703-Q1431	500			
LY 5420-LP	yellow	10 ... 80	19	Q62703-Q1432	500			
LY 5420-P	yellow	40 ... 80	19	Q62703-Q1434	500			
LY 5420-NR	yellow	25 ... 200	19	Q62703-Q1435	500			
LG 5410-MQ	green	16 ... 125	19	Q62703-Q1439	500			
LG 5410-Q	green	63 ... 125	19	Q62703-Q2020	500			
LG 5410-PS	green	40 ... 320	19	Q62703-Q2022	500			

Typ Type	Farbe Colour	$I_V$ ( $I_F = 20 \text{ mA}$ )  mcd	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 24	25 bis/to 99	100 bis/to 499

**Blaue LEDs; 5 mm; klar; lang; Vollwinkel: 16 Grad (2φ)**  
**Blue LEDs; 5 mm; clear; long; Viewing Angle: 16 Degrees (2φ)**

LB 5410-HO	blue	$\geq 2.5$	19	Q68000-A5700	2			
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**Lumineszenzdioden (LEDs)**

**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )  mcd	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999

**Weitwinkel LEDs 5 mm; diffus; lang; Vollwinkel: 140 Grad (2φ)**

**Wide Angle LEDs 5 mm; diffused; long; Viewing Angle: 140 Degrees (2φ)**

LS 5380-FJ	super-red	1 ... 8	20	Q62703-Q1452	500			
LS 5380-H	super-red	2.5 ... 5	20	Q62703-Q1453	500			
LS 5380-J	super-red	4 ... 8	20	Q62703-Q1454	500			
LS 5380-HL	super-red	2.5 ... 20	20	Q62703-Q1455	500			
LY 5380-EH	yellow	0.63 ... 5	20	Q62703-Q2002	500			
LY 5380-H	yellow	2.5 ... 5	20	Q62703-Q1457	500			
LY 5380-GK	yellow	1.6 ... 12.5	20	Q62703-Q2003	500			
LG 5380-FJ	green	1 ... 8	20	Q62703-Q1463	500			
LG 5380-H	green	2.5 ... 5	20	Q62703-Q2032	500			
LG 5380-HL	green	2.5 ... 20	20	Q62703-Q2017	500			

**5 mm; diffus; lang; Vollwinkel: 50 Grad (2φ)**

**5 mm; diffused; long; Viewing Angle: 50 Degrees (2φ)**

LR 5360-DG	red	0.4 ... 3.2	21	Q62703-Q1376	500			
LR 5360-F	red	1 ... 2	21	Q62703-Q1377	500			
LR 5360-FJ	red	1 ... 8	21	Q62703-Q1379	500			
LS 5360-HL	super-red	2.5 ... 20	21	Q62703-Q1380	500			
LS 5360-K	super-red	6.3 ... 12.5	21	Q62703-Q1381	500			
LS 5360-KN	super-red	6.3 ... 50	21	Q62703-Q1383	500			
LY 5360-GK	yellow	1.6 ... 12.5	21	Q62703-Q2000	500			
LY 5360-K	yellow	6.3 ... 12.5	21	Q62703-Q2001	500			
LY 5360-HL	yellow	2.5 ... 20	21	Q62703-Q1387	500			
LG 5360-GK	green	1.6 ... 12.5	21	Q62703-Q1391	500			
LG 5360-J	green	4 ... 8	21	Q62703-Q1866	500			
LG 5360-JM	green	4 ... 32	21	Q62703-Q2013	500			



**Lumineszenzdioden (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999
		mcd			Min.			

**5 mm; diffus; lang; Vollwinkel: 50 Grad (2φ)**

**5 mm; diffused; long; Viewing Angle: 50 Degrees (2φ)**

LR 5460-DG	red	0.40 ... 3.2	22	Q62703-Q1392	500			
LR 5460-FJ	red	1 ... 8	22	Q62703-Q1395	500			
▼ LR 5460-F	red	1 ... 2	22	Q62703-Q1393	500			
LS 5460-HL	super-red	2.5 ... 20	22	Q62703-Q1396	500			
LS 5460-K	super-red	6.3 ... 12.5	22	Q62703-Q1397	500			
LS 5460-KN	super-red	6.3 ... 50	22	Q62703-Q1399	500			
LY 5460-K	yellow	6.3 ... 12.5	22	Q62703-Q1402	500			
LY 5460-JM	yellow	4 ... 32	22	Q62703-Q1403	500			
LG 5460-GK	green	1.6 ... 12.5	22	Q62703-Q1407	500			
LG 5460-J	green	4 ... 8	22	Q62703-Q1867	500			
LG 5460-JM	green	4 ... 32	22	Q62703-Q2015	500			

**Superhelle LEDs; 5 mm; klar; lang; Vollwinkel: 20 Grad (2φ)**

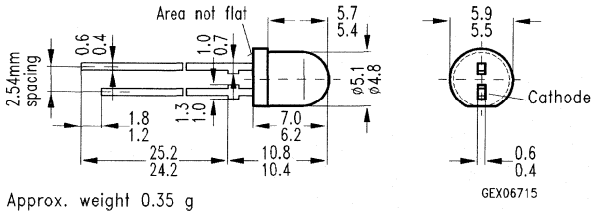
**Super Bright LEDs; 5 mm; clear; long; Viewing Angle: 20 Degrees (2φ)**

LS 5421-NR	super-red	25 ... 200	22	Q62703-Q1994	500			
LS 5421-Q	super-red	63 ... 125	22	Q62703-Q1442	500			
LS 5421-QT	super-red	63 ... 500	22	Q62703-Q1995	500			
LY 5421-MQ	yellow	16 ... 125	22	Q62703-Q1444	500			
▼ LY 5421-R	yellow	100 ... 200	22	Q62703-Q2005	500			
LY 5421-PS	yellow	40 ... 320	22	Q62703-Q1447	500			
LG 5411-MQ	green	16 ... 125	22	Q62703-Q2023	500			
LG 5411-Q	green	63 ... 125	22	Q62703-Q1739	500			
LG 5411-PS	green	40 ... 320	22	Q62703-Q2024	500			

# Optohalbleiter Opto-Semiconductors

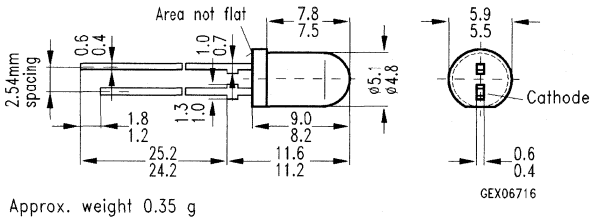
**L\* 5380**

**Bild/Figure 20**



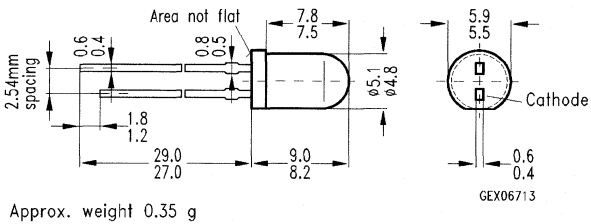
**L\* 5360**

**Bild/Figure 21**



**L\* 5460, L\* 5421, LG 5411**

**Bild/Figure 22**

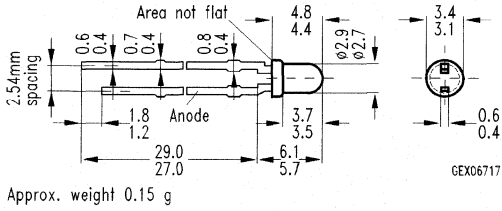


**Lumineszenzdioden (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )  mcd	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999
<b>Hyperrote GaAIAs-LEDs; 3 mm; rot klar; lang; Vollwinkel: 25 Grad (2φ)</b>								
<b>Hyperred GaAIAs-LEDs; 3 mm; red clear; long; Viewing Angle: 25 Degrees (2φ)</b>								
LH 3343-PO	hyperred	50 ( $\geq 40$ )	23	Q62703-Q2230	500			
LH 3344-QO	hyperred	150 ( $\geq 63$ )	23	Q62703-Q2231	500			
<b>Hyperrote GaAIAs-LEDs; 3 mm; rot diffus; lang; Vollwinkel: 45 Grad (2φ)</b>								
<b>Hyperred GaAIAs-LEDs; 3 mm; red diffused; long; Viewing Angle: 45 Degrees (2φ)</b>								
LH 3363-KO	hyperred	15 ( $\geq 6.3$ )	23	Q62703-Q2232	500			
LH 3364-LO	hyperred	40 ( $\geq 10$ )	23	Q62703-Q2233	500			
<b>Hyperrote GaAIAs-LEDs; 5 mm; rot klar; lang; Vollwinkel: 16 Grad (2φ)</b>								
<b>Hyperred GaAIAs-LEDs; 5 mm; red clear; long; Viewing Angle: 16 Degrees (2φ)</b>								
LH 5423-PO	hyperred	150 ( $\geq 40$ )	24	Q62703-Q2241	500			
LH 5424-QO	hyperred	320 ( $\geq 63$ )	24	Q62703-Q2242	500			
<b>Hyperrote GaAIAs-LEDs; 5 mm; rot diffus; lang; Vollwinkel: 35 Grad (2φ)</b>								
<b>Hyperred GaAIAs-LEDs; 5 mm; red diffused; long; Viewing Angle: 35 Degrees (2φ)</b>								
LH 5463-KO	hyperred	25 ( $\geq 6.3$ )	24	Q62703-Q2243	500			
LH 5464-LO	hyperred	60 ( $\geq 10$ )	24	Q62703-Q2244	500			

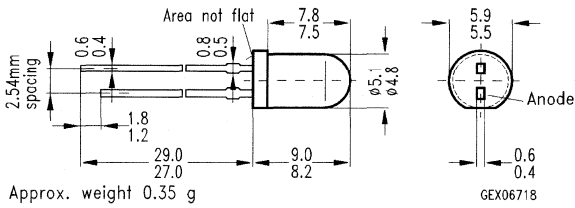
**LH 3343, LH 3344, LH 3363, LH 3364**

**Bild/Figure 23**



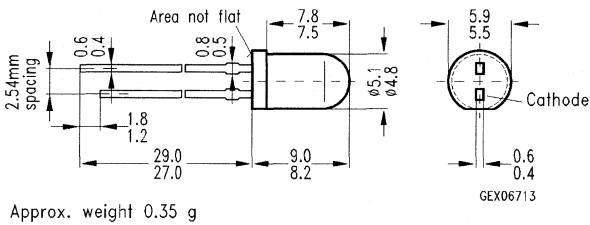
**LH 5443, LH 5444, LH 5463, LH 5464**

**Bild/Figure 24**



**L \*5480**

**Bild/Figure 25**



**Lumineszenzdiioden (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )  mcd	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999

**Weitwinkel LEDs; 5 mm; diffus; lang; Vollwinkel; 80 Grad (2φ)**

**Wide Angle LEDs; 5 mm; diffused; long; Viewing Angle: 80 Degrees (2φ)**

LR 5480-CF	red	0.25 ... 2	25	Q62703-Q1986	500			
▼ LR 5480-F	red	1 ... 2	25	Q62703-Q1987	500			
LR 5480-DG	red	0.4 ... 3.2	25	Q62703-Q1408	500			
LS 5480-GK	super-red	1.6 ... 12.5	25	Q62703-Q1989	500			
▼ LS 5480-K	super-red	6.3 ... 12.5	25	Q62703-Q1990	500			
LS 5480-JM	super-red	4 ... 32	25	Q62703-Q1992	500			
▼ LY 5480-GK	yellow	1.6 ... 12.5	25	Q62703-Q1416	500			
LY 5480-K	yellow	6.3 ... 12.5	25	Q62703-Q1418	500			
LY 5480-JM	yellow	4 ... 32	25	Q62703-Q1419	500			
LG 5480-J	green	4 ... 8	25	Q62703-Q1869	500			

**Symbol-LEDs; 5 mm; rechteckig; teildiffus; lang; Vollwinkel: 100 Grad (2φ)**

**Symbol LEDs; 5 mm; rectangular; part. diffused; long; Viewing Angle: 100 Degrees (2φ)**

LR B480-BD	red	0.16 ... 0.8	26	Q62703-Q1464	500			
LR B480-C	red	0.25 ... 0.5	26	Q62703-Q1465	500			
LS B480-EH	super-red	0.63 ... 5	26	Q62703-Q1466	500			
LS B480-H	super-red	2.5 ... 5	26	Q62703-Q1468	500			
LS B480-GK	super-red	1.6 ... 12.5	26	Q62703-Q1469	500			
LY B480-EH	yellow	0.63 ... 5	26	Q62703-Q1470	500			
▼ LY B480-H	yellow	2.5 ... 5	26	Q62703-Q2006	500			
LY B480-GK	yellow	1.6 ... 12.5	26	Q62703-Q2007	500			
LG B480-EH	green	0.63 ... 5	26	Q62703-Q1477	500			
LG B480-G	green	1.6 ... 3.2	26	Q62703-Q1870	500			
LG B480-GK	green	1.6 ... 12.5	26	Q62703-Q2026	500			

**Zweifارben-LED; 5 mm; rund; teildiffus; lang; Vollwinkel: 50 Grad (2φ)**

**Two-Color LED; 5 mm; round; part. diffused; long; Viewing Angle: 50 Degrees (2φ)**

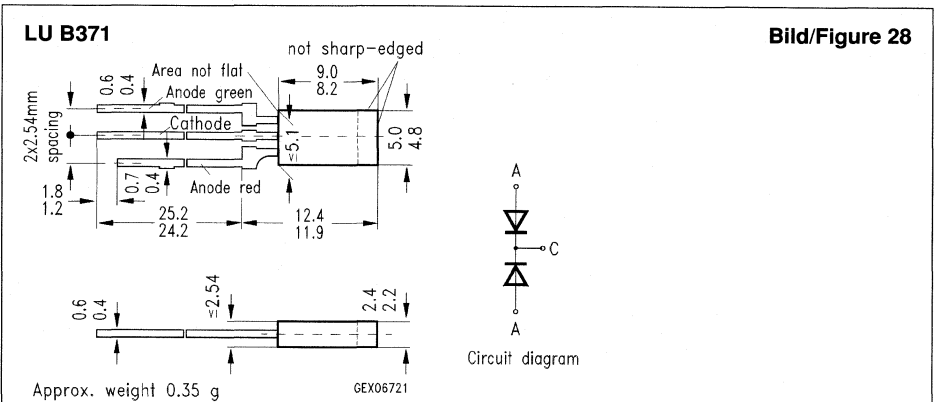
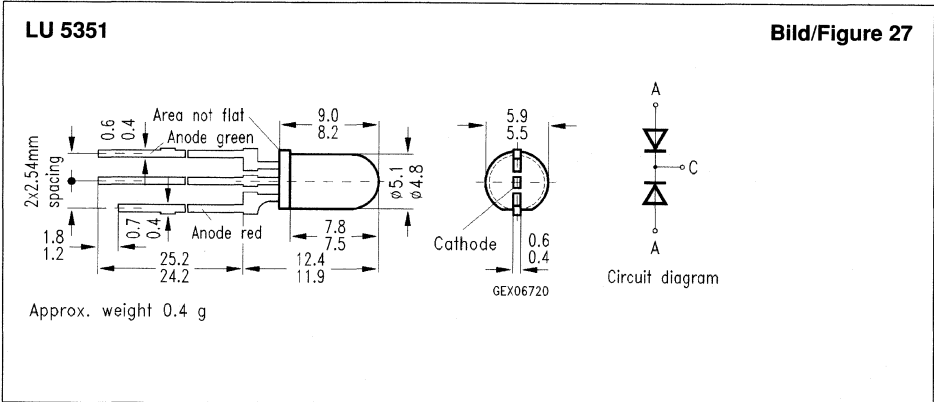
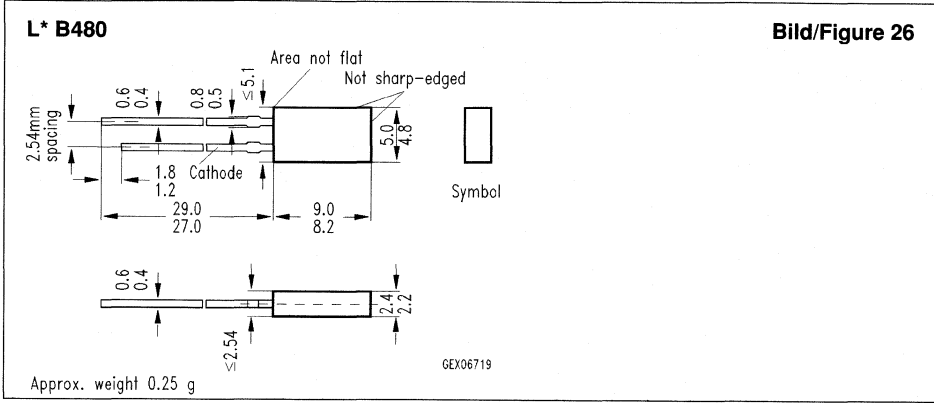
LU 5351-JM	super-red/ green	4 ... 32	27	Q62703-Q2047	500			
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**Zweifarben-LED; 5 mm; rechteckig; teildiffus; lang; Vollwinkel: 100 Grad (2φ)**

**Two-Colour LED; 5 mm; rectangular; part. diffused; long; Viewing Angle: 100 Degrees (2φ)**

LU B371-GK	super-red/ green	1.6 ... 12.5	28	Q62703-Q2049	500			
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**Lumineszenzdioden (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )  mcd	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999

**Mini-LEDs; 1 mm; diffus; Vollwinkel: 60 Grad (2φ)**

**Mini LEDs; 1 mm; diffused; Viewing Angle: 60 Degrees (2φ)**

LS U260-EO	super-red	≥ 0.63	29	Q62703-Q1492	500			
LY U260-EO	yellow	≥ 0.63	29	Q62703-Q1493	500			
LG U260-EO	green	≥ 0.63	29	Q62703-Q1494	500			

**Niedrigstrom-LEDs; 3 mm; diffus; lang; Vollwinkel: 60 Grad (2φ)**

**Low-Current LEDs; 3 mm; diffused; long; Viewing Angle: 60 Degrees (2φ)**

LS 3369-EH	super-red	0.63 ... 5 <sup>1)</sup>	30	Q62703-Q1748	500			
LY 3369-EH	yellow	0.63 ... 5 <sup>1)</sup>	30	Q62703-Q1749	500			
LG 3369-EH	green	0.63 ... 5 <sup>1)</sup>	30	Q62703-Q1750	500			

**Niedrigstrom-LEDs; 5 mm; diffus; lang; Vollwinkel: 50 Grad (2φ)**

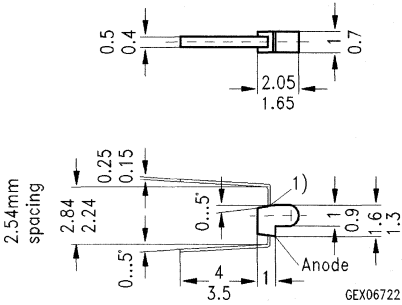
**Low-Current LEDs; 5 mm; diffused; long; Viewing Angle: 50 Degrees (2φ)**

LS 5469-EH	super-red	0.63 ... 5 <sup>1)</sup>	31	Q62703-Q1751	500			
LY 5469-EH	yellow	0.63 ... 5 <sup>1)</sup>	31	Q62703-Q1752	500			
LG 5469-EH	green	0.63 ... 5 <sup>1)</sup>	31	Q62703-Q1753	500			

<sup>1)</sup>  $I_F = 2 \text{ mA}$

**L\* U260**

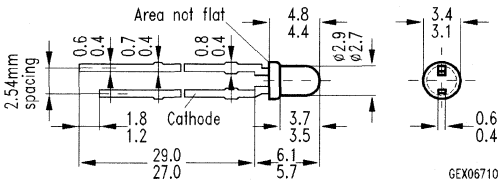
**Bild/Figure 29**



1) Detaching area for tools  
Flash not true to size  
Approx. weight 0.01 g

**L\* 3369**

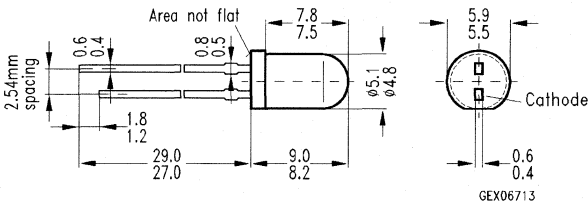
**Bild/Figure 30**



Approx. weight 0.15 g

**L\* 5469**

**Bild/Figure 31**



Approx. weight 0.35 g



**Lumineszenzdioden (LEDs)**

**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999
		mcd			Min.			

**SMD-LEDs im Gehäuse SOT 23; diffus; Vollwinkel: 140 Grad (2φ) (gegurtet)**

**SMD-LEDs: SOT-23 Package; diffused; Viewing Angle: 140 Degrees (2φ) (taped)**

LS S260-DO	super-red	≥ 0.40	32	Q62703-Q1640	500			
LY S260-DO	yellow	≥ 0.40	32	Q62703-Q1657	500			
LG S260-DO	green	≥ 0.40	32	Q62703-Q1608	500			
LU S250-DO	super-red/ green	≥ 0.40	32	Q62703-Q1642	500			
LV S260-DO	super-red/ super-red	≥ 0.40	32	Q62703-Q2067	500			
LW S260-DO	green/green	≥ 0.40	32	Q62703-Q1038	500			

**SMT-TOPLED®; Gehäuse P-LCC-2; farblos klar; Vollwinkel: 120 Grad (2φ) (gegurtet)**

**SMT-TOP-LED®; package P-LCC-2; colorless clear; Viewing Angle: 120 Deg. (2φ) (taped)**

▼ LS T670-HK	super-red	2.5 ... 12.5	33	Q62703-Q2309	500			
▼ LS T670-J	super-red	4 ... 8	33	Q62703-Q2357	500			
▼ LS T670-K	super-red	6.3 ... 12.5	33	Q62703-Q2358	500			
▼ LS T670-JL	super-red	4 ... 20	33	Q62703-Q2502	500			
▼ LO T670-HK	orange	2.5 ... 12.5	33	Q62703-Q2310	500			
▼ LO T670-J	orange	4 ... 8	33	Q62703-Q2475	500			
▼ LO T670-K	orange	6.3 ... 12.5	33	Q62703-Q2476	500			
▼ LO T670-JL	orange	4 ... 20	33	Q62703-Q2503	500			
▼ LY T670-HK	yellow	2.5 ... 12.5	33	Q62703-Q2311	500			
▼ LY T670-J	yellow	4 ... 8	33	Q62703-Q2376	500			
▼ LY T670-K	yellow	6.3 ... 12.5	33	Q62703-Q2375	500			
▼ LY T670-JL	yellow	4 ... 20	33	Q62703-Q2504	500			
▼ LG T670-HK	green	2.5 ... 12.5	33	Q62703-Q2312	500			
▼ LG T670-J	green	4 ... 8	33	Q62703-Q2377	500			
▼ LG T670-K	green	6.3 ... 12.5	33	Q62703-Q2378	500			
▼ LG T670-JL	green	4 ... 20	33	Q62703-Q2505	500			
▼ LP T670-GO	pure green	3 (≥ 1.6)	33	Q62703-Q2456	500			
LH T673-JO	hyperred, SH	10 (≥ 24)	33	Q62703-Q2335	500			
LH T674-KO	hyperred, DH	16 (≥ 6.3)	33	Q62703-Q2329	500			

▼ = SMD (Surface Mounted Device)

**Lumineszenzdioden (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 50 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 499	500 bis/to 2999	3000 bis/to 5999
		mcd			Min.			

**Super SMT-TOPLED®;**

**Gehäuse P-LCC-2; farblos klar; Vollwinkel: 120 Grad (2φ) (gegurtet)**

**Super SMT-TOP-LED®;**

**package P-LCC-2; colourless clear; Viewing Angle: 120 Deg. (2φ) (taped)**

▼ LS T672-MO	super-red	30 (≥ 16)	33	Q62703-Q2331	500			
▼ LO T672-MO	orange	30 (≥ 16)	33	Q62703-Q2330	500			
▼ LY T672-MO	yellow	30 (≥ 16)	33	Q62703-Q2332	500			
▼ LG T672-MO	green	30 (≥ 16)	33	Q62703-Q2333	500			
▼ LP T672-LO	pure green	20 (≥ 10)	33	Q62703-Q2334	500			

**Niedrigstrom SMT-TOPLED®;**

**Gehäuse P-LCC-2; farblos klar; Vollwinkel: 120 Grad (2φ) (gegurtet)**

**Low-Current SMT-TOP-LED®;**

**package P-LCC-2; colourless clear; Viewing Angle: 120 Deg. (2φ) (taped)**

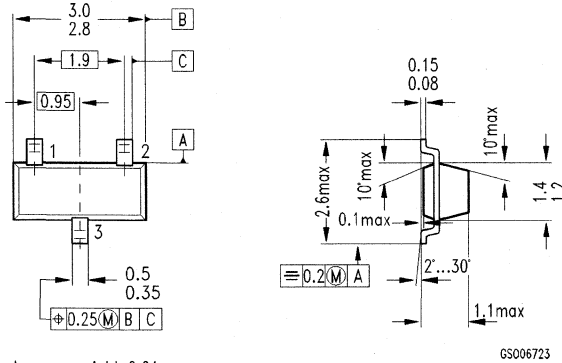
▼ LS T679-CO	super-red	1 (≥ 0.25) <sup>1)</sup>	33	Q62703-Q2383	500			
▼ LY T679-CO	yellow	1 (≥ 0.25) <sup>1)</sup>	33	Q62703-Q2384	500			
▼ LG T679-CO	green	1 (≥ 0.25) <sup>1)</sup>	33	Q62703-Q2385	500			

■ = SMD (Surface Mounted Device)

1)  $I_F = 2 \text{ mA}$

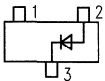
**L\* S260**

**Bild/Figure 32**

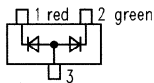


Approx. weight 0.01 g

Pin configuration  
LS, LY, LG



Pin configuration  
LU



6S006723

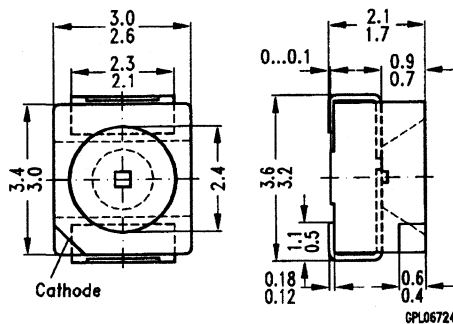
**Pin configuration (top view)**

Pin	LS S260-DO LY S260-DO LG S260-DO	LU S250-DO LV S260-DO LW S260-DO
1	Not connected	Cathode (red)
2	Anode	Cathode (green)
3	Cathode	Common anode

**8**

**L\* T670, L\* T672, LH T673, LH T674, L\* T679**

**Bild/Figure 33**



Approx. weight 0.03 g

GPL06724

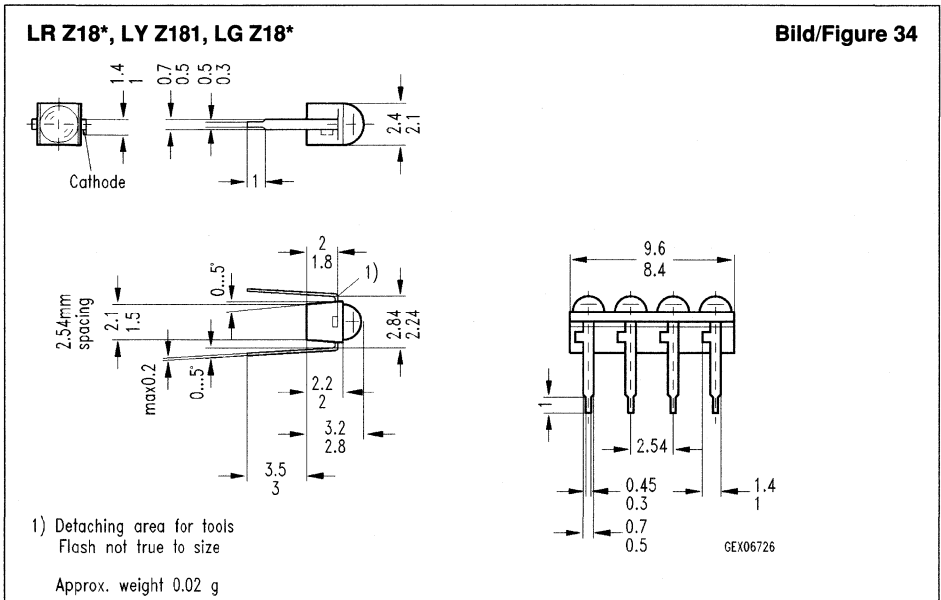
**Lumineszenzdioden (LEDs)**  
**LEDs**

Typ Type	Farbe Colour	$I_V$ ( $I_F = 10 \text{ mA}$ )	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 99	100 bis/to 499	500 bis/to 2999
		mcd			Min.			

**Zeilen-LEDs; 2 mm; diffus; Vollwinkel: 100 Grad (2φ)**

**Array LEDs; 2 mm; diffused; Viewing Angle: 100 Degrees (2φ)**

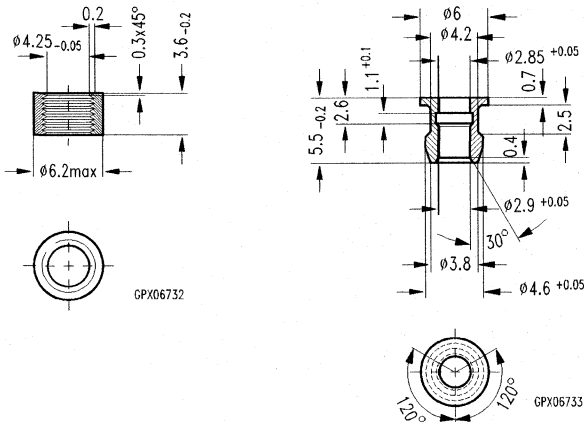
LR Z181-CO	red	≥ 0.25	34	Q62703-Q1495	300			
LR Z182-CO	red	≥ 0.25	34	Q62703-Q1496	100			
LR Z183-CO	red	≥ 0.25	34	Q62703-Q1497	100			
LR Z184-CO	red	≥ 0.25	34	Q62703-Q1498	50			
LR Z185-CO	red	≥ 0.25	34	Q62703-Q1499	50			
LY Z181-CO	yellow	≥ 0.25	34	Q62703-Q1505	300			
LG Z181-CO	green	≥ 0.25	34	Q62703-Q1506	300			
LG Z182-CO	green	≥ 0.25	34	Q62703-Q1507	100			
LG Z183-CO	green	≥ 0.25	34	Q62703-Q1508	100			
LG Z184-CO	green	≥ 0.25	34	Q62703-Q1509	50			
LG Z185-CO	green	≥ 0.25	34	Q62703-Q1510	50			



**LED-Zubehör**  
**Accessories for LEDs**

Typ Type	Farbe Colour	Ø LED mm	Bild Fig.	Bestellnummer Ordering Code	Stk. Pcs.		
						min. bis/to 2999	3000 bis/to 5999
Hülse/Ring Sleeve/ring	glass clear	3	35	Q62901-B61	500		
	black	3	35	Q62901-B62	500		
	glass clear	5	36	Q62901-B64	500		
	black	5	36	Q62901-B65	500		
Aneinanderreihbare Halterungen Endstackable clips	black	3	37	Q62902-B152-F222	500		
	black	5	38	Q62902-B153-F222	500		
Winkelhalterung Rectangular mounting part	grey	5	39	Q62902-B155-F222	500		
	black	5	40	Q62902-B156-F222	500		
Reflektor Reflector	silver	5	41	Q62902-B141-F222	500		
	silver	3	42	Q62902-B154-F222	500		

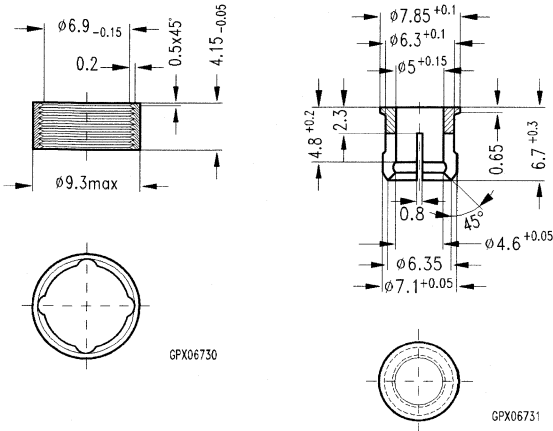
**Bild/Figure 35**



**Hülse und Ring/Sleeves and ring 3 mm LED:**  
 ∅ Bohrung/bore = 4.3 – 4.4 mm\*)  
 Stärke der Montageplatte = 1.0 – 1.5 mm\*)  
 Thickness of mounting board = 1.0 – 1.5 mm\*)

\*) Empfohlene Werte/Recommended dimensions

**Bild/Figure 36**



**5 mm LED:**

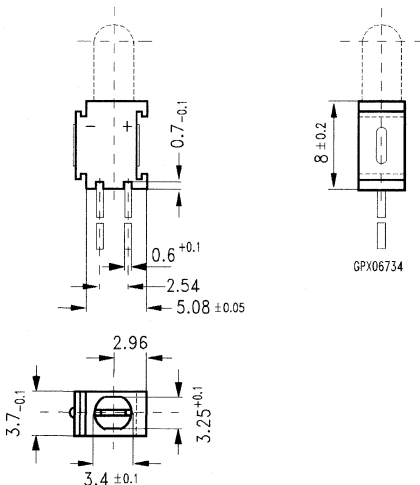
∅ Bohrung/bore = 6.45 – 6 mm\*)

Stärke der Montageplatte = 1.5 – 2.5 mm\*)

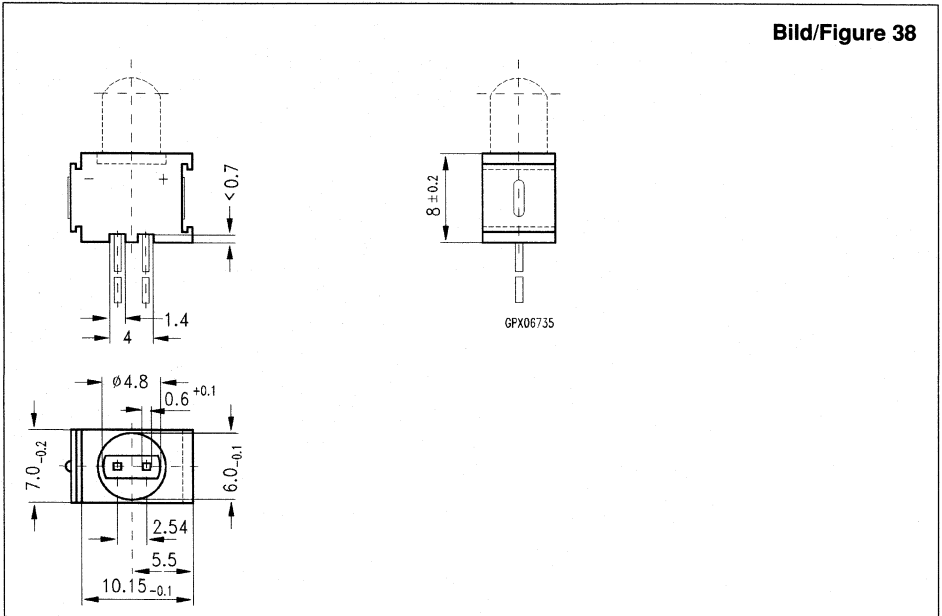
Thickness of mounting board = 1.5 – 2.5 mm\*)

\*) Empfohlene Werte/Recommended dimensions

**Bild/Figure 37**

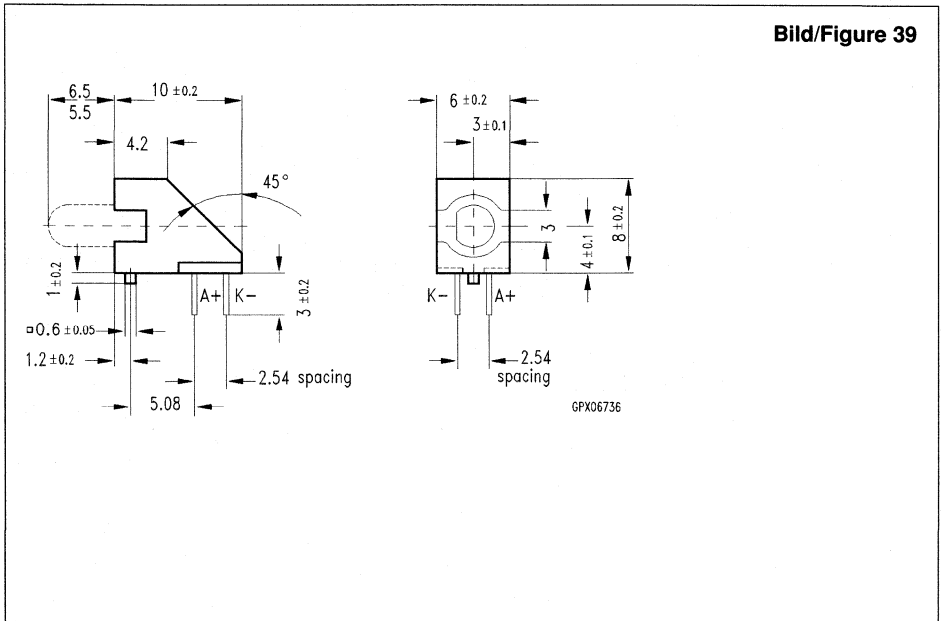


Bild/Figure 38

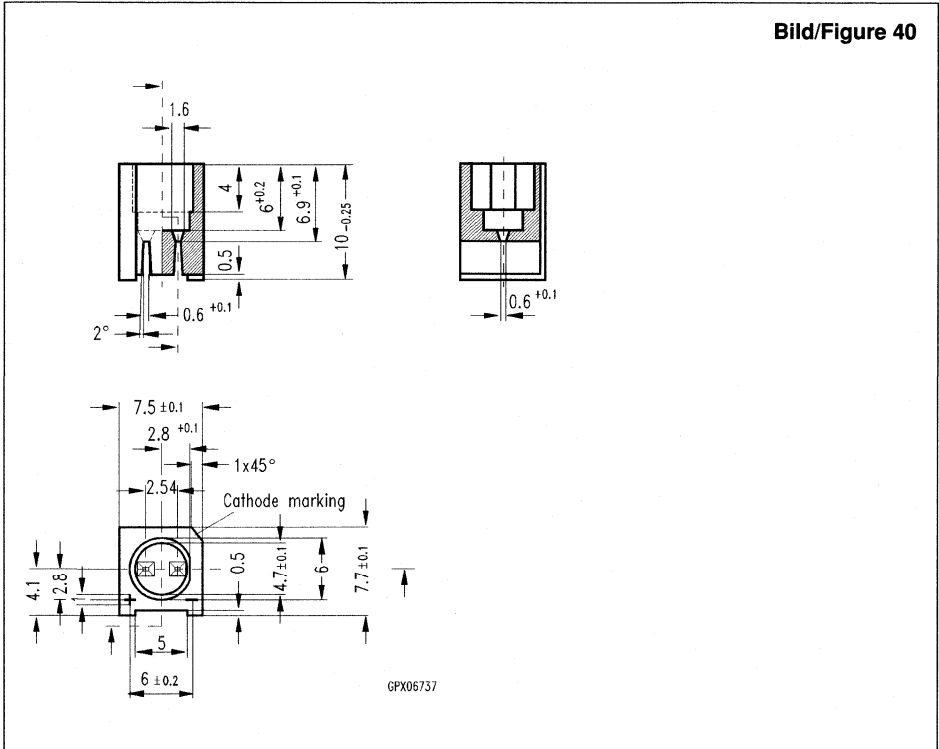


8

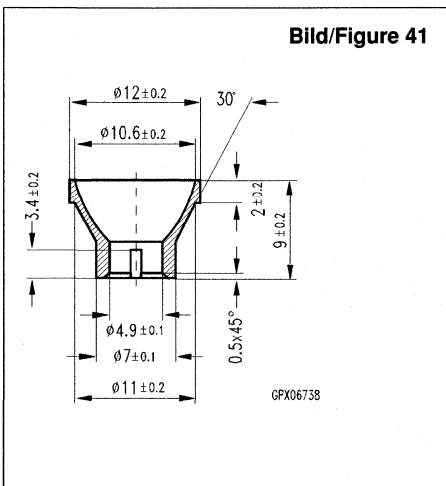
Bild/Figure 39



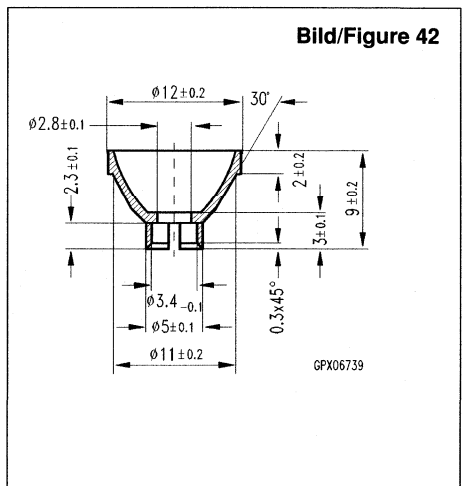
**Bild/Figure 40**



**Bild/Figure 41**



**Bild/Figure 42**





**LED-Anzeigen**  
**LED-Displays**

Typ Type	V <sub>F</sub> (typ.)	I <sub>F</sub> (typ.)	Farbe Colour	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999
	V	mA				Min.			

**LED-Anzeigen; 1-stellig; 7 mm Symbolhöhe**  
**1-Digit LED Displays; 7 mm Character Height**

HD 1075 R	1.6	10	red	43	Q68000- -A5747	50			
HD 1075 G	2.4	10	green	43	-A6346	50			
HD 1075 O	2.0	10	super-red	43	-A5746	50			
HD 1077 R	1.6	10	red	43	-A5759	50			
HD 1077 G	2.4	10	green	43	-A6348	50			
HD 1077 O	2.0	10	super-red	43	-A5758	50			

**Niedrigstrom-Anzeigen; 1-stellig; 7 mm Symbolhöhe**  
**1-Digit Low-Current Displays; 7 mm Character Height**

HDN 1075 O	1.8	2	super-red	43	Q68000- -A4315	50			
HDN 1077 O	1.8	2	super-red	43	-A4317	50			

**LED-Anzeigen; 1-stellig; 7,6 mm Symbolhöhe**  
**1-Digit LED Displays; 7,6 mm Character Height**

HDSP 7301	1.6	10	red	44	Q68000- -A8510	50			
HDSP 7501	2.0	20	super-red	44	-A8511	50			
HDSP 7801	2.1	20	green	44	-A8512	50			

**Niedrigstrom-Anzeigen; 1-stellig; 7,6 mm Symbolhöhe**  
**1-Digit Low-Current Displays; 7,6 mm Character Height**

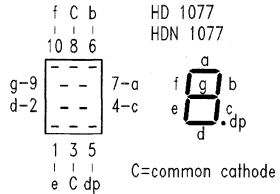
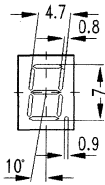
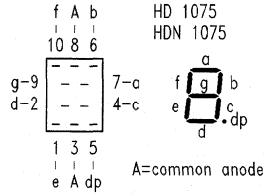
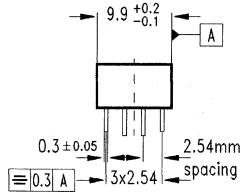
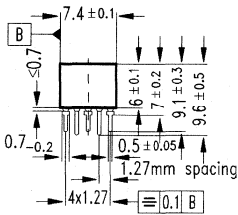
HDSP 7511	1.6	2	super-red	44	Q68000- -A8513	50			
HDSP A101	1.6	1	hyper-red	44	-A8514	50			

**LED-Anzeigen; 1-stellig; 10 mm Symbolhöhe**  
**1-Digit LED Displays; 10 mm Character Height**

HD 1105 R	1.6	10	red	45	Q68000- -A5741	40			
HD 1105 G	2.4	10	green	45	-A6350	40			
HD 1105 O	2.0	10	super-red	45	-A5766	40			
HD 1107 R	1.6	10	red	45	-A5743	40			
HD 1107 G	2.4	10	green	45	-A6352	40			
HD 1107 O	2.0	10	super-red	45	-A5772	40			

**HD 1075, HD 1077, HDN 1075, HDN 1077**

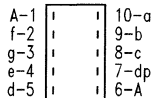
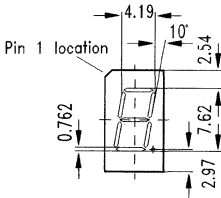
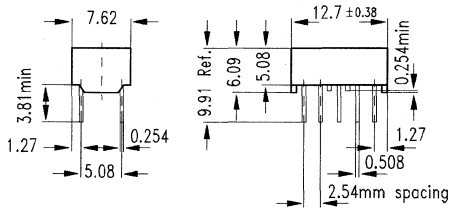
**Bild/Figure 43**



GPX06740

**HDSP 7301, HDSP 7501, HDSP 7801, HDSP 7511, HDSP A101**

**Bild/Figure 44**

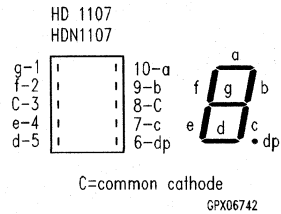
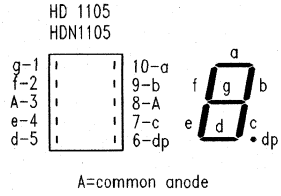
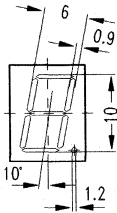
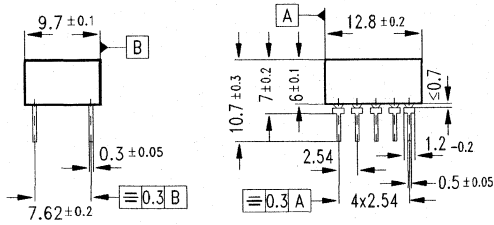


A=common anode

GPX06741

HD 1105, HD 1107, HDN 1105, HDN 1107

Bild/Figure 45



**LED-Anzeigen**  
**LED-Displays**

Typ Type	$V_f$ (typ.)	$I_f$ (typ.)	Farbe Colour	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							Min.	min. bis/to 99	100 bis/to 499

**Niedrigstrom-Anzeigen; 1-stellig; 10 mm Symbolhöhe**  
**1-Digit Low-Current Displays; 10 mm Character Height**

HDN 1105 O	1.8	2	super-red	45	Q68000- -A4319	40			
HDN 1107 O	1.8	2	super-red	45	-A4321	40			

**LED-Anzeigen; 1-stellig; 13,5 mm Symbolhöhe**  
**1-Digit LED Displays; 13.5 mm Character Height**

HD 1131 R	1.6	10	red	46	Q68000- -A7821	40			
HD 1131 G	2.4	10	green	46	-A7820	40			
HD 1131 O	2.0	10	super-red	46	-A7822	40			
HD 1133 R	1.6	10	red	46	-A7873	40			
HD 1133 G	2.4	10	green	46	-A7871	40			
HD 1133 O	2.0	10	super-red	46	-A7872	40			

**Niedrigstrom-Anzeigen; 1-stellig; 13,5 mm Symbolhöhe**  
**1-Digit Low-Current Displays; 13.5 mm Character Height**

HDN 1131 O	1.8	2	super-red	46	Q68000- -A6433	40			
HDN 1133 O	1.8	2	super-red	46	-A6434	40			

**LED-Anzeigen; 1-stellig; 20 mm Symbolhöhe**  
**1-Digit LED Displays; 20 mm Character Height**

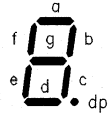
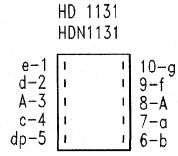
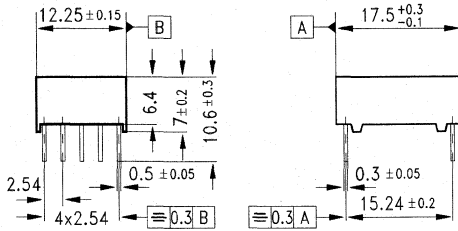
HDSP 3901	2.0	20	super-red	47	Q68000- -A8517	30			
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**Niedrigstrom-Anzeigen; 1-stellig; 20 mm Symbolhöhe**  
**1-Digit Low-Current Displays; 20 mm Character Height**

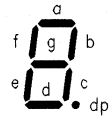
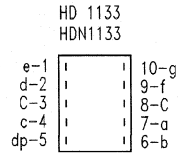
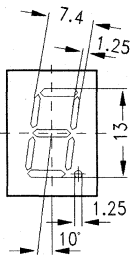
HDSP N101	1.6	1	hyper-red	47	Q68000- -A8515	30			
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**HD 1131, HD 1133, HDN 1131, HDN 1133**

**Bild/Figure 46**



A=common anode

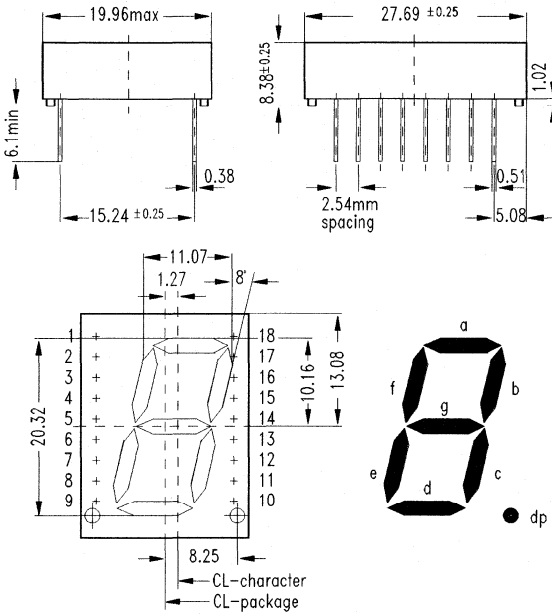


C=common cathode

GPX06743

**HDSP 3901, HDSP N101**

**Bild/Figure 47**



N.C.-1	-	-	18-N.C.
a-2	-	-	17-A
f-3	-	-	16-N.C.
A-4	-	-	15-b
e-5	-	-	14-g
A-6	-	-	13-c
N.C.-7	-	-	12-A
N.C.-8	-	-	11-d
N.C.-9	-	-	10-dp

A=common anode

GPX06744

**LED-Anzeigen**  
**LED-Displays**

Typ Type	$V_F$ $I_F =$ 20 mA	$I_F$ (max.)	$I_V$ pro Stelle per Digit $I_F = 5$ mA $\mu$ cd (typ.)	Farbe Colour	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
								min. bis/to	25 bis/to	100 bis/to
	V	mA	$\mu$ cd (typ.)				Min.	24	99	499

**LED-Anzeigen; monolithisch; mehrstellig; 2,8 mm Symbolhöhe**  
**Multi-Digit, Monolithic LED Displays; 2.8 mm Character Height**

DL-330 M	1.7	< 20	2500	red	48	Q68000- -A5993	5			
DL-340 M	1.7	< 20	2500	red	49	-A5994	3			

**LED-Anzeigen; monolithisch; mehrstellig; 3,8 mm Symbolhöhe**  
**Multi-Digit, Monolithic LED Displays; 3.8 mm Character Height**

DL-430 M	1.7	< 20	2500	red	50	Q68000- -A5995	3			
DL-440 M	1.7	< 20	2500	red	51	-A5996	3			

Typ Type	$V_F$ $I_F =$ 20 mA	$I_F$ (max.)	Farbe Colour	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to	25 bis/to	100 bis/to
	V	mA				Min.	24	99	499

**10-Balken-Elemente (Bargraph)**  
**10-Element Linear Displays (Bargraph)**

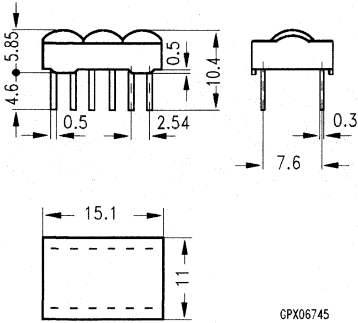
RBG 1000	1.7	20	red	52	Q68000- -A5967	10			
OBG 1000	2.2	20	super-red	52	-A5968	10			
YBG 1000	2.4	20	yellow	52	-A5969	10			
GBG 1000	2.4	20	green	52	-A5970	10			
RBG 4820	1.6	30	red	53	-A4408	10			
OBG 4830	2.1	30	super-red	53	-A4407	10			
YBG 4840	2.2	20	yellow	53	-A4409	10			
GBG 4850	2.1	30	green	53	-A4404	10			



# OptoHalbleiter Opto-Semiconductors

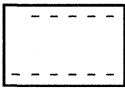
DL 330 M

Bild/Figure 48



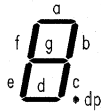
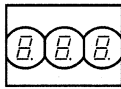
6PX06745

12 11 10 9 8 7



1 2 3 4 5 6  
Common cathodes

Dig.1 Dig.2 Dig.3

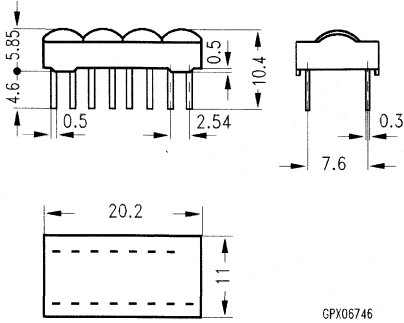


Pin	Function
1	Cathode D1
2	Anode e
3	Anode d
4	Cathode D2
5	Anode c
6	Anode dp
7	Cathode D3
8	Anode b
9	Anode g
10	Anode a
11	Anode f
12	No pin



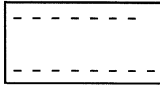
**DL 340 M**

**Bild/Figure 49**



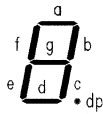
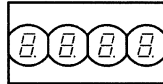
GPX06746

14 13 12 11 10 9 8



1 2 3 4 5 6 7  
Common cathodes

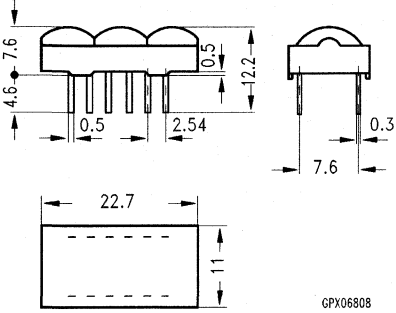
Dig.1 Dig.2 Dig.3 Dig.4



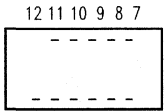
Pin	Function
1	N/C
2	Anode e
3	Anode d
4	Anode c
5	Anode dp
6	Anode g
7	Cathode D4
8	No pin
9	Anode b
10	Cathode D3
11	Anode f
12	Cathode D2
13	Anode a
14	Cathode D1

**DL 430 M**

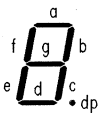
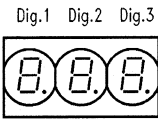
**Bild/Figure 50**



GPX06808



1 2 3 4 5 6  
 Common cathodes

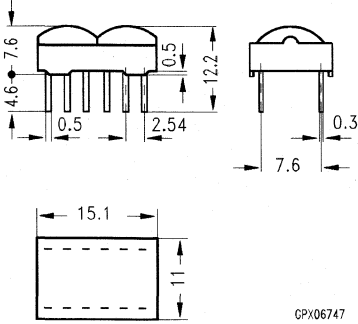


Pin	Function
1	Cathode D1
2	Anode e
3	Anode d
4	Cathode D2
5	Anode c
6	Anode dp
7	Cathode D3
8	Anode b
9	Anode g
10	Anode a
11	Anode f
12	No pin

# Optohalbleiter Opto-Semiconductors

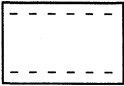
DL 440 M

Bild/Figure 51



CPX06747

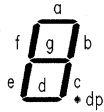
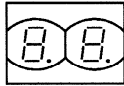
12 11 10 9 8 7



1 2 3 4 5 6

Common cathodes

Dig.1 Dig.2 Dig.3

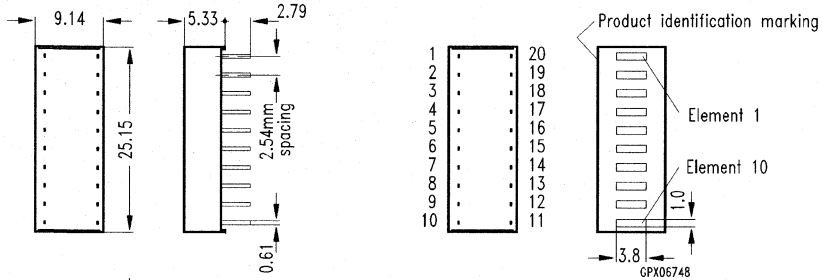


Pin	Function
1	No pin
2	Anode e
3	Anode d
4	No pin
5	Anode c
6	Anode dp
7	Cathode D2
8	Anode b
9	Anode g
10	Anode a
11	Anode f
12	Cathode D1

8

**RBG, OBG, YBG, GBG 1000**

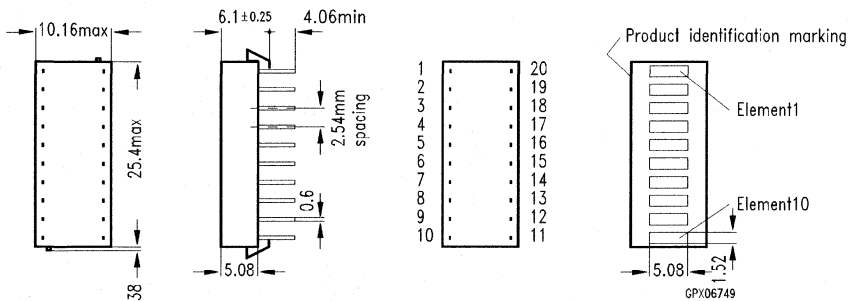
**Bild/Figure 52**



Pin	Function	Pin	Function
1	Anode 1	11	Cathode 10
2	Anode 2	12	Cathode 9
3	Anode 3	13	Cathode 8
4	Anode 4	14	Cathode 7
5	Anode 5	15	Cathode 6
6	Anode 6	16	Cathode 5
7	Anode 7	17	Cathode 4
8	Anode 8	18	Cathode 3
9	Anode 9	19	Cathode 2
10	Anode 10	20	Cathode 1

**RBG 4820, OBG 4830, YBG 4840, GBG 4850**

**Bild/Figure 53**



Pin	Function	Pin	Function
1	Anode 1	11	Cathode 10
2	Anode 2	12	Cathode 9
3	Anode 3	13	Cathode 8
4	Anode 4	14	Cathode 7
5	Anode 5	15	Cathode 6
6	Anode 6	16	Cathode 5
7	Anode 7	17	Cathode 4
8	Anode 8	18	Cathode 3
9	Anode 9	19	Cathode 2
10	Anode 10	20	Cathode 1

**LED-Anzeigen**  
**LED-Displays**

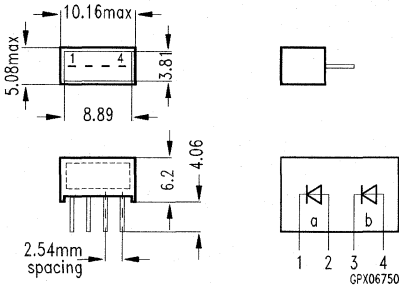
Typ Type	$V_F$ $I_F =$ 20 mA  V	$I_F$  max. mA	Farbe Colour	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999

**Leuchtflächen**  
**Light Bars**

					Q68000-				
HLMP 2300	2.0	30	super-red	54	-A7782	40			
HLMP 2400	2.1	25	yellow	54	-A7785	40			
HLMP 2500	2.2	30	green	54	-A7779	40			
HLMP 2655	2.0	30	super-red	55	-A7783	40			
HLMP 2755	2.1	25	yellow	55	-A7786	40			
HLMP 2855	2.2	30	green	55	-A7780	40			
HLMP 2685	2.0	30	super-red	56	-A7784	40			
HLMP 2785	2.1	25	yellow	56	-A7787	40			
HLMP 2885	2.2	30	green	56	-A7781	40			
HLMP 2350	2.0	30	super-red	57	-A4312	40			
HLMP 2450	2.1	25	yellow	57	-A4507	40			
HLMP 2550	2.2	30	green	57	-A2436	40			
HLMP 2600	2.0	30	super-red	58	-A1627	40			
HLMP 2700	2.1	25	yellow	58	-A1226	40			
HLMP 2800	2.2	30	green	58	-A1210	40			
HLMP 2620	2.0	30	super-red	59	-A4505	40			
HLMP 2720	2.1	25	yellow	59	-A4508	40			
HLMP 2820	2.2	30	green	59	-A3867	40			

**HLMP 2300, HLMP 2400, HLMP 2500**

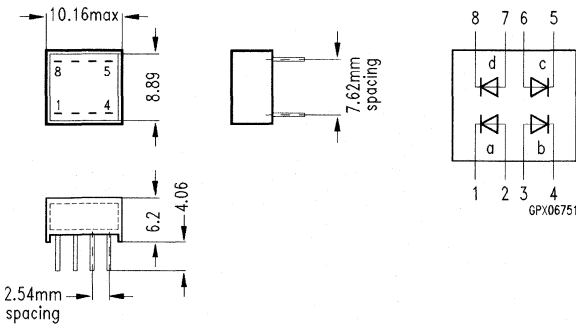
**Bild/Figure 54**



Pin	Function
1	Cathode a
2	Anode a
3	Cathode b
4	Anode b

**HLMP 2655, HLMP 2755, HLMP 2855**

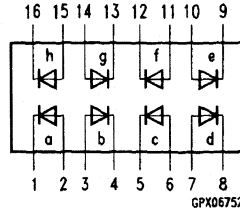
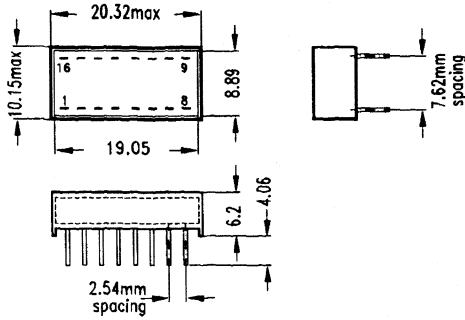
**Bild/Figure 55**



Pin	Function
1	Cathode a
2	Anode a
3	Anode b
4	Cathode b
5	Cathode c
6	Anode c
7	Anode d
8	Cathode d

HLMP 2685, HLMP 2785, HLMP 2885

Bild/Figure 56

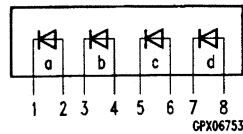
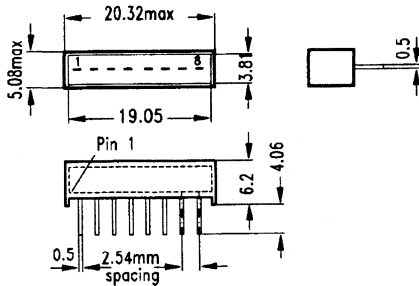


Pin	Function	Pin	Function
1	Cathode a	9	Cathode e
2	Anode a	10	Anode e
3	Anode b	11	Anode f
4	Cathode b	12	Cathode f
5	Cathode c	13	Cathode g
6	Anode c	14	Anode g
7	Anode d	15	Anode h
8	Cathode d	16	Cathode h

8

HLMP 2350, HLMP 2450, HLMP 2550

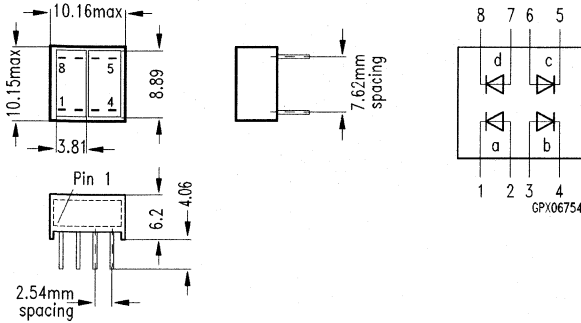
Bild/Figure 57



Pin	Function
1	Cathode a
2	Anode a
3	Cathode b
4	Anode b
5	Cathode c
6	Anode c
7	Cathode d
8	Anode d

**HLMP 2600, HLMP 2700, HLMP 2800**

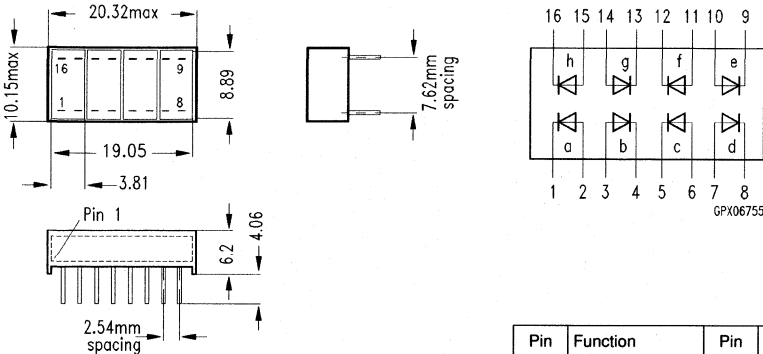
**Bild/Figure 58**



Pin	Function
1	Cathode a
2	Anode a
3	Anode b
4	Cathode b
5	Cathode c
6	Anode c
7	Anode d
8	Cathode d

**HLMP 2620, HLMP 2720, HLMP 2820**

**Bild/Figure 59**



Pin	Function	Pin	Function
1	Cathode a	9	Cathode e
2	Anode a	10	Anode e
3	Anode b	11	Anode f
4	Cathode b	12	Cathode f
5	Cathode c	13	Cathode g
6	Anode c	14	Anode g
7	Anode d	15	Anode h
8	Cathode d	16	Cathode h

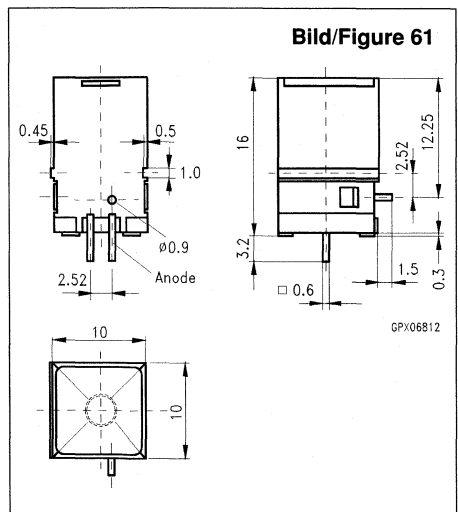
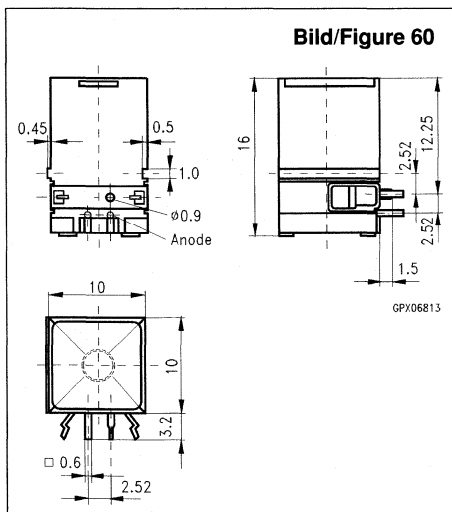


**LED-Flächenleuchte 10 × 10 mm**  
**LED-Illuminated Surface 10 × 10 mm**

$I_R = 0.01 (\leq 10) \mu\text{A}$ ;  $V_R = 5 \text{ V}$ ;  
 $V_F = 2.0 (\leq 2.6) \text{ V}$ ;  $I_F = 10 \text{ mA}$ ;  
 $V_F = 1.6 (\leq 2.0) \text{ V}$ ;  $I_F = 10 \text{ mA}$  (nur rote LEDs; only red LED)

Typ Type	Farbe Colour	$\Phi_V$ $I_F = 15 \text{ mA}$ mlm	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						Min.	50 bis/to 99	100 bis/to 499
Flächenleuchte liegend Illuminated Surface horizontal	super-red	32	60	Q62902-B167-F222	50			
	yellow	32	60	Q62902-B168-F222	50			
	green	32	60	Q62902-B169-F222	50			
	super-red	100 <sup>1)</sup>	60	Q62902-B170-F222	25			
	yellow	100 <sup>1)</sup>	60	Q62902-B171-F222	25			
	green	100 <sup>1)</sup>	60	Q62902-B172-F222	25			
Flächenleuchte stehend Illuminated Surface vertikal	super-red	32	61	Q62902-B173-F222	50			
	yellow	32	61	Q62902-B174-F222	50			
	green	32	61	Q62902-B175-F222	50			
	super-red	100 <sup>1)</sup>	61	Q62902-B176-F222	25			
	yellow	100 <sup>1)</sup>	61	Q62902-B177-F222	20			
	green	100 <sup>1)</sup>	61	Q62902-B178-F222	20			

<sup>1)</sup>  $I_F = 45 \text{ mA}$



**Intelligente LED-Anzeigen**  
**Intelligent LED-Displays**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
		Min.				
○ DL 1414 T	Q68000-A5559	2				
■ ○ DL 1416 T	Q68000-A4825	2				
○ DL 1416 B	Q68000-A4354	2				
■ ○ DL 1814	Q68000-A7156	1				
○ DL 2416 T	Q68000-A5577	2				
○ DL 3416	Q68000-A6366	1				

**Monolithische Anzeigen mit 64-ASCII-Zeichen**

Alphanumerische Anzeigen mit Speicher, Dekoder und Treiber

Versorgungsspannung  $V_{CC} = 5,0 \text{ V} \pm 10 \%$

Typ. Lichtstärke pro Stelle:  $I_V = 0,5 \text{ mcd}$  (0,5 V, 8 Segmente an)

Betriebstemperatur:  $-40 \dots +85 \text{ }^\circ\text{C}$

**Monolithic displays with 64 ASCII characters**

Alphanumeric displays including memory, decoder and driver

Power supply  $V_{CC} = 5.0 \text{ V} \pm 10\%$

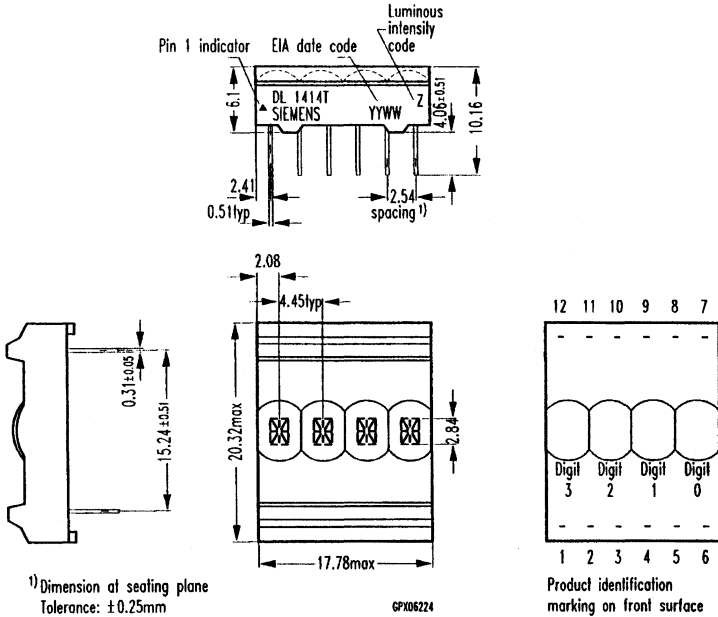
Typ. luminous intensity per digit:  $I_V = 0.5 \text{ mcd}$  (0.5 V, 8 segments on)

Operating temperature range:  $-40 \dots +85 \text{ }^\circ\text{C}$

Typ Type	Farbe Colour	Symbolhöhe Character Height	Stellen Digit	Segmente pro Stelle Segments per Digit	Sichtwinkel x/y Achse Viewing Angle x/y Axis	Zugriff Access Time	Bild Fig.
		mm			Grad Degrees		
○ DL 1414 T	red	2.8	4	17	$\pm 40/\pm 55$	110	62
■ ○ DL 1416 T	red	4.1	4	16	$\pm 20/\pm 20$	1400	63
○ DL 1416 B	red	4.1	4	17	$\pm 30/\pm 50$	350	63
■ ○ DL 1814	red	2.8	8	17	$\pm 40/\pm 40$	525	64
○ DL 2416 T	red	4.1	4	17	$\pm 45/\pm 55$	110	65
○ DL 3416	red	5.7	4	17	$\pm 45/\pm 55$	110	66

**DL 1414 T**

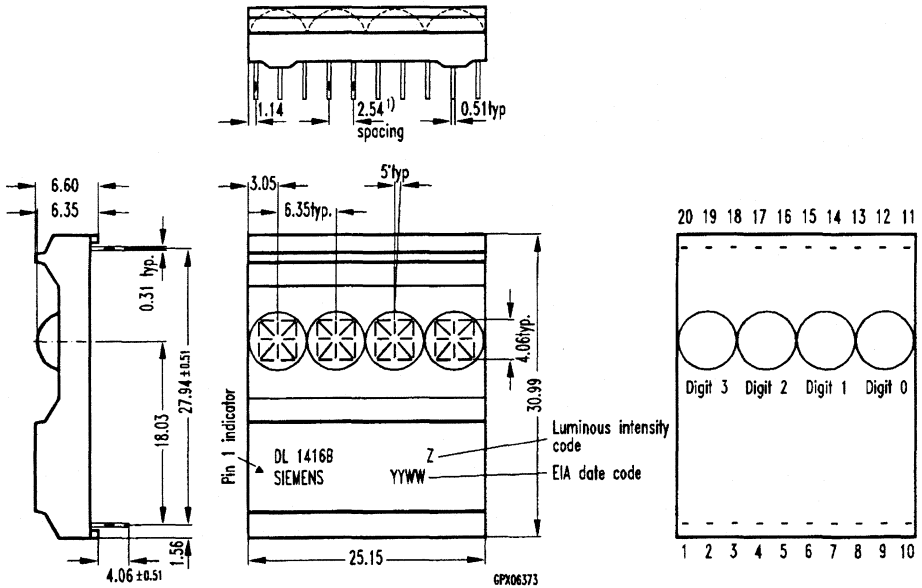
**Bild/Figure 62**



Pin	Function
1	D5 Data input
2	D4 Data input
3	WR Write
4	A1 Address
5	A0 Address
6	V <sub>CC</sub> Power supply + 5 V
7	GND Ground 0 V
8	D0 Data input (LSB)
9	D1 Data input
10	D2 Data input
11	D3 Data input
12	D6 Data input (MSB)

DL 1416 B, DL 1416 T

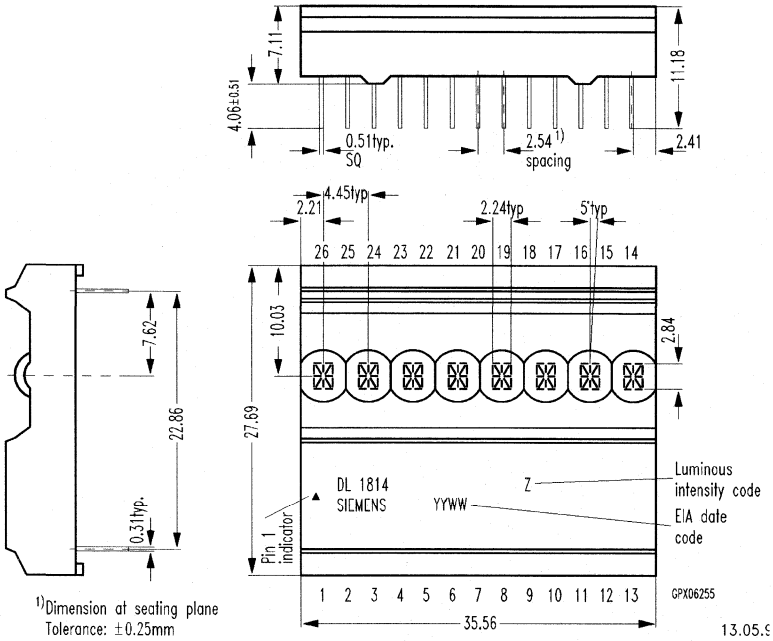
Bild/Figure 63



Pin	Function
1	D5 Data input
2	D4 Data input
3	D $\emptyset$ Data input
4	D1 Data input
5	D2 Data input
6	D3 Data input
7	CE Chip enable
8	WR Write
9	CU Cursor input
10	A $\emptyset$ Address
11	A1 Address
12	Unused
13	Unused
14	Unused
15	Unused
16	Unused
17	Unused
18	V+ Power supply (positive pole)
19	GND Ground ( $\emptyset$ V)
20	D6 Data input

DL 1814

Bild/Figure 64

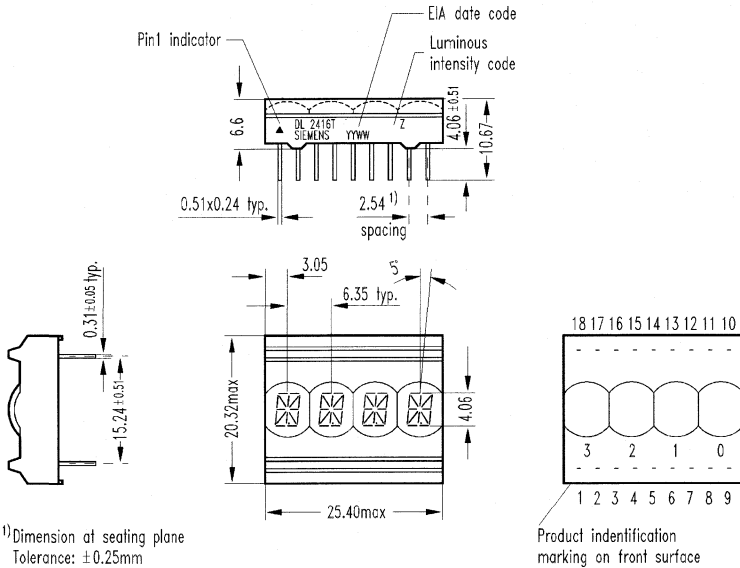


8

Pin	Function	Pin	Function
1	D $\emptyset$ Data input (LSB)	14	$\overline{\text{BL}}$ Display blank
2	D1 Data input	15	No pin
3	D2 Data input	16	No pin
4	D3 Data input	17	No pin
5	D4 Data input	18	No pin
6	D5 Data input	19	No pin
7	D6 Data input (MSB)	20	No pin
8	GND Ground ( $\emptyset$ V)	21	No pin
9	A $\emptyset$ Address	22	No pin
10	A1 Address	23	No pin
11	A2 Address	24	No pin
12	WR Write	25	No pin
13	V <sub>CC</sub> Power supply + 5 V	26	CE Chip enable

**DL 2416 T**

**Bild/Figure 65**



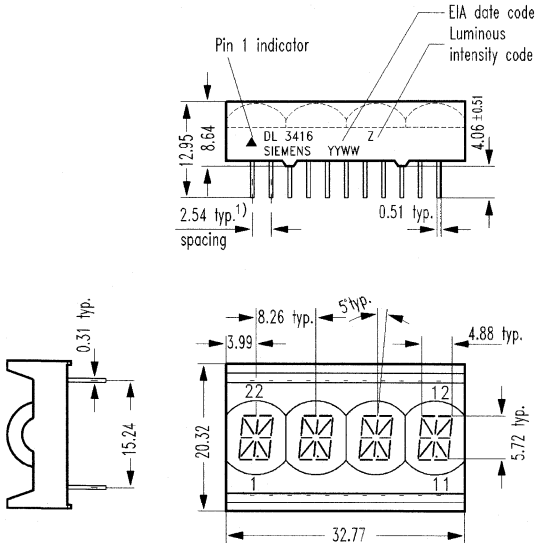
<sup>1)</sup> Dimension at seating plane  
Tolerance: ± 0.25mm

GPX06225

Pin	Function
1	CE1 Chip enable
2	CE2 Chip enable
3	CLR Clear
4	CUF Cursor enable
5	CU Cursor select
6	WR Write
7	A1 Address
8	A0 Address
9	V <sub>CC</sub> Power supply + 5 V
10	GND Ground (∅ V)
11	D0 Data input
12	D1 Data input
13	D2 Data input
14	D3 Data input
15	D6 Data input
16	D5 Data input
17	D4 Data input
18	BL Display blank

DL 3416

Bild/Figure 66



<sup>1)</sup> Dimension of seating plane  
Tolerance: ± 0.25 mm

GPX06230

Pin	Function
1	CE1 Chip enable
2	CE2 Chip enable
3	CE3 Chip enable
4	CE4 Chip enable
5	CLR Clear
6	V <sub>CC</sub> Power supply + 5 V
7	A <sub>0</sub> Address
8	A <sub>1</sub> Address
9	WR Write
10	C <sub>U</sub> Cursor select
11	C <sub>U</sub> E Cursor enable
12	GND Ground (∅ V)
13	NC Not connected
14	BL Display blank
15	NC Not connected
16	D <sub>0</sub> Data input
17	D <sub>1</sub> Data input
18	D <sub>2</sub> Data input
19	D <sub>3</sub> Data input
20	D <sub>4</sub> Data input
21	D <sub>5</sub> Data input
22	D <sub>6</sub> Data input

**Intelligente LED-Anzeigen**  
**Intelligent LED-Displays**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
⊙ DLO 7135	Q68000-A7157	2				
⊙ DLG 7137	Q68000-A7159	2				

**Punktmatrix-Anzeigen mit 96-ASCII-Zeichen**

Alphanumerische 5 × 7-Punktmatrix-Anzeigen mit Speicher, Dekoder und Treiber

Versorgungsspannung  $V_{CC} = 5,0 \text{ V} \pm 10 \%$

Typ. Lichtstärke pro Punkt:  $I_V = 0,5 \text{ mcd}$  (bei  $V_{CC} = 5 \text{ V}$ , Durchschnitt)

Betriebstemperatur:  $-40 \dots +85 \text{ }^\circ\text{C}$

**Dot-matrix displays with 96 ASCII characters**

Alphanumeric 5 × 7 dot-matrix displays including memory, decoder and driver

Power supply  $V_{CC} = 5.0 \text{ V} \pm 10\%$

Typ. luminous intensity per dot:  $I_V = 0.5 \text{ mcd}$  (at  $V_{CC} = 5 \text{ V}$ , average)

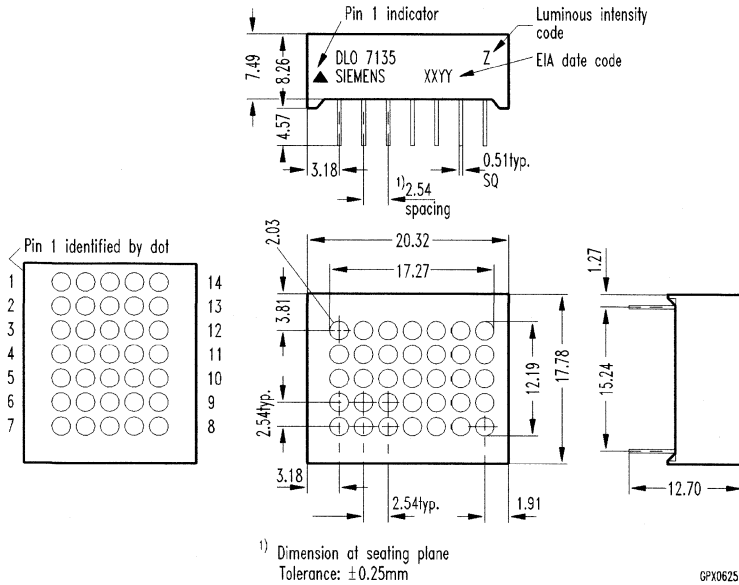
Operating temperature range:  $-40 \dots +85 \text{ }^\circ\text{C}$

Typ Type	Farbe Colour	Symbolhöhe Character Height	Anzahl der Punkte Number of Dots	Sichtwinkel Viewing Angle	Zugriff Access Time	Bild Fig.
				Grad Degrees		
⊙ DLO 7135	orange	17.3	5 × 7	± 75	200	67
⊙ DLG 7137	green	17.3	5 × 7	± 75	200	67



DLO 7135, DLG 7137

Bild/Figure 67



Pin	Function
1	$V_{cc}$ Power supply + 5 V
2	$\overline{LT}$ Lamp test
3	$\overline{CE}$ Chip enable
4	$\overline{WR}$ Write
5	$\overline{BL1}$ Brightness
6	$\overline{BL0}$ Brightness
7	GND Ground $\emptyset$ V
8	D $\emptyset$ Data input (LSB)
9	D1 Data input
10	D2 Data input
11	D3 Data input
12	D4 Data input
13	D5 Data input
14	D6 Data input (MSB)

**Intelligente LED-Anzeigen**  
**Intelligent LED-Displays**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
		Min.				
⊙ DLR 1414	Q68000-A8091	2				
⊙ DLO 1414	Q68000-A8092	2				
⊙ DLG 1414	Q68000-A8093	2				
⊙ DLR 2416	Q68000-A8094	2				
⊙ DLO 2416	Q68000-A8095	2				
⊙ DLG 2416	Q68000-A8096	2				
⊙ DLR 3416	Q68000-A8097	1				
⊙ DLO 3416	Q68000-A8098	1				
⊙ DLG 3416	Q68000-A8099	1				

**Punktmatrix-Anzeigen (DOMINO-Serie) mit 128-ASCII-Zeichen**

Alphanumerische 5 × 7-Punktmatrix-Anzeigen mit Speicher, Dekoder und Treiber  
Versorgungsspannung  $V_{CC} = 5,0 \text{ V} \pm 10 \%$

Typ. Lichtstärke pro Punkt:  $I_V = 0,7 \text{ mcd}$  bis  $0,14 \text{ mcd}$  (bei  $V_{CC} = 5 \text{ V}$ , Durchschnitt)

Betriebstemperatur:  $-40 \dots +85 \text{ }^\circ\text{C}$

**Direkt austauschbar mit den monolithischen Displays: DL 1414 T, DL 2416 T, DL 3416**

**Dot-matrix displays (DOMINO series) with 128 ASCII characters**

Alphanumeric 5 × 7 dot-matrix displays including memory, decoder and driver

Power supply  $V_{CC} = 5.0 \text{ V} \pm 10\%$

Typ. luminous intensity per dot:  $I_V = 0.7 \text{ mcd}$  to  $0,14 \text{ mcd}$  (at  $V_{CC} = 5 \text{ V}$ , average)

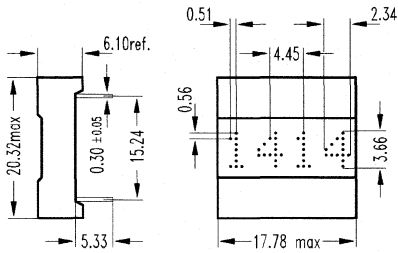
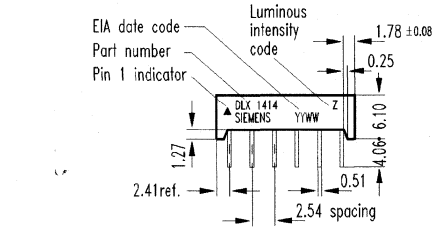
Operating temperature range:  $-40 \dots +85 \text{ }^\circ\text{C}$

**Directly exchangeable with monolithic displays: DL 1414 T, DL 2416 T, DL 3416**

Typ Type	Farbe Colour	Symbolhöhe Character Height	Anzahl der Punkte Number of Dots	Sichtwinkel x/y Achse Viewing Angle x/y Axis	Zugriff Access Time	Bild Fig.
				Grad Degrees		
		mm			ns	
⊙ DLR 1414	red	3.66	5 × 7	$\pm 50/\pm 75$	110	68
⊙ DLO 1414	orange	3.66	5 × 7	$\pm 50/\pm 75$	110	68
⊙ DLG 1414	green	3.66	5 × 7	$\pm 50/\pm 75$	110	68
⊙ DLR 2416	red	5.03	5 × 7	$\pm 50/\pm 75$	110	69
⊙ DLO 2416	orange	5.03	5 × 7	$\pm 50/\pm 75$	110	69
⊙ DLG 2416	green	5.03	5 × 7	$\pm 50/\pm 75$	110	69
⊙ DLR 3416	red	6.86	5 × 7	$\pm 50/\pm 75$	110	70
⊙ DLO 3416	orange	6.86	5 × 7	$\pm 50/\pm 75$	110	70
⊙ DLG 3416	green	6.86	5 × 7	$\pm 50/\pm 75$	110	70

**DLR 1414, DLO 1414, DLG 1414**

**Bild/Figure 68**



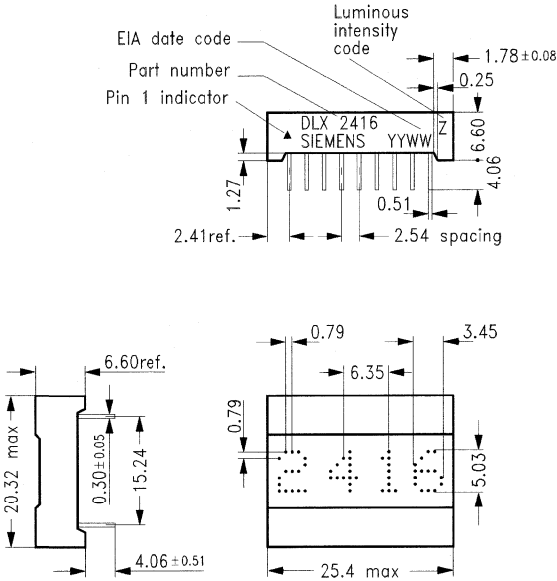
Tolerance: ± 0.51mm

GPX06674

Pin	Function
1	D5 Data input
2	D4 Data input
3	WR Write
4	A1 Address
5	A0 Address
6	V <sub>CC</sub> Power supply + 5 V
7	GND Ground 0 V
8	D0 Data input (LSB)
9	D1 Data input
10	D2 Data input
11	D3 Data input
12	D6 Data input (MSB)

**DLR 2416, DLG 2416, DLO 2416**

**Bild/Figure 69**



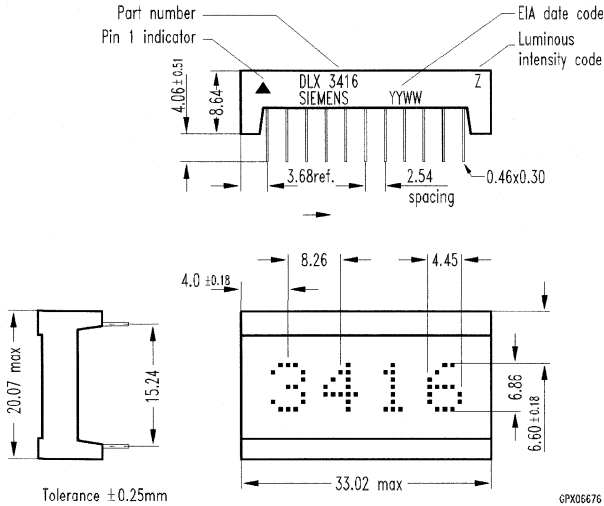
Tolerance: ±0.25mm

GPX06675

Pin	Function
1	CE1 Chip enable
2	CE2 Chip enable
3	CLR Clear
4	CUE Cursor enable
5	CU Cursor select
6	WR Write
7	A1 Address
8	A0 Address
9	V <sub>CC</sub> Power supply + 5 V
10	GND Ground ∅ V
11	D0 Data input
12	D1 Data input
13	D2 Data input
14	D3 Data input
15	D6 Data input
16	D5 Data input
17	D4 Data input
18	BL Display blank

**DLR 3416, DLO 3416, DLG 3416**

**Bild/Figure 70**



Pin	Function
1	CE1 Chip enable
2	CE2 Chip enable
3	CE3 Chip enable
4	CE4 Chip enable
5	CLR Clear
6	V <sub>CC</sub> Power supply + 5 V
7	A $\emptyset$ Address
8	A1 Address
9	WR Write
10	CU Cursor select
11	CUE Cursor enable
12	GND Ground $\emptyset$ V
13	Not connected
14	BL Display blank
15	Not connected
16	D $\emptyset$ Data input
17	D1 Data input
18	D2 Data input
19	D3 Data input
20	D4 Data input
21	D5 Data input
22	D6 Data input

**Intelligente LED-Anzeigen**  
**Intelligent LED-Displays**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
⊙ PD 2435	Q68000-A3561	1				
⊙ PD 2436	Q68000-A8366	2				
⊙ PD 2437	Q68000-A3562	1				
⊙ PD 3535	Q68000-A7964	1				
⊙ PD 3536	Q68000-A8365	1				
⊙ PD 3537	Q68000-A7965	1				
⊙ PD 4435	Q68000-A8367	1				
⊙ PD 4436	Q68000-A8368	1				
⊙ PD 4437	Q68000-A8369	1				

**Programmierbare Punktmatrix-Anzeigen mit 128-ASCII-Zeichen**

Alphanumerische 5 × 7-Punktmatrix-Anzeigen mit Speicher, Dekoder und Treiber

Versorgungsspannung  $V_{CC} = 5,0 \text{ V} \pm 10 \%$

Typ. Lichtstärke pro Punkt:  $I_V = 0,2 \text{ mcd}$  (bei  $V_{CC} = 5 \text{ V}$ , Durchschnitt)

Betriebstemperatur:  $-40 \dots +85 \text{ }^\circ\text{C}$

**Programmable dot-matrix displays with 128 ASCII characters**

Alphanumeric 5 × 7 dot-matrix displays including memory, decoder and driver

Power supply  $V_{CC} = 5.0 \text{ V} \pm 10\%$

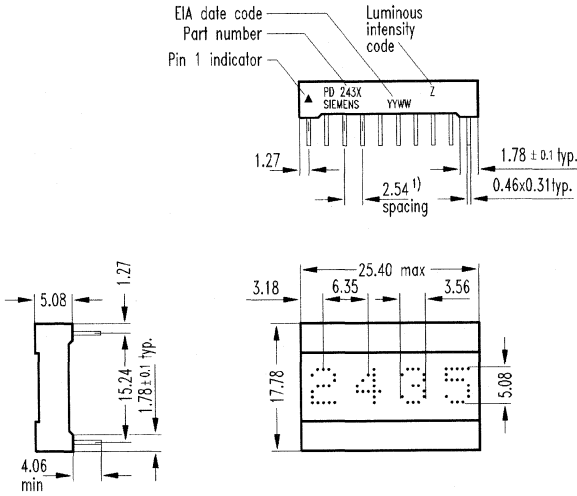
Typ. luminous intensity per dot:  $I_V = 0.2 \text{ mcd}$  (at  $V_{CC} = 5 \text{ V}$ , average)

Operating temperature range:  $-40 \dots +85 \text{ }^\circ\text{C}$

Typ Type	Farbe Colour	Symbolhöhe Character Height	Stellen Digits	Punkte pro Stelle Dots per Digit	Sichtwinkel x/y Achse Viewing Angle x/y Axis	Zugriff Access Time	Bild Fig.
		mm			Grad Degrees	ns	
⊙ PD 2435	orange	5.08	4	5 × 7	± 55/± 65	200	71
⊙ PD 2436	red	5.08	4	5 × 7	± 55/± 65	200	71
⊙ PD 2437	green	5.08	4	5 × 7	± 55/± 65	200	71
⊙ PD 3535	orange	6.86	4	5 × 7	± 55/± 65	200	72
⊙ PD 3536	red	6.86	4	5 × 7	± 55/± 65	200	72
⊙ PD 3537	green	6.86	4	5 × 7	± 55/± 65	200	72
⊙ PD 4435	orange	10.69	4	5 × 7	± 55/± 65	200	73
⊙ PD 4436	red	10.69	4	5 × 7	± 55/± 65	200	73
⊙ PD 4437	green	10.69	4	5 × 7	± 55/± 65	200	73

PD 2435, PD 2436, PD 2437

Bild/Figure 71



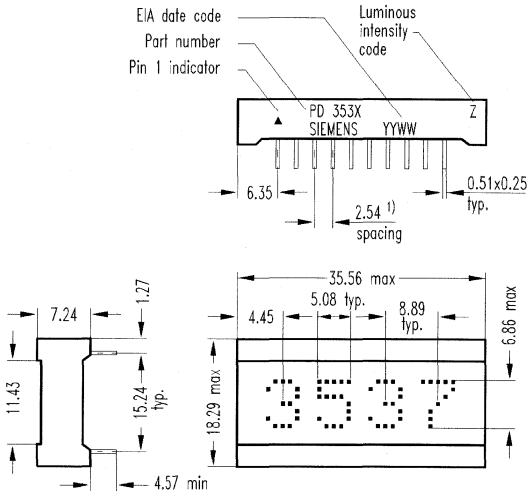
<sup>1)</sup> Dimension at seating plane  
Tolerance:  $\pm 0.25\text{mm}$

GPX06673

Pin	Function
1	$\overline{RD}$ Read
2	CLK I/O Clock I/O
3	CLK SEL Clock select
4	$\overline{RST}$ Reset
5	CE1 Chip enable
6	$\overline{CE0}$ Chip enable
7	A2 Address MSB
8	A1 Address
9	$\overline{A0}$ Address LSB
10	GND Ground
11	WR Write
12	D7 Data MSB
13	D6 Data
14	D5 Data
15	D4 Data
16	D3 Data
17	D2 Data
18	D1 Data
19	$\overline{D0}$ Data LSB
20	$V_{CC}$ Power supply

**PD 3535, PD 3536, PD 3537**

**Bild/Figure 72**



1) Dimension at sectioning plane  
Tolerance +0.25mm

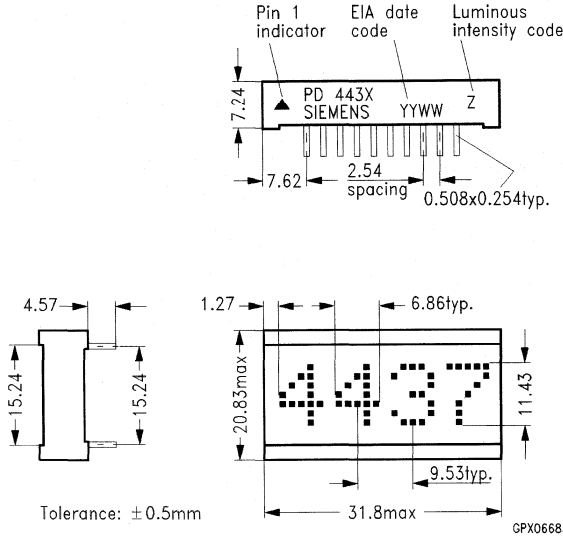
6PX06756

Pin	Function
1	$\overline{RD}$ Read
2	CLK I/O Clock I/O
3	CLK SEL Clock select
4	$\overline{RST}$ Reset
5	$\overline{CE1}$ Chip enable
6	$\overline{CE0}$ Chip enable
7	A2 Address MSB
8	A1 Address
9	A0 Address LSB
10	GND Ground
11	$\overline{WR}$ Write
12	D7 Data MSB
13	D6 Data
14	D5 Data
15	D4 Data
16	D3 Data
17	D2 Data
18	D1 Data
19	D0 Data LSB
20	$V_{CC}$ Power supply



PD 4435, PD 4436, PD 4437

Bild/Figure 73



Pin	Function
1	$\overline{RD}$ Read
2	CLK I/O Clock I/O
3	CLK SEL Clock select
4	RST Reset
5	CE1 Chip enable
6	$\overline{CE0}$ Chip enable
7	A2 Address MSB
8	A1 Address
9	$\overline{A0}$ Address LSB
10	GND Ground
11	WR Write
12	D7 Data MSB
13	D6 Data
14	D5 Data
15	D4 Data
16	D3 Data
17	D2 Data
18	D1 Data
19	$\overline{D0}$ Data LSB
20	$V_{CC}$ Power supply

**Intelligente LED-Anzeigen**  
**Intelligent LED-Displays**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
⊙ PDSP 2110	Q68000-A8474	1				
⊙ PDSP 2111	Q68000-A8503	1				
⊙ PDSP 2112	Q68000-A8504	1				
⊙ PDSP 2113	Q68000-A8505	1				
▼⊙ PDSP 2114	Q68000-A8533	1				

**Programmierbare Punktmatrix-Anzeigen mit 256-ASCII-Zeichen**

Alphanumerische 5 × 7-Punktmatrix-Anzeigen mit Speicher, Dekoder und Treiber  
Versorgungsspannung  $V_{CC} = 5,0 \text{ V} \pm 10 \%$

Typ. Lichtstärke pro Punkt:  $I_V = 0,15 \text{ mcd}$  bis  $0,375 \text{ mcd}$  (bei  $V_{CC} = 5 \text{ V}$ , Durchschnitt)  
Betriebstemperatur:  $-40 \dots +85 \text{ }^\circ\text{C}$

**Programmable dot-matrix displays with 256 ASCII characters**

Alphanumeric 5 × 7 dot-matrix displays including memory, decoder and driver  
Power supply  $V_{CC} = 5.0 \text{ V} \pm 10\%$

Typ. luminous intensity per dot:  $I_V = 0.15 \text{ mcd}$  to  $0.375 \text{ mcd}$  (at  $V_{CC} = 5 \text{ V}$ , average)  
Operating temperature range:  $-40 \dots +85 \text{ }^\circ\text{C}$

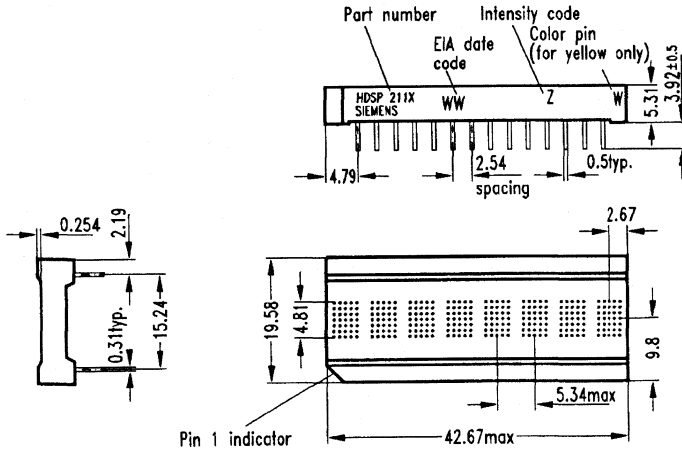
**Gehäuse: Plastik**

**Package: Plastic**

Typ Type	Farbe Colour	Symbolhöhe Character Height mm	Stellen Digits	Punkte pro Stelle Dots per Digit	Sichtwinkel x/y Achse Viewing Angle x/y Axis Grad Degrees	Bild Fig.
⊙ PDSP 2110	red	4.80	8	5 × 7	± 55/± 65	74
⊙ PDSP 2111	yellow	4.80	8	5 × 7	± 55/± 65	74
⊙ PDSP 2112	orange	4.80	8	5 × 7	± 55/± 65	74
⊙ PDSP 2113	green	4.80	8	5 × 7	± 55/± 65	74
▼⊙ PDSP 2114	high efficiency green	4.80	8	5 × 7	± 55/± 65	74

PDSP 2110, -2111, -2112, -2113, -2114

Bild/Figure 74



Tolerance:  $\pm 0.25\text{mm}$

GPX06834

8

Pin	Function
1	RST Used for initialization of a display and synchronization of blinking for multiple displays
2	FL Low input accesses the Flash RAM
3	A0 Address Input LSB
4	A1 Address Input
5	A2 Address Input MSB
6	A3 Mode selector
7	Substr. bias
8	Substr. bias
9	Substr. bias
10	Not connected
11	CLK SEL Selects Internal/External
12	CLK I/O Outputs master clock or inputs
13	WR A low will write data into the display if $\overline{\text{CE}} = 0$
14	V <sub>CC</sub> Positive power supply input
15	GND Analog Ground for LED drivers
16	GND Digital Ground for internal
17	CE Enables access to the display
18	Not connected
19	D0 Data input (LSB)
20	D1 Data input
21	No pin
22	No pin
23	D2 Data input
24	D3 Data input
25	D4 Data input
26	D5 Data input
27	D6 Data input
28	D7 Data input MSB

**Intelligente LED-Anzeigen**  
**Intelligent LED-Displays**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
▼ ○ HDSP 2110 S	Q68000-A8560	1				
▼ ○ HDSP 2111 S	Q68000-A8561	1				
▼ ○ HDSP 2112 S	Q68000-A8562	1				
▼ ○ HDSP 2113 S	Q68000-A8563	1				
▼ ○ HDSP 2114 S	Q68000-A8564	1				

**Programmierbare Punktmatrix-Anzeigen mit 128-ASCII-Zeichen und zusätzlich 16 frei-programmierbaren Zeichen**

Alphanumeric 5 × 7-Punktmatrix-Anzeigen mit Speicher, Dekoder und Treiber  
Versorgungsspannung  $V_{CC} = 5.0 V \pm 10 \%$   
Betriebstemperatur:  $-40 \dots +85 \text{ }^\circ\text{C}$

**Programmable dot-matrix displays with 128 ASCII characters and 16 user definable characters**

Alphanumeric 5 × 7 dot-matrix displays including memory, decoder and driver  
Power supply  $V_{CC} = 5.0 V \pm 10\%$   
Operating temperature range:  $-40 \dots +85 \text{ }^\circ\text{C}$

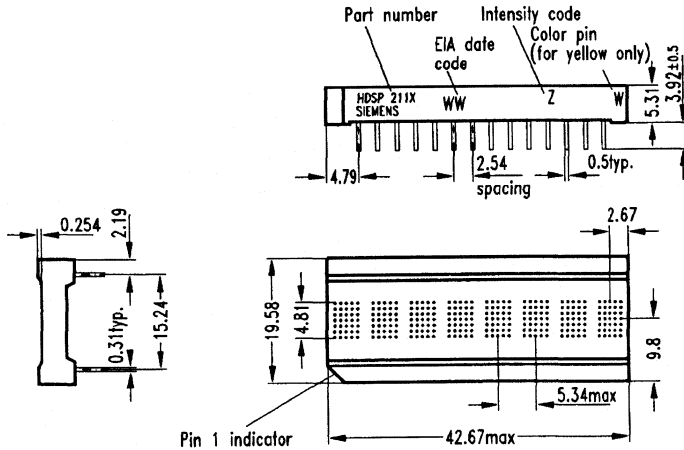
**Gehäuse: Plastik**

**Package: Plastic**

Typ Type	Farbe Colour	Symbolhöhe Character Height mm	Stellen Digits	Punkte pro Stelle Dots per Digit	Sichtwinkel x/y Achse Viewing Angle x/y Axis	Bild Fig.
					Grad Degrees	
▼ ○ HDSP 2110 S	red	4.80	8	5 × 7	± 55/± 65	75
▼ ○ HDSP 2111 S	yellow	4.80	8	5 × 7	± 55/± 65	75
▼ ○ HDSP 2112 S	orange	4.80	8	5 × 7	± 55/± 65	75
▼ ○ HDSP 2113 S	green	4.80	8	5 × 7	± 55/± 65	75
▼ ○ HDSP 2114 S	high efficiency green	4.80	8	5 × 7	± 55/± 65	75

HDSP 2110 S, -2111 S, -2112 S, -2113 S, -2114 S

Bild/Figure 75



Tolerance:  $\pm 0.25\text{mm}$

CPX06834

8

Pin	Function
1	RST Used for initialization of a display and synchronization of blinking for multiple displays
2	FL Low input accesses the Flash RAM
3	A0 Address input LSB
4	A1 Address input
5	A2 Address input MSB
6	A3 Mode selector
7	Substr. bias
8	Substr. bias
9	Substr. bias
10	A4 Mode selector
11	CLK SEL Selects internal/external clock source
12	CLK I/O Outputs master clock or inputs external clock
13	WR A low will write data into the display if CE is low
14	V <sub>CC</sub> Positive power supply input
15	GND Analog Ground for LED drivers
16	GND Digital Ground for internal logic
17	CE Enables access to the display
18	RD A low will read data from the display if $\overline{\text{CE}}$ is low
19	D0 Data input (LSB)
20	D1 Data input
21	No pin
22	No pin
23	D2 Data input
24	D3 Data input
25	D4 Data input
26	D5 Data input
27	D6 Data input
28	D7 Data input MSB, selects ROM, page 1 or 2

**Intelligente LED-Anzeigen**  
**Intelligent LED-Displays**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
▼ ○ SLG 2016	Q68000-A8642	2				
▼ ○ SLO 2016	Q68000-A8641	2				
▼ ○ SLR 2016	Q68000-A8640	2				
▼ ○ SLY 2016	Q68000-A8643	2				

**Programmierbare Punktmatrix-Anzeigen mit 128-ASCII-Zeichen in SLIMLINE-Gehäuse**

Alphanumerische 5 × 7-Punktmatrix-Anzeigen mit Speicher, Dekoder und Treiber  
extrem kompakte Gehäuseabmessungen (10 × 20 mm Gehäuseoberfläche)  
Versorgungsspannung  $V_{CC} = 5,0 \text{ V} \pm 10 \%$   
Betriebstemperatur: - 40 ... + 85 °C

**Programmable dot-matrix displays with 128 ASCII characters in SLIMLINE package**

Alphanumeric 5 × 7 dot-matrix displays including memory, decoder and driver  
optimum display surface efficiency  
Power supply  $V_{CC} = 5.0 \text{ V} \pm 10\%$   
Operating temperature range: - 40 ... + 85 °C

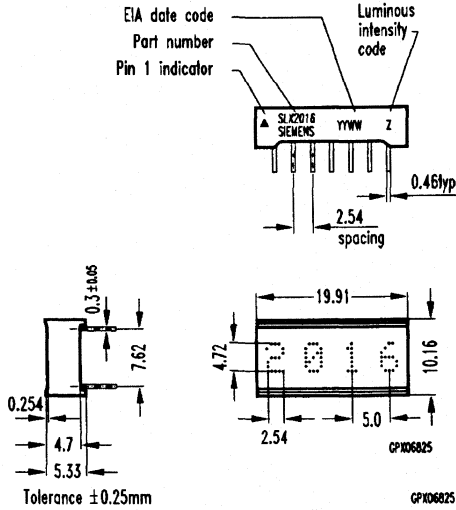
**Gehäuse: Plastik**

**Package: Plastic**

Typ Type	Farbe Colour	Symbolhöhe Character Height mm	Stellen Digits	Punkte pro Stelle Dots per Digit	Sichtwinkel x/y Achse Viewing Angle x/y Axis	Bild Fig.
					Grad Degrees	
▼ ○ SLR 2016	red	4.72	4	5 × 7	± 55/± 65	76
▼ ○ SLO 2016	orange	4.72	4	5 × 7	± 55/± 65	76
▼ ○ SLG 2016	green	4.72	4	5 × 7	± 55/± 65	76
▼ ○ SLY 2016	yellow	4.72	4	5 × 7	± 55/± 65	76

SLR 2016, SLO 2016, SLG 2016, SLY 2016

Bild/Figure 76



Pin	Function
1	WR Write
2	A1 Digit Select
3	A0 Digit Select
4	V <sub>CC</sub>
5	D0 Data
6	D1 Data
7	D2 Data
8	D3 Data
9	D4 Data
10	D5 Data
11	D6 Data
12	BL Display Blank
13	CLR Clear
14	GND

**Intelligente LED-Anzeigen**  
**Intelligent LED-Displays**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
▼ ○ SCD 5580	Q68000-A8630	1				
▼ ○ SCD 5581	Q68000-A8631	1				
▼ ○ SCD 5582	Q68000-A8632	1				
▼ ○ SCD 5583	Q68000-A8633	1				
▼ ○ SCD 5584	Q68000-A8634	1				
▼ ○ SCD 55100	Q68000-A8635	1				
▼ ○ SCD 55101	Q68000-A8636	1				
▼ ○ SCD 55102	Q68000-A8637	1				
▼ ○ SCD 55103	Q68000-A8638	1				
▼ ○ SCD 55104	Q68000-A8639	1				

**Punkt-adressierbare Anzeigen mit 5 × 5 Punktmatrix in SLIMLINE-Gehäuse und mit seriellem Dateneingang**

extrem kompakte Gehäuseoberfläche (38,1 × 10 mm)  
benötigt bei gleicher Helligkeit 30 % weniger Leistung als eine 5 × 7 Punktmatrix  
ROM-lose punktadressierbare Anzeige – ideal für Anwendungen mit benutzerdefinierbaren Zeichen mit Decoder, Multiplexer LED-Treiber und 200- bzw. 250 bit RAM  
8 Helligkeitsniveaus  
zu längeren Zeilen und mehrzeiligen Anzeigen aneinanderreihbar

**Dot addressable intelligent display with 5 × 5 dot matrix (SLIMLINE-package) and serial input**

optimum display surface efficiency (display area to package ratio)  
low power – 30 % less power than 5 × 7 format  
ROMless serial input, dot addressable display – ideal for user defined characters  
built-in decoders, multiplexers, LED drivers and a 200- or 250 bit RAM  
8 different intensity levels  
end-stackable dual-in-line plastic package

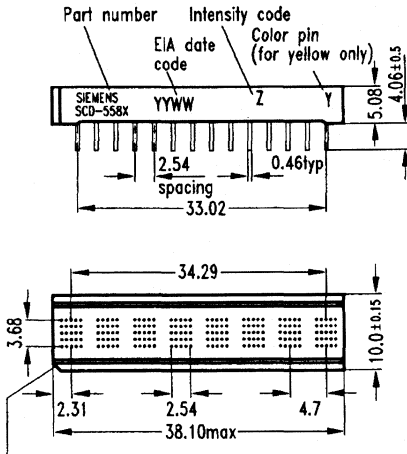
Typ Type	Farbe Colour	Symbolhöhe Character Height mm	Stellen Digits	Punkte pro Stelle Dots per Digit	Sichtwinkel x/y Achse Viewing Angle x/y Axis Grad Degrees	Bild Figure
▼ ○ SCD 5580	red	3.68	8	5 × 5	± 55/± 65	77
▼ ○ SCD 5581	yellow	3.68	8	5 × 5	± 55/± 65	77
▼ ○ SCD 5582	orange	3.68	8	5 × 5	± 55/± 65	77
▼ ○ SCD 5583	green	3.68	8	5 × 5	± 55/± 65	77
▼ ○ SCD 5584	HEG*)	3.68	8	5 × 5	± 55/± 65	77
▼ ○ SCD 55100	red	3.68	10	5 × 5	± 55/± 65	78
▼ ○ SCD 55101	yellow	3.68	10	5 × 5	± 55/± 65	78
▼ ○ SCD 55102	orange	3.68	10	5 × 5	± 55/± 65	78
▼ ○ SCD 55103	green	3.68	10	5 × 5	± 55/± 65	78
▼ ○ SCD 55104	HEG*)	3.68	10	5 × 5	± 55/± 65	78

\*) High efficiency green



SCD 5580, -5581, -5582, -5583, -5584

Bild/Figure 77



Pin 1 indicator

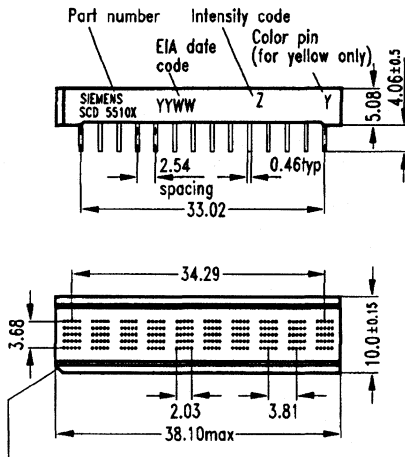
CPX06826

8

Pin	Function
1	SDCLK Used for loading data into the 8-bit serial data register on a low to high transition.
2	LOAD Low input enables data clocking into 8-bit serial shift register. When LOAD goes high, the contents of 8-bit serial Shift Register will be decoded.
3	NC No connection
4	NC No connection
5	NC No connection
6	V <sub>CC</sub> Power supply/heat sink
7	V <sub>CC</sub> Power supply/heat sink
8	V <sub>CC</sub> Power supply/heat sink
9	V <sub>CC</sub> Power supply/heat sink
10	NC No connection
11	NC No connection
12	NC No connection
13	RST Asynchronous input, when low will clear the Multiplex Counter, User RAM and Data Register. Control Word Register is set to 100 % brightness and the Address Register is set to select Digit 0. The display is blanked
14	GND Power supply ground
15	CLK I/O Outputs master clock or inputs external clock
16	CLKSEL H = internal clock, L = external clock
17	NC No connection
18	NC No connection
19	V <sub>CC</sub> Power supply/heat sink
20	V <sub>CC</sub> Power supply/heat sink
21	V <sub>CC</sub> Power supply/heat sink
22	V <sub>CC</sub> Power supply/heat sink
23	V <sub>CC</sub> Power supply/heat sink
24	NC No connection
25	NC No connection
26	NC No connection
27	DATA Serial data input
28	GND Power supply ground

SCD 55100, -55101, -55102, -55103, -55104

Bild/Figure 78



Pin 1 indicator

GPX06827

Pin	Function
1	<b>SDCLK</b> Used for loading data into the 8-bit serial data register on a low to high transition.
2	<b>LOAD</b> Low input enables clocking of data into 8-bit serial shift register. When LOAD goes high the contents of 8-bit serial shift Register will be decoded.
3	No connect
4	No connect
5	No connect
6	V <sub>CC</sub>
7	V <sub>CC</sub>
8	V <sub>CC</sub>
9	V <sub>CC</sub>
10	No connect
11	No connect
12	No connect
13	<b>RST</b> Asynchronous input, when low will clear the Multiplex Counter, User RAM and Data Register. Control Word Register is set to logic zero. The display is blanked
14	<b>GND</b> Power supply ground
15	<b>CLK I/O</b> Outputs master clock or inputs external clock
16	<b>CLKSEL</b> H = internal clock, L = external clock
17	No connect
18	No connect
19	V <sub>CC</sub>
20	V <sub>CC</sub>
21	V <sub>CC</sub>
22	V <sub>CC</sub>
23	V <sub>CC</sub>
24	No connect
25	No connect
26	No connect
27	<b>Data</b> Serial data input
28	<b>GND</b> Power supply ground

**LED-Anzeigen mit Schieberegister**  
**LED-Displays with Shift Register**

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.				
			min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 249
		Min.				
⊙ HDSP 2000 LP	Q68000-A8131	2				
⊙ HDSP 2001 LP	Q68000-A8304	1				
⊙ HDSP 2002 LP	Q68000-A8132	1				
⊙ HDSP 2003 LP	Q68000-A8133	1				
⊙ HDSP 2300 LP	Q68000-A8402	2				
⊙ HDSP 2301 LP	Q68000-A8403	1				
⊙ HDSP 2302 LP	Q68000-A8404	1				
⊙ HDSP 2303 LP	Q68000-A8405	1				

**Punktmatrix-Anzeigen (SAMSAN-Serie) mit frei wählbarem Zeichensatz**

Alphanumerische 5 × 7-Punktmatrix-Anzeigen mit Schieberegister und Zeilentreibern in CMOS-Technologie, dadurch geringerer Stromverbrauch

Serialer Eingang/paralleler Ausgang

Versorgungsspannung  $V_{CC} = 5 V_{CC} (-10\%, +20\%)$

Betriebstemperatur:  $-55 \dots +100 \text{ }^\circ\text{C}$  ( $-45 \dots +85 \text{ }^\circ\text{C}$  für Plastikgehäuse)

**Dot-matrix displays (SAMSAN series), free selection of character set**

Alphanumeric 5 × 7 dot-matrix displays with shift register and line drivers in CMOS technology, therefore low energy consumption.

Serial input/parallel output

Power supply  $V_{CC} = 5 V_{CC} (-10\%, +20\%)$

Operating temperature range:  $-55 \dots +100 \text{ }^\circ\text{C}$  ( $-45 \dots +85 \text{ }^\circ\text{C}$  for plastic packages)

**Gehäuse: Plastik**

**Package: Plastic**

Typ Type	Farbe Colour	Symbolhöhe Character Height	Stellen Digits	Punkte pro Stelle Dots per Digit	Sichtwinkel x/y Achse Viewing Angle x/y Axis	Bild Fig.
					Grad Degrees	
		mm				
⊙ HDSP 2000 LP	red	3.71	4	5 × 7	± 50/± 75	79
⊙ HDSP 2001 LP	yellow	3.71	4	5 × 7	± 50/± 75	79
⊙ HDSP 2002 LP	orange	3.71	4	5 × 7	± 50/± 75	79
⊙ HDSP 2003 LP	green	3.71	4	5 × 7	± 50/± 75	79
⊙ HDSP 2300 LP	red	4.88	4	5 × 7	± 50/± 75	80
⊙ HDSP 2301 LP	yellow	4.88	4	5 × 7	± 50/± 75	80
⊙ HDSP 2302 LP	orange	4.88	4	5 × 7	± 50/± 75	80
⊙ HDSP 2303 LP	green	4.88	4	5 × 7	± 50/± 75	80



**LED-Anzeigen mit Schieberegister**  
**LED-Displays with Shift Register**

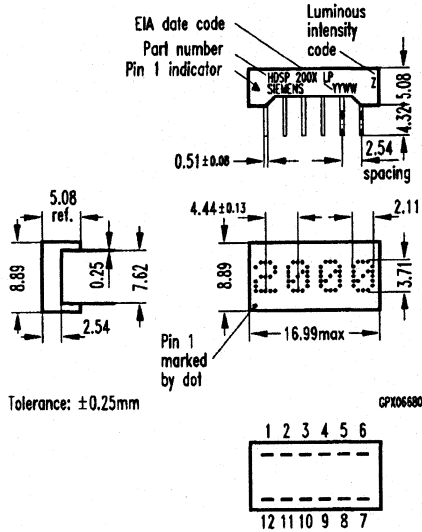
Typ Type	Bestellnummer Ordering Code	Stck. Pcs.			
			min. bis/to 9	10 bis/to 24	25 bis/to 99
		Min.			
⊙ ISD 2010	Q68000-A8134	1			
⊙ ISD 2011	Q68000-A8135	1			
⊙ ISD 2012	Q68000-A8136	1			
⊙ ISD 2013	Q68000-A8137	1			
⊙ ISD 2310	Q68000-A8138	1			
⊙ ISD 2311	Q68000-A8139	1			
⊙ ISD 2312	Q68000-A8140	1			
⊙ ISD 2313	Q68000-A8141	1			
⊙ ISD 2351	Q68000-A8142	1			
⊙ ISD 2352	Q68000-A8143	1			
⊙ ISD 2353	Q68000-A8144	1			

**Gehäuse: Plastik**  
**Package: Plastic**

Typ Type	Farbe Colour	Symbolhöhe Character Height	Stellen Digits	Punkte pro Stelle Dots per Digit	Sichtwinkel x/y Achse Viewing Angle x/y Axis	Bild Fig.
		mm			Grad Degrees	
⊙ ISD 2010	red	3.71	4	5 × 7	± 50/± 65	81
⊙ ISD 2011	yellow	3.71	4	5 × 7	± 50/± 65	81
⊙ ISD 2012	orange	3.71	4	5 × 7	± 50/± 65	81
⊙ ISD 2013	green	3.71	4	5 × 7	± 50/± 65	81
⊙ ISD 2310	red	4.88	4	5 × 7	± 50/± 65	82
⊙ ISD 2311	yellow	4.88	4	5 × 7	± 50/± 65	82
⊙ ISD 2312	orange	4.88	4	5 × 7	± 50/± 65	82
⊙ ISD 2313	green	4.88	4	5 × 7	± 50/± 65	82
⊙ ISD 2351	yellow	4.88	4	5 × 7	± 50/± 65	83
⊙ ISD 2352	orange	4.88	4	5 × 7	± 50/± 65	83
⊙ ISD 2353	green	4.88	4	5 × 7	± 50/± 65	83

HDSP 2000 LP, -2001 LP, -2002 LP, -2003 LP

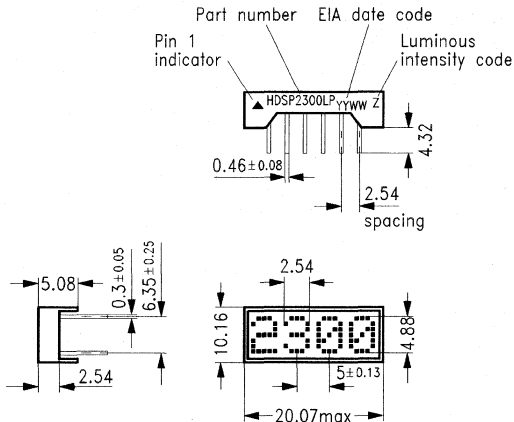
Bild/Figure 79



Pin	Function
1	Column 1
2	Column 2
3	Column 3
4	Column 4
5	Column 5
6	Not connected
7	Data output
8	Brightness control ( $V_B$ )
9	Power supply ( $V_{CC}$ )
10	Clock
11	Ground
12	Data input

**HDSP 2300 LP, -2301 LP, -2302 LP, -2303 LP**

**Bild/Figure 80**



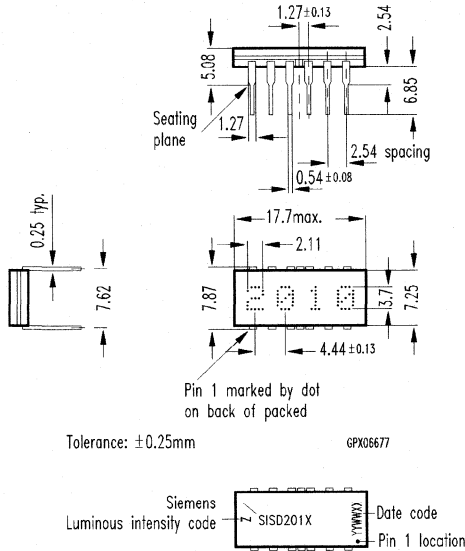
Tolerance: ± 0.38

GPX06681

Pin	Function
1	Column 1
2	Column 2
3	Column 3
4	Column 4
5	Column 5
6	Not connected
7	Data output
8	Brightness control ( $V_B$ )
9	Power supply ( $V_{CC}$ )
10	Clock
11	Ground
12	Data input

ISD 2010, -2011, -2012, -2013

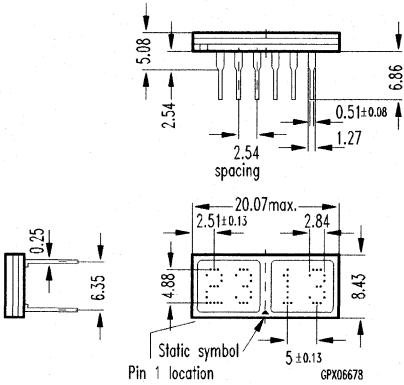
Bild/Figure 81



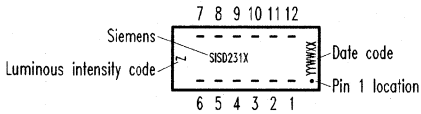
Pin	Function
1	Column 1
2	Column 2
3	Column 3
4	Column 4
5	Column 5
6	Not connected
7	Data output
8	Brightness control ( $V_B$ )
9	Power supply ( $V_{CC}$ )
10	Clock
11	Ground
12	Data input

**ISD 2310, -2311, -2312, -2313**

**Bild/Figure 82**



Tolerance:  $\pm 0.25\text{mm}$

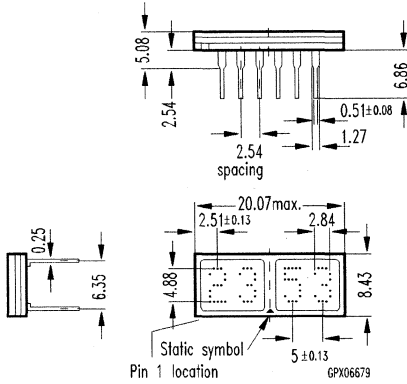


Pin	Function
1	Column 1
2	Column 2
3	Column 3
4	Column 4
5	Column 5
6	Not connected
7	Data output
8	Brightness control ( $V_B$ )
9	Power supply ( $V_{CC}$ )
10	Clock
11	Ground
12	Data input

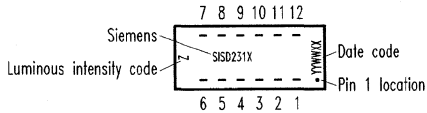


**ISD 2351, -2352, -2353**

**Bild/Figure 83**



Tolerance:  $\pm 0.25\text{mm}$



Pin	Function
1	Column 1
2	Column 2
3	Column 3
4	Column 4
5	Column 5
6	Not connected
7	Data output
8	Brightness control ( $V_B$ )
9	Power supply ( $V_{CC}$ )
10	Clock
11	Ground
12	Data input

**Infrarot-Emitter (IRED)**  
**Infrared Emitter (IRED)**

Typ Type	$I_e$ $I_F = 100$ mA $t_p = 20$ ms  mW/sr	$\varphi$ für/for $0.5 I_{e \max}$ Grad Degrees	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499

**GaAs-Lumineszenzdioden;  $I_R = 0,01 (\leq 1) \mu\text{A}$ ; bei  $V_R = 5$  V**

**GaAs Infrared Emitters;  $I_R = 0.01 (\leq 1) \mu\text{A}$ ; at  $V_R = 5$  V**

▼ LD 242	4 ... 12.5	$\pm 40$	84	Q62703- -Q151	30			
LD 242-2	4 ... 8	$\pm 40$	84	-Q198	30			
▼ LD 242-3	6.3 ... 12.5	$\pm 40$	84	-Q199	30			
▼ LD 242-LE-7800	1 ... 2	$\pm 40$	84	-Q2157	30			
▼ LD 242-ME-7800	1.6 ... 3.2	$\pm 40$	84	-Q2158	30			
▼ LD 261	2.0 ... 6.3	$\pm 30$	85	-Q395	40			
LD 261-4	2 ... 4	$\pm 30$	85	-Q66	40			
LD 261-5	3.2 ... 6.3	$\pm 30$	85	-Q67	40			
▼ LD 261-6	$\geq 5^2)$	$\pm 30$	85	-Q236	40			
LD 271	15 ( $\geq 10$ )	$\pm 25$	86	-Q148	200			
▼ LD 271-H	$\geq 16$	$\pm 25$	86	-Q256	200			
▼ LD 271-L	15 ( $\geq 10$ )	$\pm 25$	87	-Q833	200			
▼ LD 271-LH	$\geq 16$	$\pm 25$	87	-Q838	200			
LD 273	$\geq 25$	$\pm 25$	88	-Q694	80			
▼ LD 274	30 ... 100	$\pm 10$	89	-Q1031	250			
LD 274-1	30 ... 60	$\pm 10$	89	-Q1818	250			
LD 274-2	50 ... 100	$\pm 10$	89	-Q1819	250			
▼ LD 274-3	$\geq 80$	$\pm 10$	89	-Q1820	250			
▼ LD 275	10 ... 32	$\pm 18$	90	-Q728	250			
LD 275-1	10 ... 20	$\pm 18$	90	-Q1919	250			
LD 275-2	16 ... 32	$\pm 18$	90	-Q1918	250			
LD 275-3	$\geq 25$	$\pm 18$	90	-Q1917	250			
				Q62702-				
▼ SFH 400	20 ... 32	$\pm 6$	91	-P96	20			
SFH 400-2	20 ... 40	$\pm 6$	91	-P783	20			
SFH 400-3	$\geq 32$	$\pm 6$	91	-P784	20			
▼ SFH 401	10 ... 16	$\pm 15$	92	-P97	20			
SFH 401-2	10 ... 20	$\pm 15$	92	-P786	20			
SFH 401-3	$\geq 16$	$\pm 15$	92	-P787	20			
▼ SFH 402	2.5 ... 4	$\pm 40$	93	-P98	20			
SFH 402-2	2.5 ... 5	$\pm 40$	93	-P789	20			
▼ SFH 402-3	$\geq 4$	$\pm 40$	93	-P790	20			
▼ SFH 405	2.5 ... 3.2 <sup>3)</sup>	$\pm 16$	94	-P835	50			
▼ SFH 405-2	$\leq 3.2^3)$	$\pm 16$	94	-P856	50			
▼ SFH 405-3	$\geq 2.5^3)$	$\pm 16$	94	-P857	50			

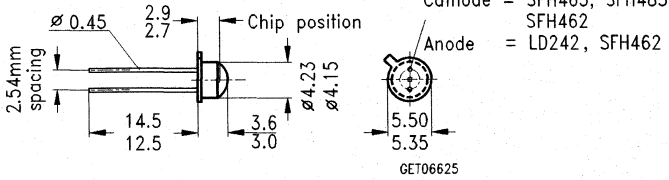
<sup>1)</sup> Gemessen mit HP Radiant Flux Meter 8334 A (Option 013), Meßabstand  $\geq 70$  mm;  $t_p = 20$  ms;  $I_F = 100$  mA  
Measured with HP radiant flux meter 8334 A (option 013), measuring distance  $\geq 70$  mm);  $t_p = 20$  ms;  $I_F = 100$  mA

<sup>2)</sup>  $I_F = 50$  mA

<sup>3)</sup>  $I_F = 40$  mA

**LD 242**

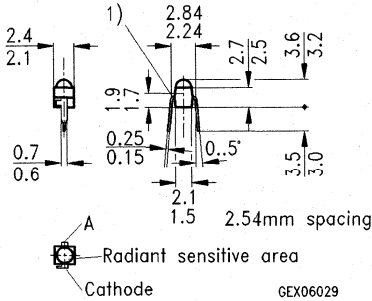
**Bild/Figure 84**



Approx. weight 0.5 g

**LD 261**

**Bild/Figure 85**

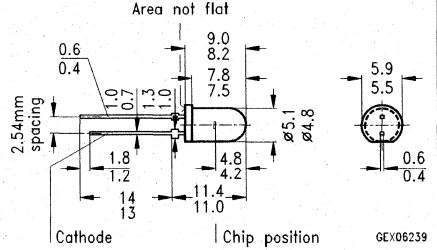


1) Detaching area for tools, flash not true to size.

Approx. weight 0.03 g

**LD 271, LD 271-H**

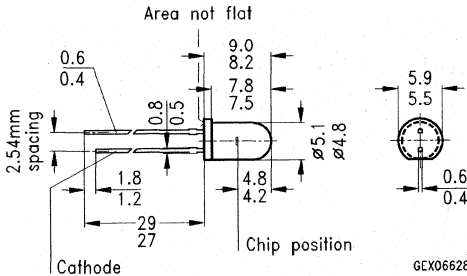
**Bild/Figure 86**



Approx. weight 0.5 g

**LD 271-L, LD 271-LH**

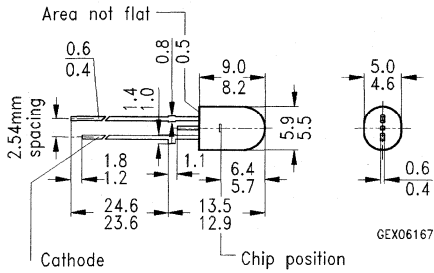
**Bild/Figure 87**



Approx. weight 0.5 g

**LD 273**

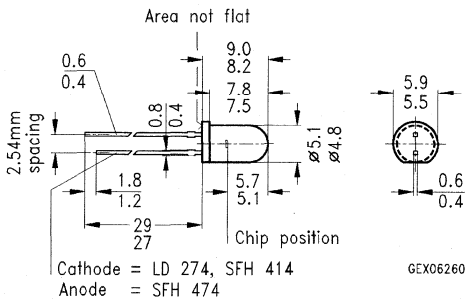
**Bild/Figure 88**



Approx. weight 0.4 g

**LD 274**

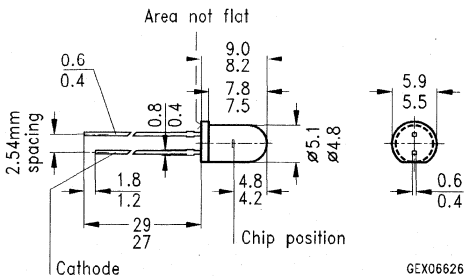
**Bild/Figure 89**



Approx. weight 0.5 g

**LD 275**

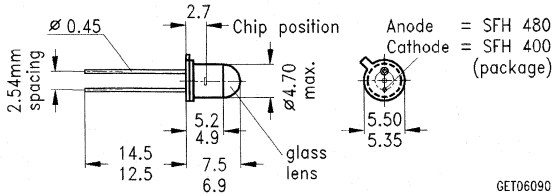
**Bild/Figure 90**



Approx. weight 0.5 g

**SFH 400**

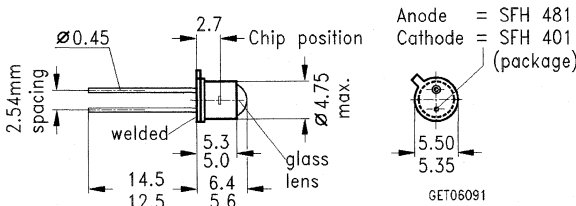
**Bild/Figure 91**



Approx. weight 0.35 g

**SFH 401**

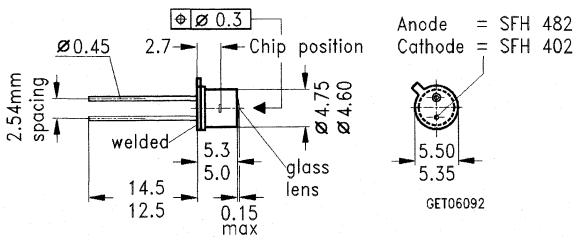
**Bild/Figure 92**



Approx. weight 0.35 g

**SFH 402**

**Bild/Figure 93**



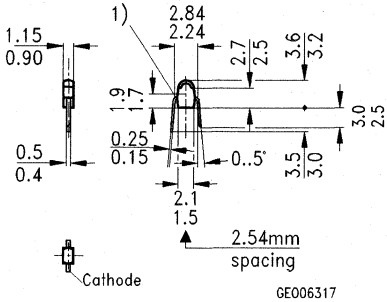
Approx. weight 0.35 g

**8**

# Opto-Halbleiter Opto-Semiconductors

SFH 405

Bild/Figure 94



GE006317

1) Detaching area for tools,  
flash not true to size.

Approx. weight 0.02 g

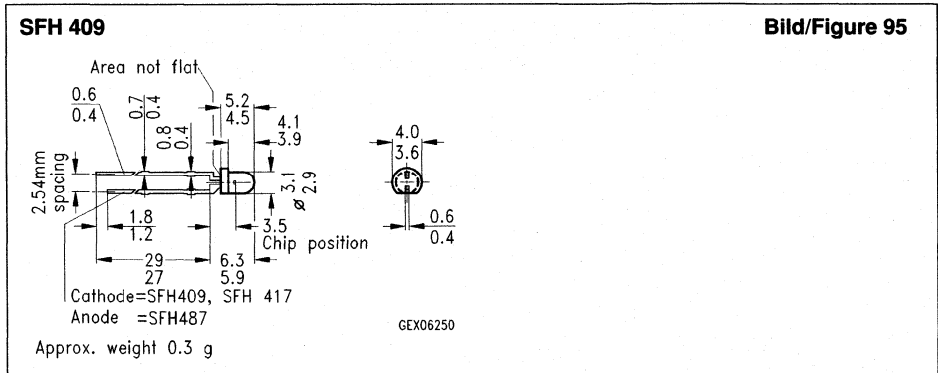
## Infrarot-Emitter (IRED) Infrared Emitter (IRED)

Typ Type	$I_e$ $I_F = 100 \text{ mA}$ $t_p = 20 \text{ ms}$ mW/sr	$\phi$ für/for 0.5 $I_e$ max Grad Degrees	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						Min.	50 bis/to 99	100 bis/to 499

GaAs-Lumineszenzdioden;  $I_R = 0.01 (\leq 1) \mu\text{A}$ ; bei  $V_R = 5 \text{ V}$  (Fortsetzung)

GaAs Infrared Emitters;  $I_R = 0.01 (\leq 1) \mu\text{A}$ ; at  $V_R = 5 \text{ V}$  (cont'd)

				Q62702-			
▼ SFH 409	6.3 ... 20	$\pm 20$	90	-P860	100		
SFH 409-1	6.3 ... 12.5	$\pm 20$	90	-P1001	100		
SFH 409-2	10 ... 20	$\pm 20$	90	-P1002	100		
SFH 409-3	$\geq 20$	$\pm 20$	90	-P1003	100		



**Infrarot-Emitter (IRED)**  
**Infrared Emitter (IRED)**

Typ Type	$I_e$ $I_F = 100 \text{ mA}$ $t_p = 20 \text{ ms}$ mW/sr	$\phi$ für/for $0.5 I_e \text{ max}$ Grad Degrees	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						50 bis/to 99	100 bis/to 499	500 bis/to 2999
					Min.			

**GaAs/GaAlAs-Lumineszenzdiodes;  $I_R = 0,01 (\leq 1) \mu\text{A}$ ; bei  $V_R = 5 \text{ V}$**   
**GaAs/GaAlAs Infrared Emitters;  $I_R = 0.01 (\leq 1) \mu\text{A}$ ; at  $V_R = 5 \text{ V}$**

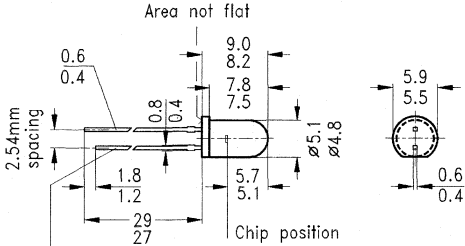
▼ SFH 414	25 ... 80	$\pm 11$	96	Q62702- -P890	250			
▼ SFH 414-T	25 ... 50	$\pm 11$	96	-P1154	250			
▼ SFH 414-U	40 ... 80	$\pm 11$	96	-P1155	250			
▼ SFH 415	16 ... 50	$\pm 17$	97	-P296	250			
SFH 415-S	16 ... 32	$\pm 17$	97	-P1135	250			
SFH 415-T	25 ... 50	$\pm 17$	97	-P1136	250			
SFH 415-U	$\geq 40$	$\pm 17$	97	-P1137	250			
▼ SFH 416	6.3 ... 20	$\pm 20$	98	-P297	250			
SFH 416-Q	6.3 ... 12	$\pm 28$	98	-P1138	250			
SFH 416-R	10 ... 20	$\pm 28$	98	-P1139	250			
SFH 416-S	$\geq 16$	$\pm 28$	98	-P1140	250			
▼ SFH 420-N	2.5 ... 5	$\pm 60$	99	-P1132	250			
▼ SFH 420-P	4 ... 8	$\pm 60$	99	-P1133	250			
▼ SFH 421-N	2.5 ... 5	$\pm 60$	99	Q62703- -Q2406	250			

■ = SMD (Surface Mounted Device)

<sup>1)</sup> Gemessen mit HP Radiant Flux Meter 8334 A (Option 013), Meßabstand  $\geq 70 \text{ mm}$ ;  $t_p = 20 \text{ ms}$ ;  $I_F = 100 \text{ mA}$ ;  
Measured with HP radiant flux meter 8334 A (option 013), measuring distance  $\geq 70 \text{ mm}$ ;  $t_p = 20 \text{ ms}$ ;  $I_F = 100 \text{ mA}$ ;

**SFH 414**

**Bild/Figure 96**



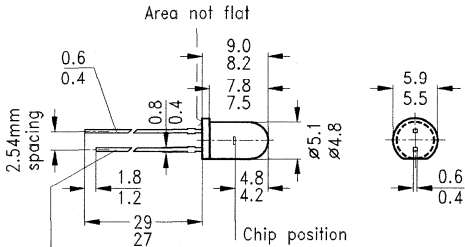
Cathode = LD 274, SFH 414  
 Anode = SFH 474

GEX06260

Approx. weight 0.5 g

**SFH 415**

**Bild/Figure 97**



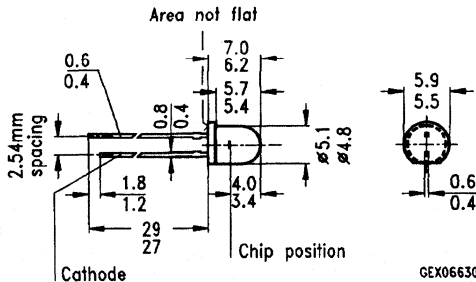
Cathode

GEX06626

Approx. weight 0.5 g

**SFH 416**

**Bild/Figure 98**



Cathode

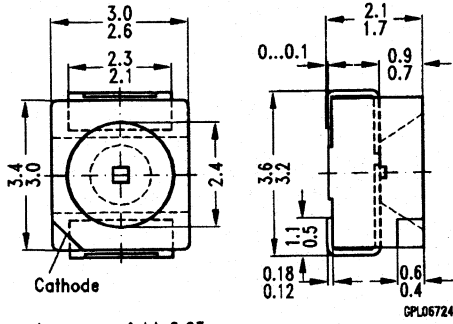
GEX06630

Approx. weight 0.4 g



SFH 420, SFH 421

Bild/Figure 99



Approx. weight 0.03 g

**Infrarot-Emitter (IRED)  
Infrared Emitter (IRED)**

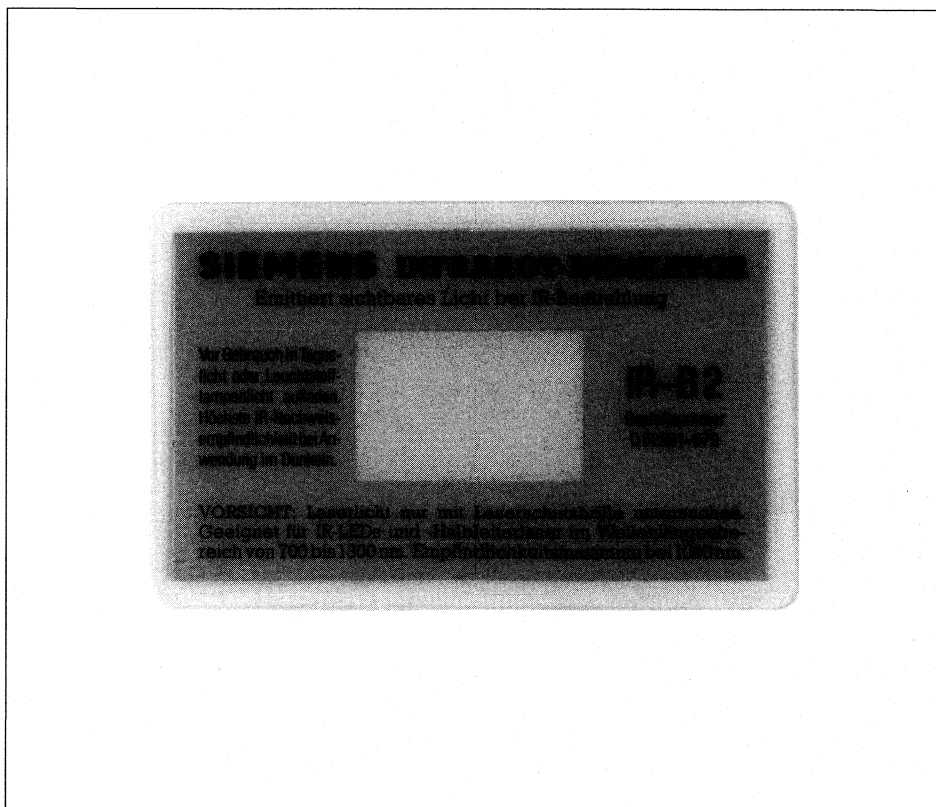
**Infrarotindikorkarte**

Bei Bestrahlung leuchtet die aktive Fläche orange auf, wodurch IR-Strahlung des Bereichs 780 – 1300 nm für das menschliche Auge sichtbar wird.

**Infrared Indicator**

When the active area is exposed to radiation it emits orange light, thus making infrared radiation between 780 and 1300 nm visible to the human eye.

Typ Type	Bestellnummer Ordering Code	Stck. Pcs.		
			min. bis/to 24	25 bis/to 50
IR-B2	Q62901-B79	2		



**Infrarot-Emitter (IRED)**  
**Infrared Emitter (IRED)**

Typ Type	$I_e$ $I_F = 50$ mA $t_p = 20$ ms  mW/sr	$\varphi$  Grad Degrees	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499

**GaAs-Lumineszenzdiodezellen;  $I_R = 0,01 (\leq 1) \mu\text{A}$ ; bei  $V_R = 3$  V**  
**GaAs Infrared Emitter Arrays;  $I_R = 0.01 (\leq 1) \mu\text{A}$ ; at  $V_R = 3$  V**

▼ LD 260	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	Q62703- -Q78	5			
LD 262	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	-Q70	20			
▼ LD 263	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	-Q71	20			
▼ LD 264	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	-Q72	10			
LD 265	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	-Q73	10			
▼ LD 266	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	-Q74	5			
▼ LD 267	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	-Q75	5			
LD 268	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	-Q76	5			
LD 269	$\geq 2.5 \dots \leq 8$	$\pm 30$	100	-Q77	5			

Typ Type	$I_e$ $I_F = 50$ mA $t_p = 20$ ms  mW/sr	$\varphi$ für/for $0.5 I_{e \max}$ Grad Degrees	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499

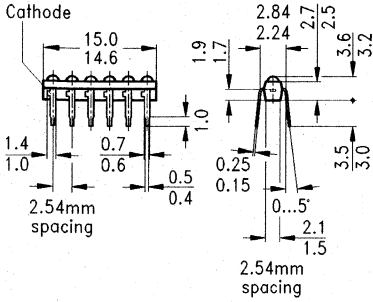
**GaAlAs-Infrarotstrahler;  $I_R = 0,01 (\leq 1) \mu\text{A}$ ; bei  $V_R = 3$  V**  
**GaAlAs Infrared Emitters;  $I_R = 0.01 (\leq 1) \mu\text{A}$ ; at  $V_R = 3$  V**

▼ SFH 462-K E7800 <sup>1)</sup>	0.63 ... 1.25	$\pm 23$	101	Q62702- -P332	20			
▼ SFH 462-L E7800 <sup>1)</sup>	1 ... 2	$\pm 23$	101	-P1116	10			

<sup>1)</sup> E7800  $\hat{=}$  Lochblendenmessung  
E7800  $\hat{=}$  Aperture measurement

**LD 262 ... LD 269**

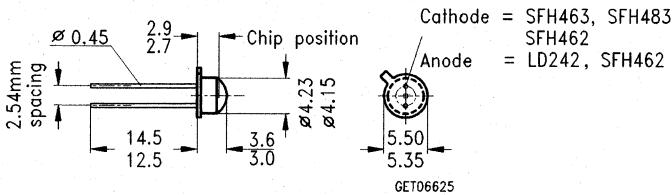
**Bild/Figure 100**



Sample with 6 diodes (e.g. LD 266)  
Approx. weight 0.12 g GEZ06365

**SFH 462**

**Bild/Figure 101**



Approx. weight 0.5 g

Infrarot-Emitter (IRED)  
Infrared Emitter (IRED)

Typ Type	$I_e$ $I_e = 100 \text{ mA}$ $t_p = 20 \text{ ms}$  mW/sr	$\varphi$ für/for $0.5 I_e \text{ max}$ Grad Degrees	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						Min.	min. bis/to 49	50 bis/to 99

**GaAIAs-Infrarotstrahler;  $I_R = 0,01 (\leq 1) \mu\text{A}$ ; bei  $V_R = 5 \text{ V}$**

**GaAIAs Infrared Emitters;  $I_R = 0.01 (\leq 1) \mu\text{A}$ ; at  $V_R = 5 \text{ V}$**

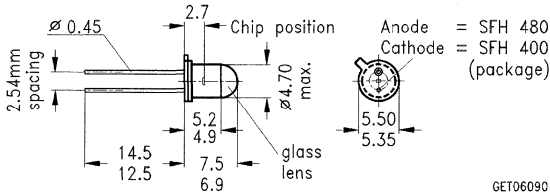
▼ SFH 480	25 ... 80	$\pm 6$	102	Q62703- -Q1087				
▼ SFH 480-1	25 ... 50	$\pm 6$	102	-Q1661				
SFH 480-2	40 ... 80	$\pm 6$	102	-Q1662				
▼ SFH 481	10 ... 32	$\pm 15$	103	-Q1088				
SFH 481-1	10 ... 20	$\pm 15$	103	-Q1664				
SFH 481-2	16 ... 32	$\pm 15$	103	-Q1665				
▼ SFH 481-3	$\leq 25$	$\pm 15$	103	-Q1666				
▼ SFH 482	3.15 ... 10	$\pm 30$	104	-Q1089				
SFH 482-1	3.15 ... 6.3	$\pm 30$	104	-Q1667				
SFH 482-2	5 ... 10	$\pm 30$	104	-Q1668				
▼ SFH 482-3	$\leq 8$	$\pm 30$	104	-Q1669				
▼ SFH 482-L E7800 <sup>1)</sup>	1 ... 2	$\pm 30$	104	-Q2185				
▼ SFH 482-M E7800 <sup>1)</sup>	1.6 ... 3.2	$\pm 30$	104	-Q2186				



<sup>1)</sup> E7800  $\hat{=}$  Lochblendenmessung  
E7800  $\hat{=}$  Aperture measurement

**SFH 480**

**Bild/Figure 102**

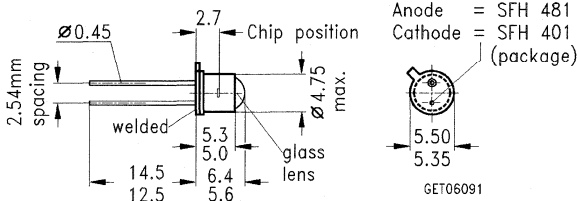


GET06090

Approx. weight 0.35 g

**SFH 481**

**Bild/Figure 103**

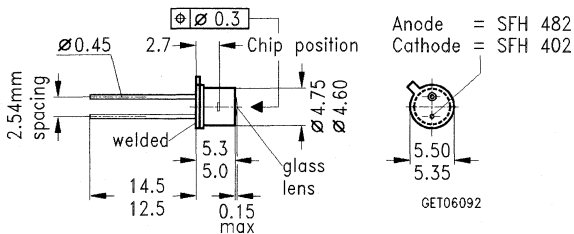


GET06091

Approx. weight 0.35 g

**SFH 482**

**Bild/Figure 104**



GET06092

Approx. weight 0.35 g

**Infrarot-Emitter (IRED)**  
**Infrared Emitter (IRED)**

Typ Type	$I_e$ $I_F = 100$ mA $t_p = 20$ ms mW/sr	$\phi$ für/for 0.5 $I_e$ max Grad Degrees	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						Min.	min. bis/to 49	50 bis/to 99

**GaAlAs-Infrarotstrahler;  $I_R = 0,01 (\leq 1) \mu\text{A}$ ; bei  $V_R = 5$  V (Fortsetzung)**

**GaAlAs Infrared Emitters;  $I_R = 0.01 (\leq 1) \mu\text{A}$ ; at  $V_R = 5$  V (cont'd)**

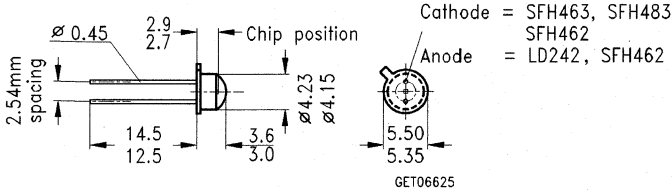
				Q62703-			
SFH 483-L E7800 <sup>1)</sup>	1 ... 2	$\pm 23$	105	-Q2162	20		
SFH 483-M E7800 <sup>1)</sup>	1.6 ... 3.2	$\pm 23$	105	-Q2163	20		
▼ SFH 484	50 ... 160	$\pm 8$	106	-Q1092	250		
SFH 484-1	50 ... 100	$\pm 8$	106	-Q1755	250		
SFH 484-2	80 ... 160	$\pm 8$	106	-Q1756	250		
▼ SFH 485	16 ... 50	$\pm 20$	107	-Q1093	250		
SFH 485-1	16 ... 32	$\pm 20$	107	-Q1546	250		
SFH 485-2	25 ... 50	$\pm 20$	107	-Q1547	250		
▼ SFH 485 P	3.15 ... 5	$\pm 40$	108	-Q516	250		
SFH 485 P-1	3.15 ... 6.3	$\pm 40$	108	-Q1758	250		
SFH 485 P-2	> 5	$\pm 40$	108	-Q754	250		
▼ SFH 487	12.5 ... 40	$\pm 20$	109	-Q1095	100		
SFH 487-1	12.5 ... 25	$\pm 20$	109	-Q2173	100		
SFH 487-2	20 ... 40	$\pm 20$	109	-Q2174	100		
▼ SFH 487 P	2 ... 3.15	$\pm 65$	110	-Q517	100		
SFH 487 P-1	2 ... 4	$\pm 65$	110	-Q1762	100		
SFH 487 P-2	> 3.15	$\pm 65$	110	-Q1763	100		



<sup>1)</sup> E7800  $\hat{=}$  Lochblendenmessung  
E7800  $\hat{=}$  Aperture measurement

**SFH 483**

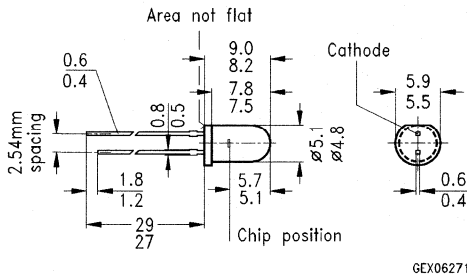
**Bild/Figure 105**



Approx. weight 0.5 g

**SFH 484**

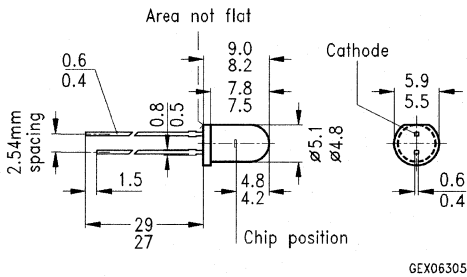
**Bild/Figure 106**



Approx. weight 0.5 g

**SFH 485**

**Bild/Figure 107**

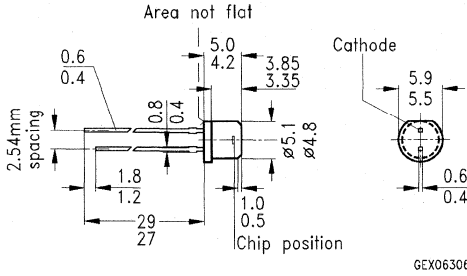


Approx. weight 0.5 g



**SFH 486P**

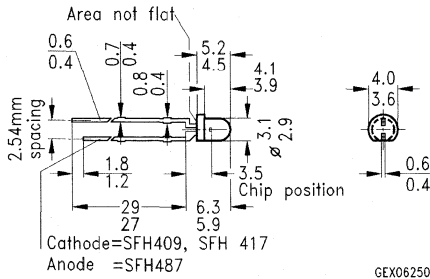
**Bild/Figure 108**



Approx. weight 0.5 g

**SFH 487**

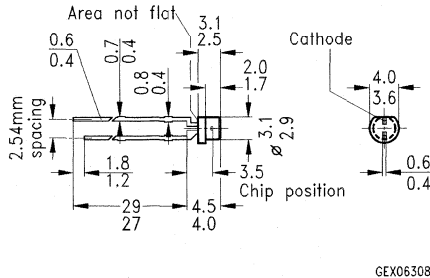
**Bild/Figure 109**



Approx. weight 0.3 g

**SFH 487P**

**Bild/Figure 110**



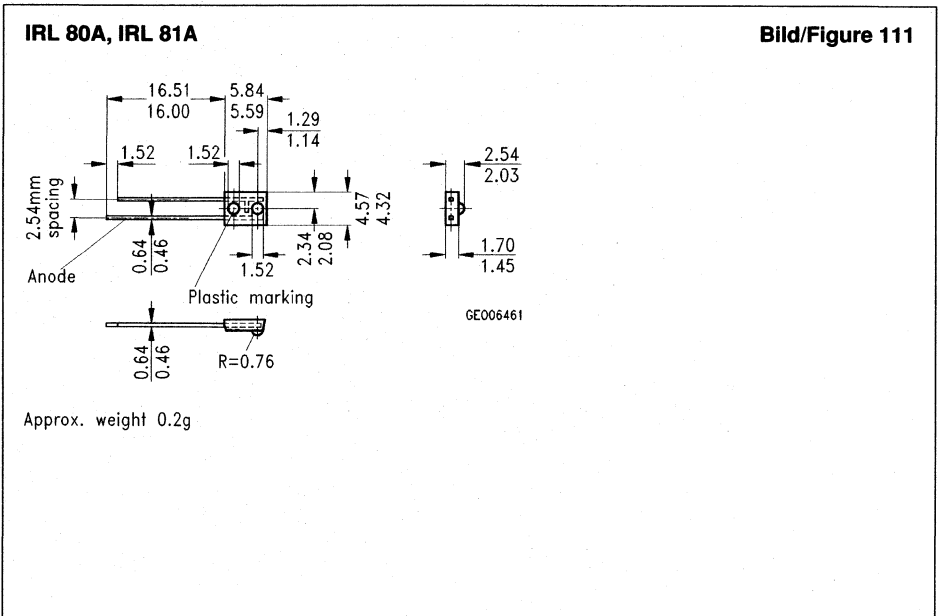
Approx. weight 0.3 g

# Optoalbleiter Opto-Semiconductors

Typ Type	$\lambda$ nm	$\varphi$ Grad Degrees	$I_e$ mW/sr	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.			
							min. bis/to 49	50 bis/to 99	100 bis/to 499

## IR-Lumineszenzdioden (Seitenstrahler) IR Emitters (Sidelooper)

IRL 80 A <sub>GaAs</sub>	950	30	$\geq 0.4$	111	Q68000- -A7851	100			
IRL 81 A <sub>GaAlAs</sub>	880	25	$\geq 1.0$	111	-A8000	100			

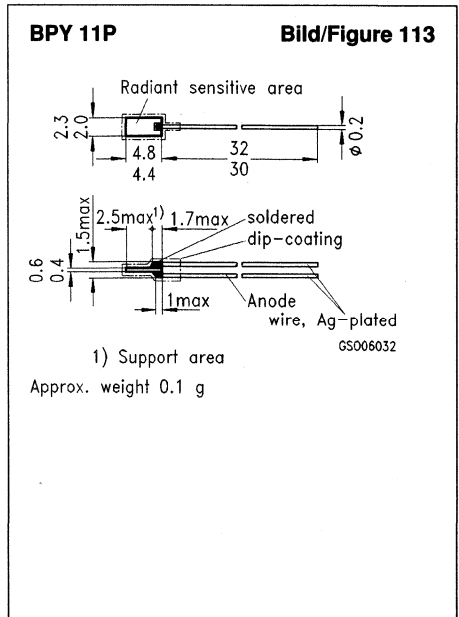
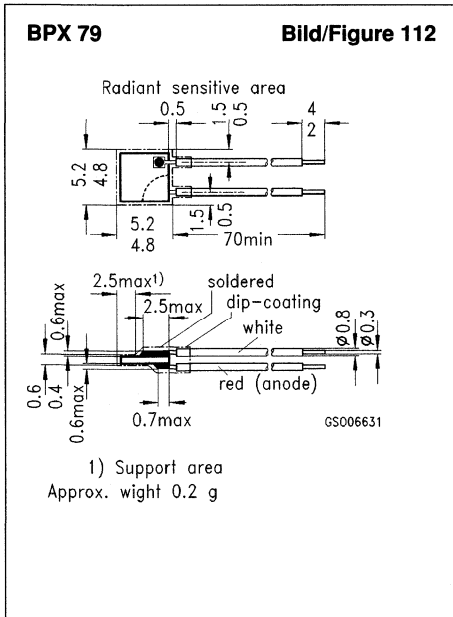


**Detektoren  
Detectors**

Typ Type	S nA Ix μA*	λ <sub>S</sub> max nm	V <sub>R</sub> V	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 49	50 bis/to 99	100 bis/to 499
						Min.			

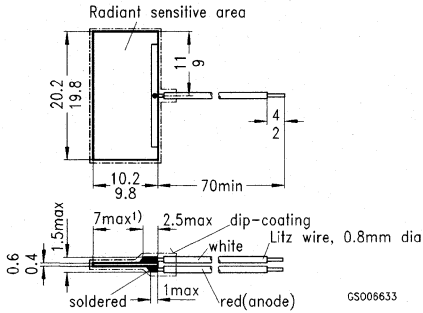
**Silizium-Fotoelemente  
Silicon Photovoltaic Cells**

BPX 79	170 (≥ 100)	800	1.0	112	Q62702- -P51	5			
BPY 11 P IV	55 (≥ 47)	850	1.0	113	Q60215- -Y1111-S4	20			
BPY 11 P V	60 (≥ 56)	850	1.0	113	-Y1111-S5	20			
BPY 47 P	1400 (≥ 900)	850	1.0	114	-Y66	2			
BPY 48 P	500 (≥ 350)	850	1.0	115	-Y65	3			
BPY 63 P	650 (≥ 450)	850	1.0	116	-Y63-S1	2			
BPY 64 P	250 (≥ 180)	850	1.0	117	-Y67	5			
▼ TP 60 P	1 (≥ 0.7)*	900	1.0	118	Q62607- -S60	2			
▼ TP 61 P	1 (≥ 0.7)*	900	1.0	119	-S61	2			



**BPY 47P**

**Bild/Figure 114**



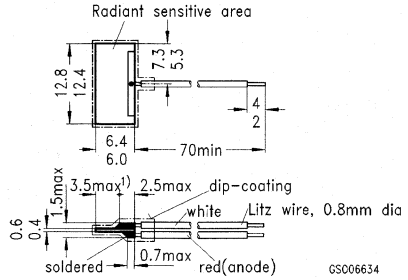
G5006633

1) Support area

Approx. weight 0.3 g

**BPY 48P**

**Bild/Figure 115**



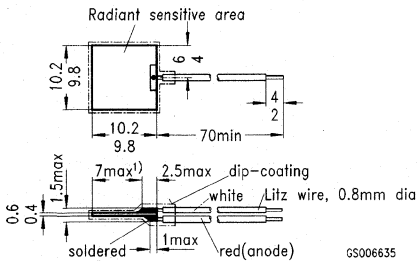
G5006634

1) Support area

Approx. weight 0.25 g

**BPY 63P**

**Bild/Figure 116**



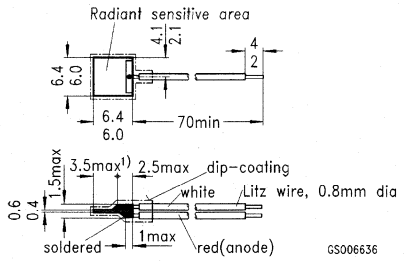
G5006635

1) Support area

Approx. weight 0.25 g

**BPY 64P**

**Bild/Figure 117**



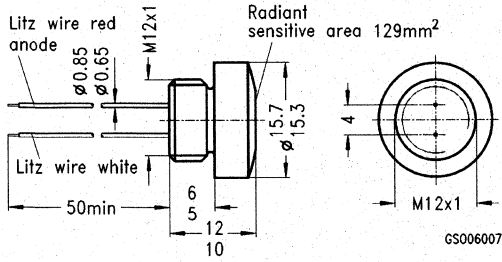
G5006636

1) Support area

Approx. weight 0.2 g

**TP 60 P**

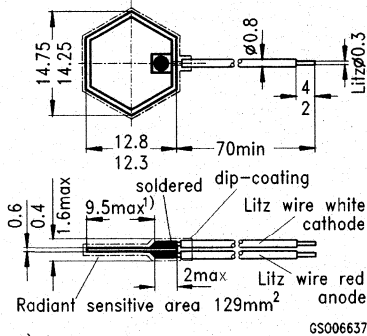
**Bild/Figure 118**



Approx. weight 1.8 g

**TP 61 P**

**Bild/Figure 119**



1) Support area

Approx. weight 0.3 g

# Optohalbleiter Opto-Semiconductors

## Detektoren Detectors

Typ Type	S	$\lambda_{S \text{ max}}$	$V_R$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
	nA Ix $\mu\text{A}^*$	nm	V				min. bis/to 49	50 bis/to 99	100 bis/to 499

### Silizium-Differential-Fotodiode Silicon Differential Photodiode

BPX 48	32 ( $\geq 15$ )	850	10	120	Q62702- -P17-S1	3			
▼ SFH 221 S	24 ( $\geq 15$ )	900	10	121	-P270	3			
▼ SFH 234 S	1.85 ( $\geq 1.2$ )	800	20	122	-P211	2			
▼ SFH 244 S	7.4 ( $\geq 4.8$ )	800	20	123	-P212	2			

### Silizium-4-Quadranten-Fotodiode Silicon Four Quadrant Photodiode

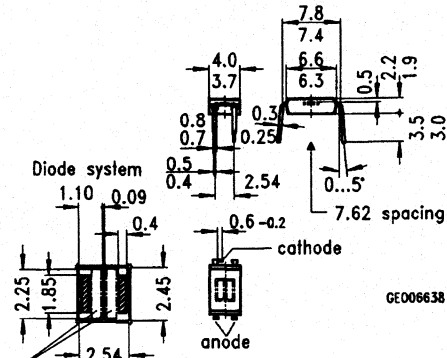
SFH 204	0.11 ( $\geq 0.08$ )	850	12	124	Q62702- -P89	3			
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### Silizium-Fotodioden Silicon Photodiodes

BP 104	17 ( $\geq 12.5$ )	950	20	125	Q62702- -P84	30			
▼ BP 104 BS	25 ( $\geq 15$ )*	950	32	126	-P917	30			
BPW 21	9 ( $\geq 5.5$ )	550	10	127	-P885	10			
BPW 32	10 ( $\geq 7$ )	800	7	128	-P74	10			
BPW 33	50 ( $\geq 35$ )	800	7	129	-P76	10			
BPW 34	70 ( $\geq 50$ )	850	32	129	-P73	30			
▼ BPW 34 B	75	850	32	129	-P945	20			
BPW 34 F	25 ( $\geq 15$ )*	950	20	129	-P929	30			
▼ BPW 34 FA	25 ( $\geq 15$ )*	880	32	129	-P1129	30			
BPX 60	50 ( $\geq 35$ )	850	32	130	-P54	10			
BPX 61	70 ( $\geq 50$ )	850	32	130	Q62705- -P25	10			
BPX 63	10 ( $\geq 0.8$ )	800	7	131	Q62702- -P55	10			
BPX 65	10 ( $\geq 7$ )	850	57	132	-P27	5			
BPX 66	9 ( $\geq 5$ )	850	50	132	-P80	5			
BPX 90	40 ( $\geq 25$ )	850	32	133	-P47	15			
▼ BPX 90 F	13 ( $\geq 8$ )*	950	32	133	-P928	15			
BPX 91 B	50 ( $\geq 35$ )	850	32	134	-P48-S	10			
▼ BPX 92	9.5 ( $\geq 4$ )	830	32	135	-P49	10			
BPY 12	$\geq 100$	850	20	136	-P9	2			
▼ BPY 12 H1	180 ( $\geq 100$ )*	920	20	137	-P1029	1			

**BPX 48**

**Bild/Figure 120**



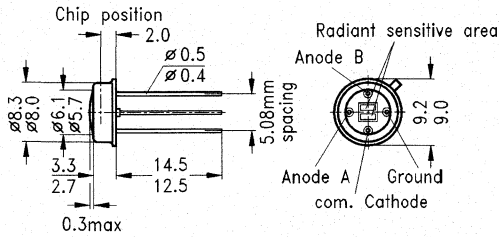
GE006638

Radiant sensitive area 2.0x1.64mm  
Approx. weight 0.1 g

**8**

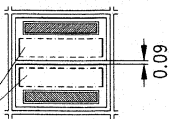
**SFH 221 S**

**Bild/Figure 121**



GM006639

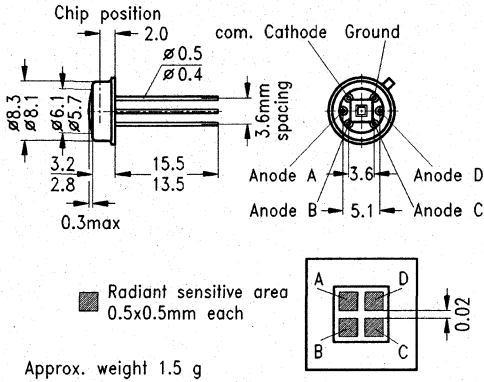
Diode system



Radiant sensitive area 2.0x1.64 each  
Approx. weight 1.5 g

**SFH 234 S**

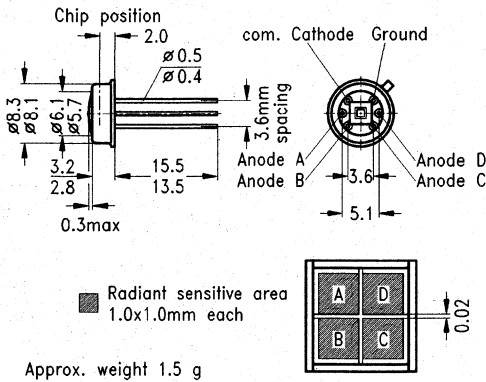
**Bild/Figure 122**



GM006641

**SFH 244 S**

**Bild/Figure 123**

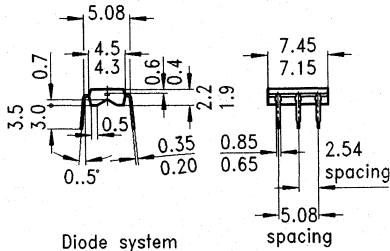


GM006642



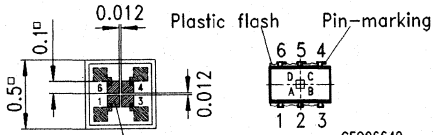
**SFH 204**

**Bild/Figure 124**



Diode system

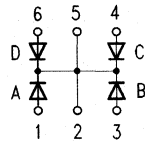
spacing



Sensitive areas 0.1x0.1mm

GE006640

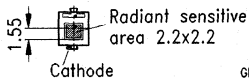
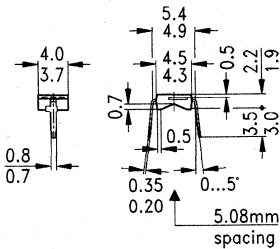
Circuit diagram



**8**

**BP 104**

**Bild/Figure 125**



Radiant sensitive area 2.2x2.2

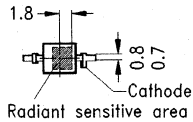
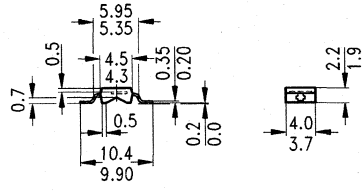
Cathode

GE006075

Approx. weight 0.1 g

**BP 104 BS**

**Bild/Figure 126**



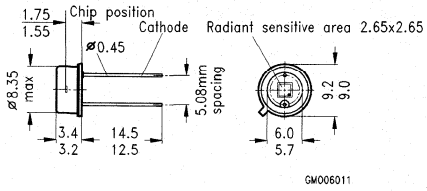
Radiant sensitive area 2.65x2.65

Approx. weight 0.1 g

GP006309

**BPW 21**

**Bild/Figure 127**

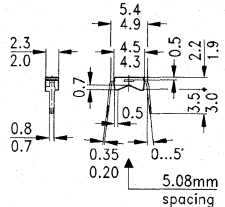


GM006011

Approx. weight 2 g

**BPW 32**

**Bild/Figure 128**



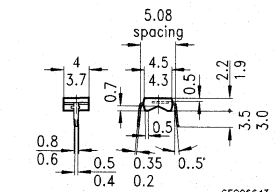
GE006009

Approx. weight 0.05 g

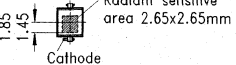
**BPW 33**

**BPW 34/-B/-F/-FA**

**Bild/Figure 129**



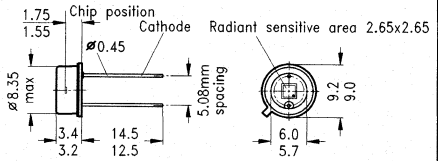
GE006643



Approx. weight 0.1 g

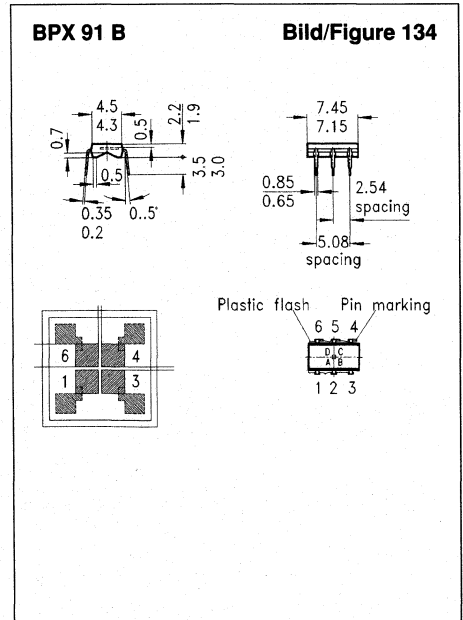
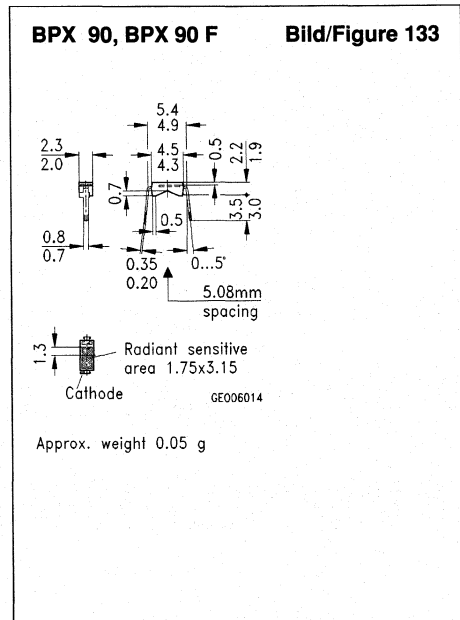
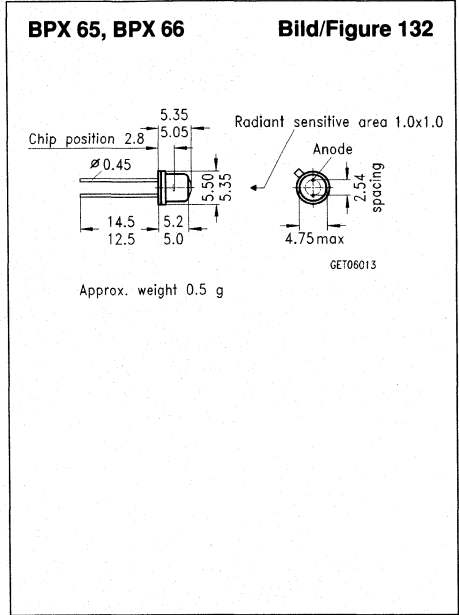
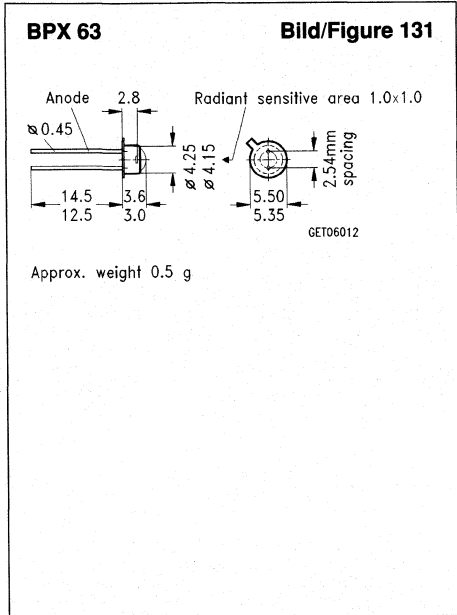
**BPX 60, BPX 61**

**Bild/Figure 130**



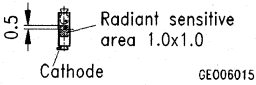
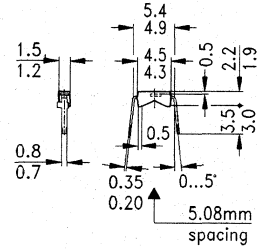
GM006011

Approx. weight 2 g



**BPX 92**

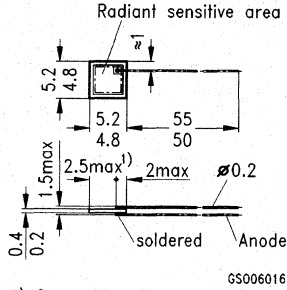
**Bild/Figure 135**



Approx. weight 0.03 g

**BPY 12**

**Bild/Figure 136**

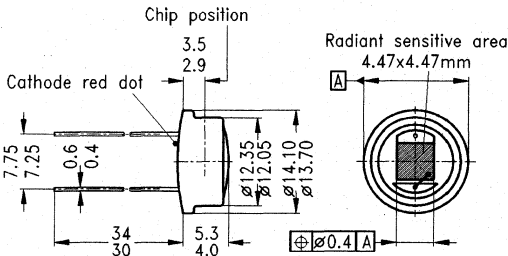


1) Support area

Approx. weight 0.2 g

**BPY 12 H1**

**Bild/Figure 137**



Approx. weight 1.2 g

**Detektoren**  
**Detectors**

Typ Type	S nA Ix $\mu$ A*	$\lambda_{S \max}$ nm	$V_R$ V	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.			
							min. bis/to 49	50 bis/to 99	100 bis/to 499

**Silizium-Fotodioden**  
**Silicon Photodiodes**

Typ	S	$\lambda_{S \max}$	$V_R$	Bild	Bestellnummer	Stck.			
Type	nA Ix $\mu$ A*	nm	V	Fig.	Ordering Code	Pcs. Min.	min. bis/to 49	50 bis/to 99	100 bis/to 499
SFH 100	175 ( $\geq 150$ )	850	7	138	Q62702- -P595	2			
SFH 200	20 ( $\geq 14$ )	800	5	139	-P86	10			
SFH 205	25 ( $\geq 15$ )*	950	20	140	-P102	40			
▼ SFH 205 Q2	25 ( $\geq 15$ )*	950	32	142	-P896	40			
SFH 206	25 ( $\geq 15$ )*	950	20	143	-P128	40			
▼ SFH 206 K	80 ( $\geq 50$ )	850	32	143	-P129	40			
▼ SFH 207 A	850 ( $\geq 750$ )	850	15	141	-P863	1			
▼ SFH 212	25 ( $\geq 20$ )	800	7	144	-P145	10			
SFH 216	50 ( $\geq 35$ )	850	50	145	-P936	5			
SFH 219	7 ( $\geq 5$ )	850	7	146	-P948	10			
SFH 225	17 ( $\geq 12.5$ )	950	20	147	-P1051	40			
▼ SFH 217	9.5 ( $\geq 5$ )	850	30	148	-P942	40			
▼ SFH 217 F	3 ( $\geq 1.8$ )*	900	30	148	-P947	30			
▼ SFH 229	28 ( $\geq 18$ )	860	20	149	-P215	100			
▼ SFH 229 F	10 ( $\geq 5.4$ )*	900	20	149	-P216	100			
▼ SFH 229 P	3.1 ( $\geq 2.3$ )	860	20	150	-P217	100			
▼ SFH 229 PF	1.0 ( $\geq 0.7$ )*	900	20	150	-P218	100			
SFH 235	24 ( $\geq 20$ )*	900	32	151	-P273	50			
SFH 263	10 ( $\geq 8$ )	850	7	152	-P1081	15			
SFH 291	3 ( $\geq 2$ )	850	10	153	-P1038	2			
SFH 2030	80 ( $\geq 50$ )	850	30	154	-P955	40			
SFH 2030 F	25 ( $\geq 15$ )*	900	30	154	-P956	40			

Typ Type	S $\lambda = 1300$ nm 0.25 mW/cm <sup>2</sup> $\mu$ A	$\lambda_{S \max}$ nm	$V_R$ V	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.			
							min. bis/to 49	50 bis/to 99	100 bis/to 499

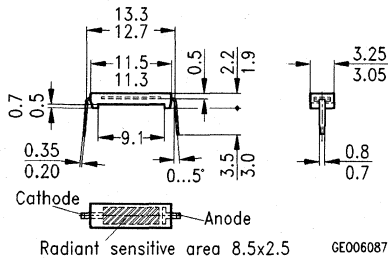
**Germanium-Fotodioden**  
**Germanium Photodiodes**

Typ	S	$\lambda_{S \max}$	$V_R$	Bild	Bestellnummer	Stck.			
Type	nA	nm	V	Fig.	Ordering Code	Pcs. Min.	min. bis/to 49	50 bis/to 99	100 bis/to 499
SFH 231	13 ( $\geq 8$ )	1500	15	155	Q62702- -P1052	1			
SFH 232	1.7 ( $\geq 1.2$ )	1500	15	156	-P1053	1			
SFH 233	12 ( $\geq 9$ )	1500	15	157	-P1054	1			



**SFH 100**

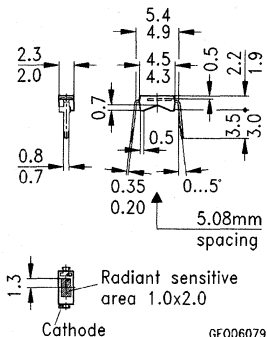
**Bild/Figure 138**



Approx. weight 0.15 g

**SFH 200**

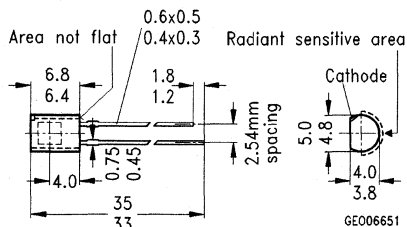
**Bild/Figure 139**



Approx. weight 0.05 g

**SFH 205**

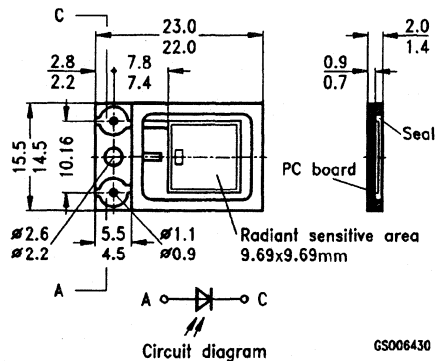
**Bild/Figure 140**



Approx. weight 0.25 g

**SFH 207A**

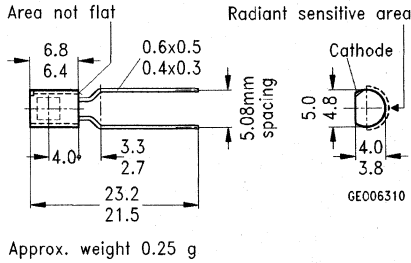
**Bild/Figure 141**



Approx. weight 1 g

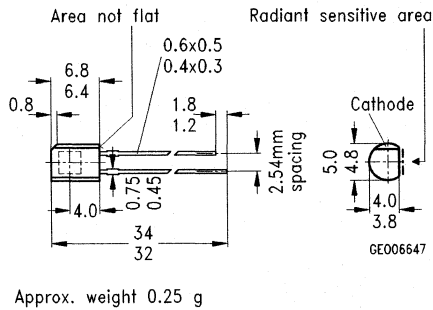
**SFH 205 Q2**

**Bild/Figure 142**



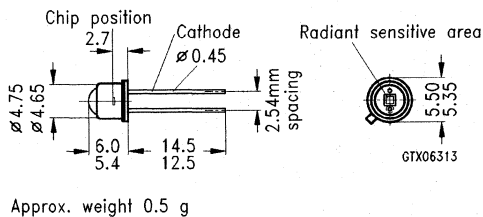
**SFH 206, SFH 206 K**

**Bild/Figure 143**



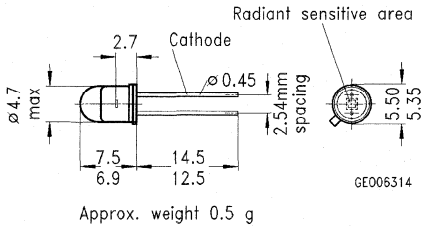
**SFH 212**

**Bild/Figure 144**



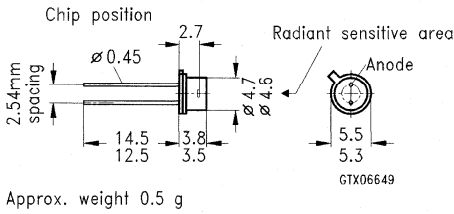
**SFH 216**

**Bild/Figure 145**



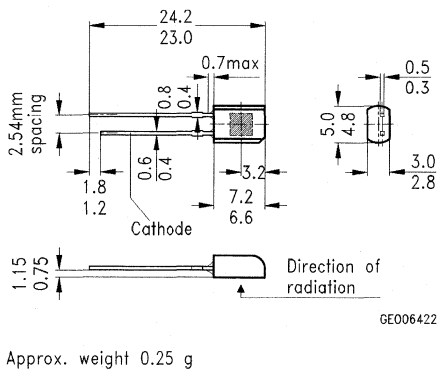
**SFH 219**

**Bild/Figure 146**



**SFH 225**

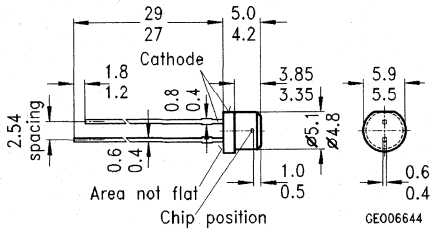
**Bild/Figure 147**





**SFH 217 / -F**

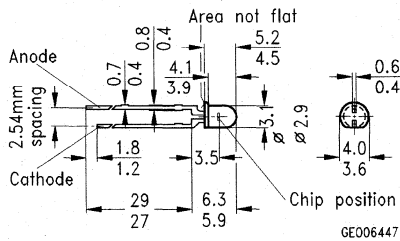
**Bild/Figure 148**



Approx. weight 0.4 g

**SFH 229 / -F**

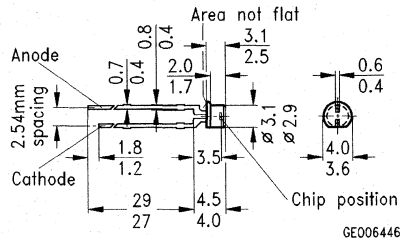
**Bild/Figure 149**



Approx. weight 0.25 g

**SFH 229 P / -PF**

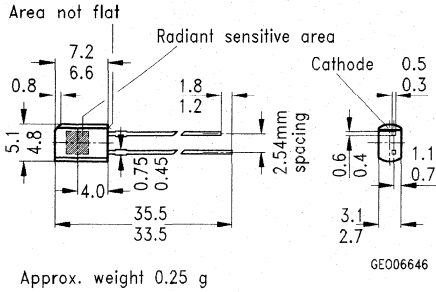
**Bild/Figure 150**



Approx. weight 0.25 g

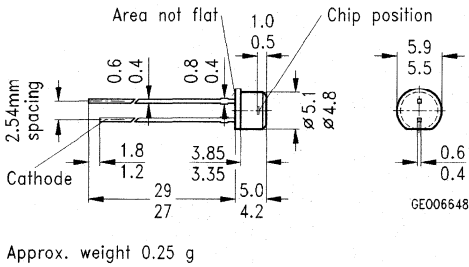
**SFH 235**

**Bild/Figure 151**



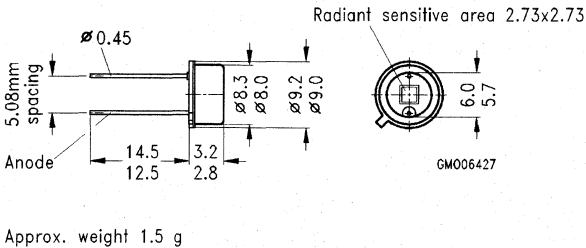
**SFH 263**

**Bild/Figure 152**



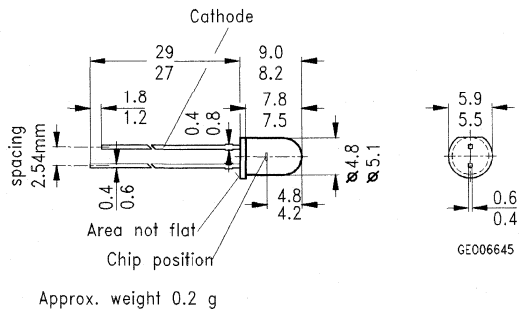
**SFH 291**

**Bild/Figure 153**



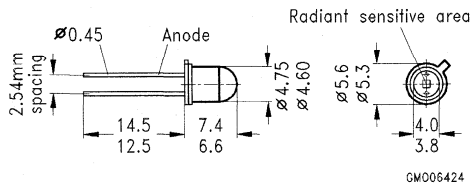
**SFH 2030/-F**

**Bild/Figure 154**



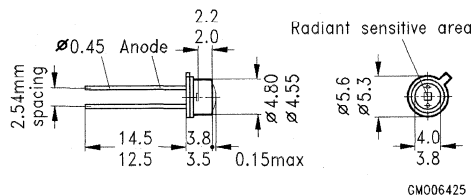
**SFH 231**

**Bild/Figure 155**



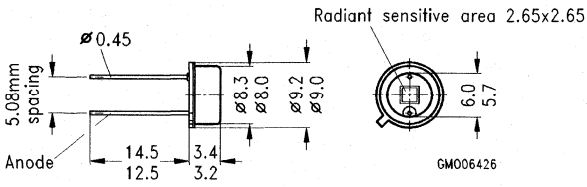
**SFH 232**

**Bild/Figure 156**



**SFH 233**

**Bild/Figure 157**



Approx. weight 1.5 g

**Detektoren**  
**Detectors**

Typ Type	$V_{CE}$  V	$I_p$ $V_{CE} = 5\text{ V}$ $E_g = 0.5\text{ mW}$ 950 nm mA	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499

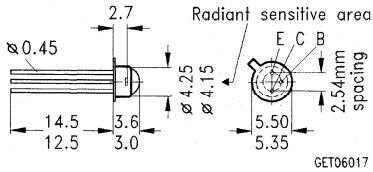
**Silizium-Fototransistoren**  
**Silicon Phototransistors**

				Q62702				
▼ BP 103	50	0.08 ... 0.5	158	-P75	20			
BP 103-2	50	0.08 ... 0.16	158	-P79-S1	20			
BP 103-3	50	0.125 ... 0.25	158	-P79-S2	20			
▼ BP 103-4	50	0.2 ... 0.4	158	-P79-S4	20			
▼ BP 103-5	50	0.32 ... 0.63	158	-P781	20			
▼ BP 103-6	50	≥ 0.5	158	-P768	20			
▼ BP 103 B	35	0.63 ... 1.6	159	-P1189	80			
BP 103 B-2	35	0.63 ... 1.25	159	-P85-S2	80			
BP 103 B-3	35	1.0 ... 2.0	159	-P85-S3	80			
▼ BP 103 B-4	35	≥ 1.6	159	-P85-S4	80			
▼ BPX 38	50	0.2 ... 1.25	160	-P15	20			
BPX 38-2	50	0.2 ... 0.4	160	-P15-S2	20			
BPX 38-3	50	0.32 ... 0.63	160	-P15-S3	20			
▼ BPX 38-4	50	0.5 ... 1.0	160	-P15-S4	20			
▼ BPX 38-5	50	0.8 ... 1.6	160	-P15-S5	20			
▼ BPX 38-6	50	≥ 1.25	160	-P1111	20			
▼ BPX 43	50	0.8 ... 5	161	-P16	20			
BPX 43-2	50	0.8 ... 1.6	161	-P16-S2	20			
BPX 43-3	50	1.25 ... 2.5	161	-P16-S3	20			
▼ BPX 43-4	50	2.0 ... 4.0	161	-P16-S4	20			
▼ BPX 43-5	50	3.2 ... 6.3	161	-P16-S5	20			
▼ BPX 43-6	50	≥ 5	161	-P1112	20			
▼ BPX 81	32	0.35 ... 1.25	162	-P20	40			
BPX 81-2	32	0.25 ... 0.5	162	-P43-S2	40			
BPX 81-3	32	0.4 ... 0.8	162	-P43-S3	40			
BPX 81-4	32	0.63 ... 1.25	162	-P43-S4	40			
				Q60215-				
▼ BPY 62	50	0.63 ... 3.2	163	-Y62	20			
BPY 62-2	50	0.63 ... 1.25	138	-Y1111	20			
BPY 62-3	50	1.0 ... 2.0	138	-Y1112	20			
▼ BPY 62-4	50	1.25 ... 2.5	163	-Y1113	20			
				Q62702-				
▼ BPY 62-5	50	2.0 ... 4.0	163	-P1113	30			
▼ BPY 62-6	50	≥ 3.2	163	-P1114	30			



**BP 103**

**Bild/Figure 158**

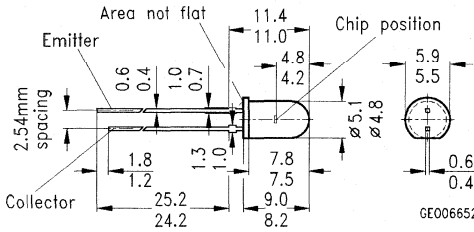


GET06017

Approx. weight 0.5 g

**BP 103 B**

**Bild/Figure 159**

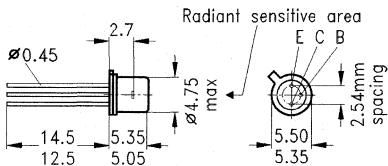


GE006652

Approx. weight 0.2 g

**BPX 38**

**Bild/Figure 160**

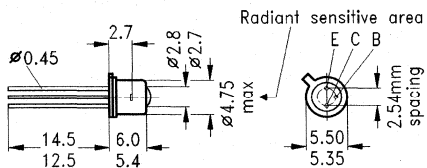


GM006018

Approx. weight 1.0 g

**BPX 43**

**Bild/Figure 161**

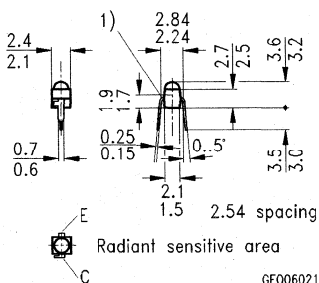


GM006019

Approx. weight 1.0 g

**BPX 81**

**Bild/Figure 162**



GE006021

1) Detaching area for tools,  
flash not true to size.

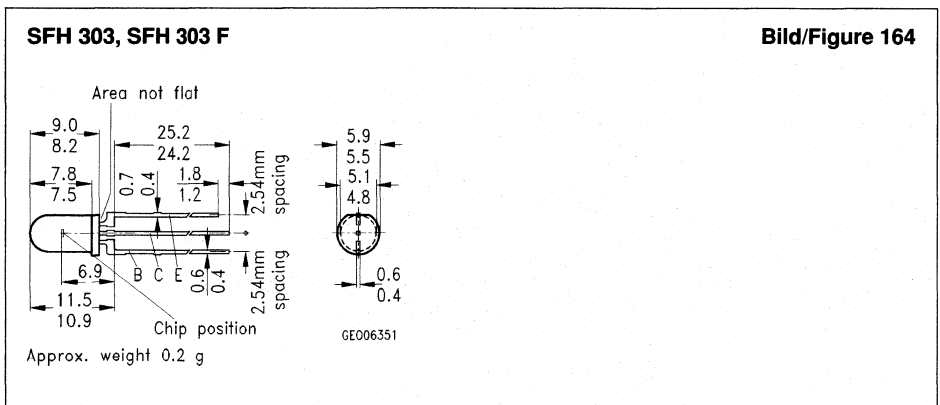
Approx. weight 0.03 g

**Detektoren**  
**Detectors**

Typ Type	$V_{CE}$	$I_p$ $V_{CE} = 5\text{ V}$ $E_e = 0.5\text{ mW}$ 950 nm	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499
	V	mA			Min.			

**Silizium-Fototransistoren**  
**Silicon Phototransistors**

				Q62702			
▼ SFH 303	50	5.2 ... 13.1	164	-P957	100		
▼ SFH 303-2	50	5.2 <sup>1)</sup>	164	-P228	100		
▼ SFH 303-3	50	8.4 <sup>1)</sup>	164	-P229	100		
▼ SFH 303-4	50	13.1 <sup>1)</sup>	164	-P230	100		
▼ SFH 303 F	50	1.0 ... 3.2	164	-P958	100		
▼ SFH 303 F-2	50	1.0 ... 2.0	164	-P222	100		
▼ SFH 303 F-3	50	1.6 ... 3.2	164	-P223	100		
▼ SFH 303 F-4	50	≥ 3.2	164	-P224	100		





**Detektoren**  
**Detectors**

Typ Type	$V_{CE}$  V	$I_p$ $V_{CE} = 5\text{ V}$ $E_o = 0.5\text{ mW}$ 950 nm mA	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499

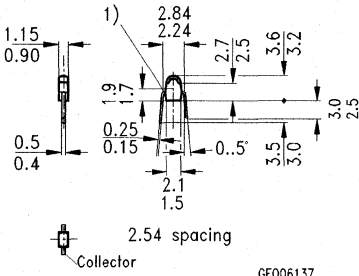
**Silizium-Fototransistoren**  
**Silicon Phototransistors**

				Q62702-				
▼ SFH 305	32	0.25 ... 0.8	165	-P836	50			
▼ SFH 305-2	32	0.25 ... 0.5	165	-P848	50			
▼ SFH 305-3	32	0.4 ... 0.8	165	-P849	50			
▼ SFH 309	35	0.63 ... 2.5	166	-P859	100			
▼ SFH 309-3	35	0.63 ... 1.25	166	-P997	100			
▼ SFH 309-4	35	1.0 ... 2.0	166	-P998	100			
▼ SFH 309-5	35	1.6 ... 3.2	166	-P999	100			
▼ SFH 309-6	35	≥ 2.5	166	-P1000	100			
▼ SFH 309 F	35	0.4 ... 3.2	166	-P941	100			
▼ SFH 309 F-2	35	0.4 ... 0.8	166	-P174	100			
▼ SFH 309 F-3	35	0.63 ... 1.25	166	-P176	100			
▼ SFH 309 F-4	35	1.0 ... 2.0	166	-P178	100			
▼ SFH 309 F-5	35	1.6 ... 3.2	166	-P180	100			
▼ SFH 309 P	35	0.063 ... 0.3	167	-P245	100			
▼ SFH 309 P-2	35	0.063 ... 0.125	167	-P231	100			
▼ SFH 309 P-3	35	0.1 ... 0.2	167	-P232	100			
▼ SFH 309 P-4	35	0.16 ... 0.3	167	-P233	100			
▼ SFH 309 PF	35	0.063 ... 0.32	167	-P246	100			
▼ SFH 309 PF-2	35	0.063 ... 0.125	167	-P235	100			
▼ SFH 309 PF-3	35	0.1 ... 0.2	167	-P236	100			
▼ SFH 309 PF-4	35	0.16 ... 0.32	167	-P237	100			
▼ SFH 317	50	0.16 ... 0.4	168	-P959	50			
▼ SFH 317-2	50	0.16 ... 0.32	168	-P225	50			
▼ SFH 317-3	50	0.25 ... 0.5	168	-P226	50			
▼ SFH 317-4	50	≥ 0.4	168	-P227	50			
▼ SFH 317 F	50	0.16 ... 0.4	168	-P960	50			
▼ SFH 317 F-2	50	0.16 ... 0.32	168	-P219	50			
▼ SFH 317 F-3	50	0.25 ... 0.5	168	-P220	50			
▼ SFH 317 F-4	50	≥ 0.4	168	-P221	50			
▼ SFH 320-1	35	0.01 ... 0.02	169	-P388	250			
▼ SFH 320-2	35	0.016 ... 0.032	169	-P389	250			
▼ SFH 320-3	35	≥ 0.025	169	-P390	250			
▼ SFH 320 F-1	35	0.01 ... 0.02	169	-P391	250			
▼ SFH 320 F-2	35	0.016 ... 0.032	169	-P392	250			
▼ SFH 320 F-3	35	≥ 0.025	169	-P393	250			

■ = SMD (Surface Mounted Device)

**SFH 305**

**Bild/Figure 165**



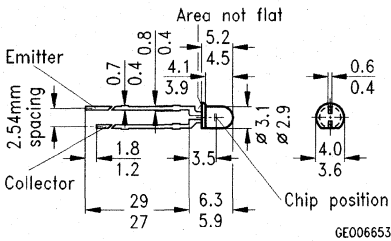
GE006137

1) Detaching area for tools,  
flash not true to size.

Approx. weight 0.02 g

**SFH 309, SFH 309 F**

**Bild/Figure 166**

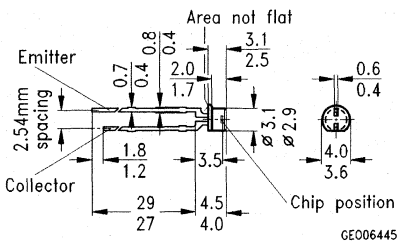


GE006653

Approx. weight 0.3 g

**SFH 309 P, SFH 309 PF**

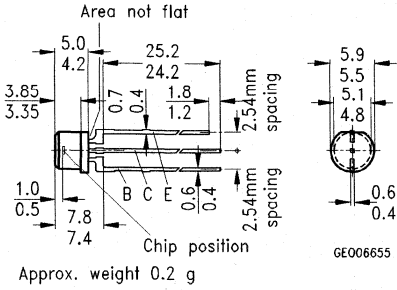
**Bild/Figure 167**



GE006445

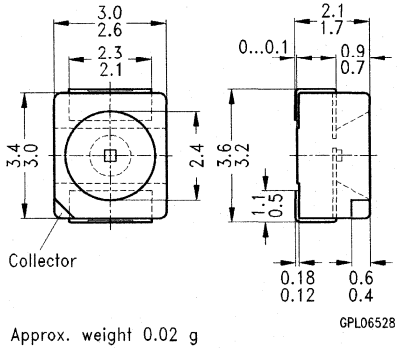
**SFH 317, SFH 317 F**

**Bild/Figure 168**



**SFH 320, SFH 320 F**

**Bild/Figure 169**



**Detektoren**  
**Detectors**

Typ/Type (Transistoren pro Zeile) (Transistors per Array)	$V_{CE}$	$I_p$ $V_{CE} = 5\text{ V}$ $E_e = 0.5\text{ mW}$ 950 nm	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499
	V	mA			Min.			

**Silizium-Fototransistorzellen**  
**Silicon Phototransistor Arrays**

BPX 82	32	$\geq 0.32 \dots < 1$	170	Q62702-P21	20			
BPX 83	32	$\geq 0.32 \dots < 1$	170	Q62702-P25	10			
▼ BPX 84	32	$\geq 0.32 \dots < 1$	170	Q62702-P30	10			
▼ BPX 85	32	$\geq 0.32 \dots < 1$	170	Q62702-P31	10			
BPX 86	32	$\geq 0.32 \dots < 1$	170	Q62702-P22	5			
▼ BPX 87	32	$\geq 0.32 \dots < 1$	170	Q62702-P32	5			
▼ BPX 88	32	$\geq 0.32 \dots < 1$	170	Q62702-P33	5			
BPX 89	32	$\geq 0.32 \dots < 1$	170	Q62702-P26	5			
BPX 80	32	$\geq 0.32 \dots < 1$	170	Q62702-P28	5			

Typ Type	$V_{CE}$	$I_p$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499
	V	mA			Min.			

**Silizium-Fotodarlington-Transistor**  
**Silicon Photodarlington Transistor**

▼ SFH 501	15	2.5 ... 5	171	Q62702-P110	5			
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Typ Type	$V_{CE}$	$\varphi$	$I_p$ $E_e = 925\text{ mW/cm}^2$ 950 nm	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 49	50 bis/to 99	100 bis/to 499
	V	Grad Degrees	mA			Min.			

**Fototransistoren (Seitenempfänger)**  
**Phototransistors (Sidefacing)**

LPT 80 A	$\geq 30$	40	$\geq 0.2$	172	Q68000- -A7852	40		
LPT 85 A	30	40	$\geq 0.9$	172	-A8324	40		

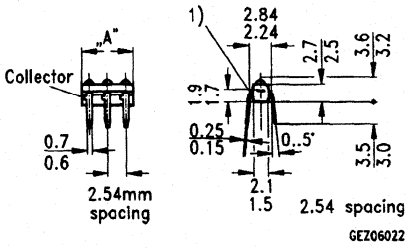
Typ Type	$f$	Entfernungsbereich Viewing from	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						min. bis/to 49	50 bis/to 99	100 bis/to 499
	kHz	m			Min.			

**IR-Empfänger / Demodulator-Baustein**  
**IR Receiver / Demodulator Devices**

▼ SFH 505 A	15	10 ... 20	173	Q62702-P373	20			
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**BPX 80 ... BPX 89**

**Bild/Figure 170**



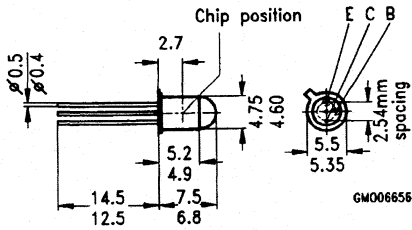
1) Detaching area for tools,  
flash not true to size.

GEZ06022

8

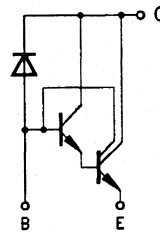
**SFH 501**

**Bild/Figure 171**



Approx. weight 0.2 g

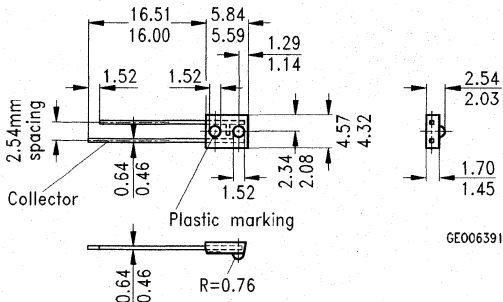
GM006856



DHM01934

**LPT 80 A, LPT 85 A**

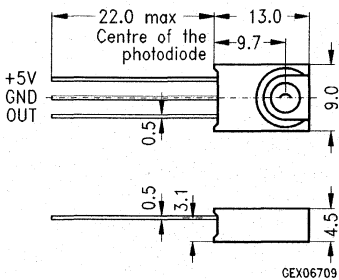
**Bild/Figure 172**



Approx. weight 0.2g

**SFH 505 A**

**Bild/Figure 173**



**Detektoren**  
**Detectors**

Typ Type	$I_p$ $\lambda = 950 \text{ nm}, E_e = 0.5 \text{ mW/cm}^2$  mA	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
					Min.	50 bis/to 99	100 bis/to 499

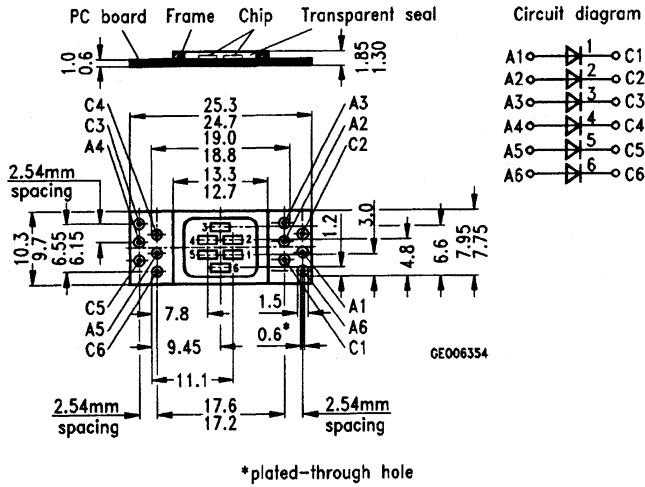
**Kundenspezifische Optoelektronische Multichiparrays (KOM)**  
**Custom-designed Optoelectronic Multichip arrays (KOM)**

▼ KOM 2033-A	8 ( $\geq 5.2$ )	174	Q62702-K2	3			
▼ KOM 2033-AF	7.5 ( $\geq 4.9$ )	174	Q62702-K39	3			
▼ KOM 2033-B	9 ( $\geq 7$ )	174	Q62702-K26	3			
▼ KOM 2033-BF	8.5 ( $\geq 6.6$ )	174	Q62702-K38	3			
▼ KOM 2045	17 ( $\geq 12$ ) <sup>1)</sup>	175	Q62702-K3	1			
▼ KOM 2057-L	80 ( $\geq 50$ ) <sup>1)</sup>	176	Q62702-K8	5			
▼ KOM 2059	2.5 ( $\geq 1.8$ ) <sup>1)</sup>	177	Q62702-K4	1			
▼ KOM 2084	80 ( $\geq 50$ ) <sup>1)</sup>	178	Q62702-K15	2			
▼ KOM 2085	180 ( $\geq 100$ ) <sup>1)</sup>	179	Q62702-K16	2			
▼ KOM 2100-A	8 ( $\geq 5.2$ )	180	Q62702-K37	3			
▼ KOM 2100-AF	7.5 ( $\geq 4.9$ )	180	Q62702-K36	3			
▼ KOM 2100-B	9 ( $\geq 7$ )	180	Q62702-K35	3			
▼ KOM 2100-BF	8.5 ( $\geq 6.6$ )	180	Q62702-K34	3			

<sup>1)</sup> 1000 lx, Normlicht A/standard light A, T = 2856 K

KOM 2033

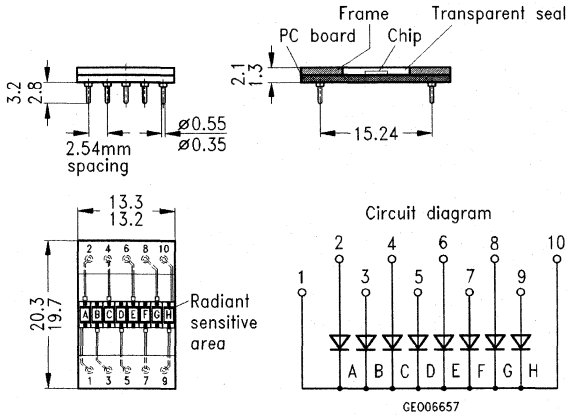
Bild/Figure 174





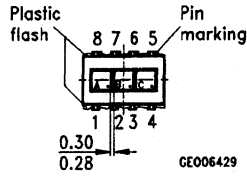
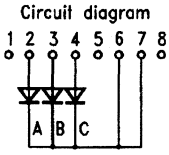
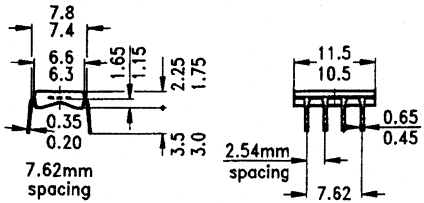
**KOM 2045**

**Bild/Figure 175**



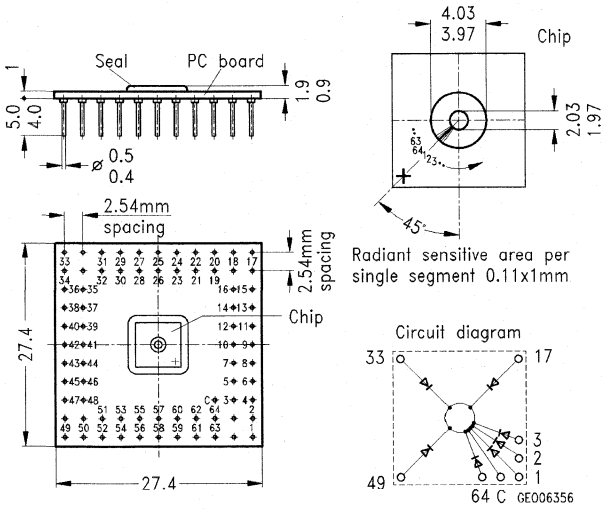
**KOM 2057-L**

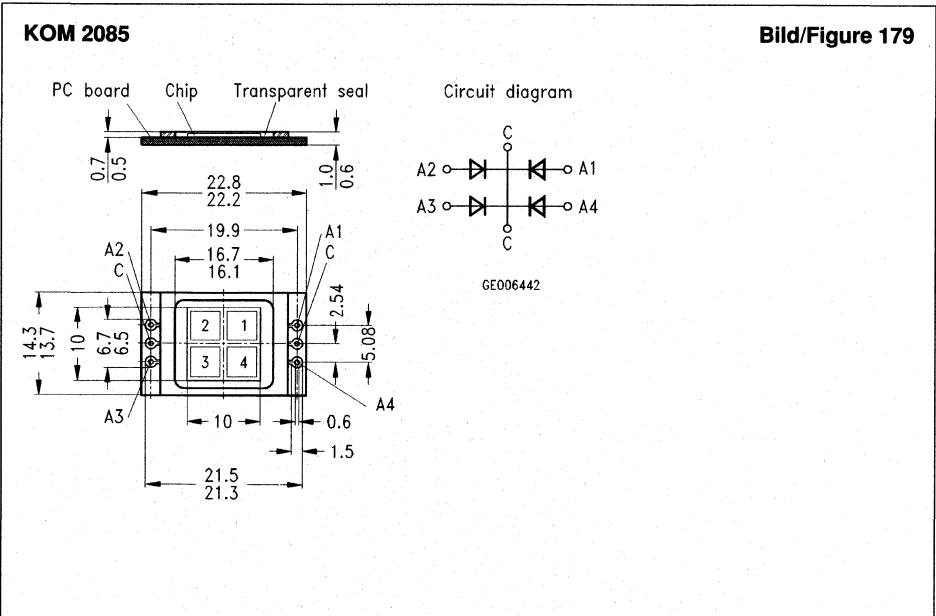
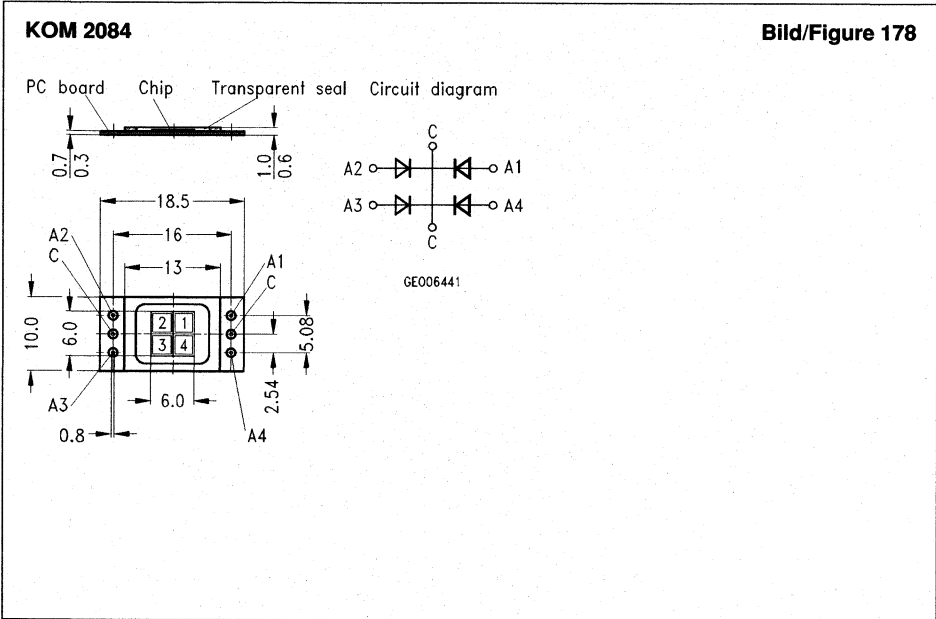
**Bild/Figure 176**



**KOM 2059**

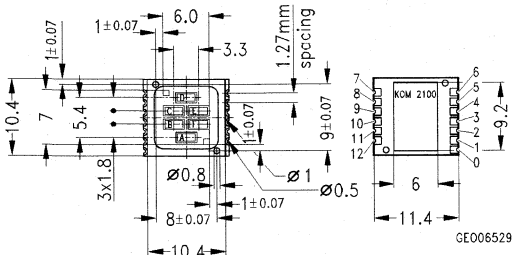
**Bild/Figure 177**



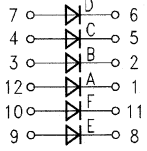


**KOM 2100**

**Bild/Figure 180**



Diode system



0 ≙ back segregation contact

**Lichtschranken**  
**Light-Switches**

Typ Type	$I_{CE}$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $d = 1 \text{ mm}$ mA	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
					Min.	min. bis/to 49	50 bis/to 99

**Miniatur-Reflexlichtschranken**  
**Miniature Light Reflection Switches**

SFH 900	0.25 ... 1.25	181	Q62702-P1187	25			
SFH 900-1	0.25 ... 0.5	181	Q62702-P935	25			
SFH 900-2	0.4 ... 0.8	181	Q62702-P141	25			
SFH 900-3	0.63 ... 1.25	181	Q62702-P1088	25			
SFH 900-4	$\geq 1.0$	181	Q62702-P1087	25			
SFH 905	0.04 ... 0.10	181	Q62702-P1188	25			
SFH 905-1	0.04 ... 0.125	181	Q62702-P1117	25			
SFH 905-2	$\geq 0.10$	181	Q62702-P1118	25			

Typ Type	$t_r/t_f$  $\mu\text{s}$	$I_F$  mA	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
						Min.	min. bis/to 49	50 bis/to 99

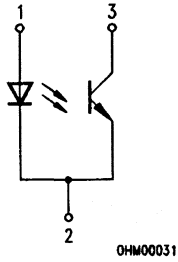
**Differential-Gabellichtschranke mit Zählimpuls und Richtungsangabe**  
**Differential Photo Interrupter with Counting Pulse and Directional Indication**

$V_S = 4.5 \dots 16 \text{ V}; I_S = 5 (\leq 10) \text{ mA}$

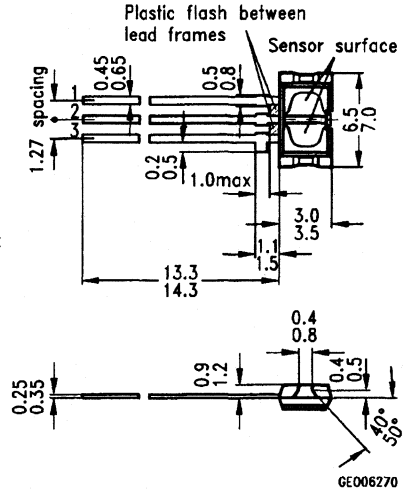
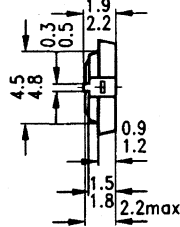
SFH 910	0.3/0.3	5 ... 50	182	Q62702-P866	5			
Taktscheibe für SFH 910 Encoder Wheel for SFH 910			183	Q62902-B166	40			

Miniaturlichtschranken

Bild/Figure 181



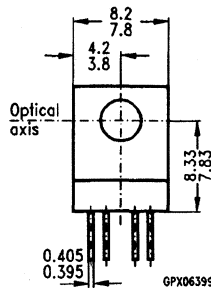
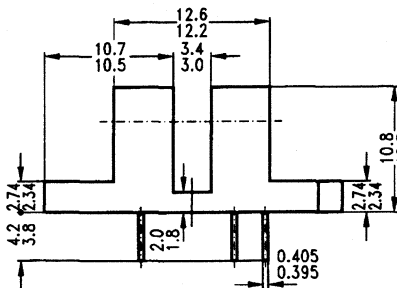
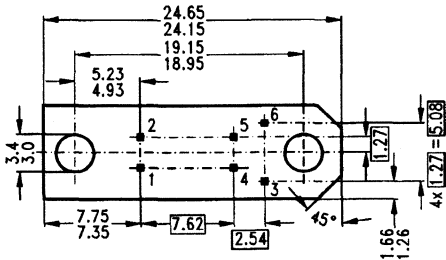
1. Emitter anode
2. Emitter cathode/  
detector emitter
3. Detector collector



8

SFH 910

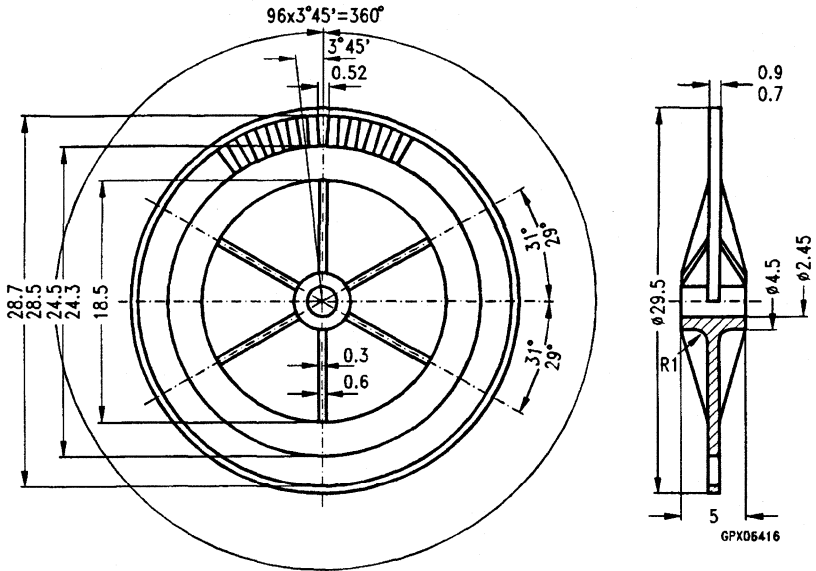
Bild/Figure 182



Pin	Function
1	Anode
2	Cathode
3	GND
4	Directional signal R
5	Counting pulse signal Z
6	Supply voltage

Taktscheibe/Encoder wheel

Bild/Figure 183





# OptoHalbleiter Opto-Semiconductors

## Optokoppler Opto Couplers

Typ Type	$V_{IO}$	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999
TRIOS	$V_-$	%				Min.			

### Einfachkoppler Single-Channel Couplers

					Q62703-				
CNY 17-1	5300	40 ... 80	E 52744	184	-N86	100			
CNY 17-2	5300	63 ... 125		184	-N87	100			
CNY 17-3	5300	100 ... 200		184	-N88	100			
CNY 17-4	5300	160 ... 320		184	-N89	100			
▼ CNY 17-1 Opt. 6	5300	40 ... 80		184	-N86-X6	100			
▼ CNY 17-2 Opt. 6	5300	63 ... 125		184	-N87-X6	100			
▼ CNY 17-3 Opt. 6	5300	100 ... 200		184	-N88-X6	100			
▼ CNY 17-4 Opt. 6	5300	160 ... 320		184	-N89-X6	100			
▼ CNY 17-1 Opt. 7	5300	40 ... 80		184	-N86-X7	100			
▼ CNY 17-2 Opt. 7	5300	63 ... 125		184	-N87-X7	100			
▼ CNY 17-3 Opt. 7	5300	100 ... 200		184	-N88-X7	100			
▼ CNY 17-4 Opt. 7	5300	160 ... 320		184	-N89-X7	100			
CNY 17F-1	5300	40 ... 80		185	-N49	100			
CNY 17F-2	5300	63 ... 125		185	-N21	100			
CNY 17F-3	5300	100 ... 200		185	-N50	100			
▼ CNY 17F-4	5300	160 ... 320		185	-N54	100			
CNY 17F-1 Opt. 6	5300	40 ... 80		185	-N49-X6	100			
CNY 17F-2 Opt. 6	5300	63 ... 125		185	-N21-X6	100			
CNY 17F-3 Opt. 6	5300	100 ... 200	185	-N50-X6	100				
▼ CNY 17F-4 Opt. 6	5300	160 ... 320	185	-N54-X6	100				



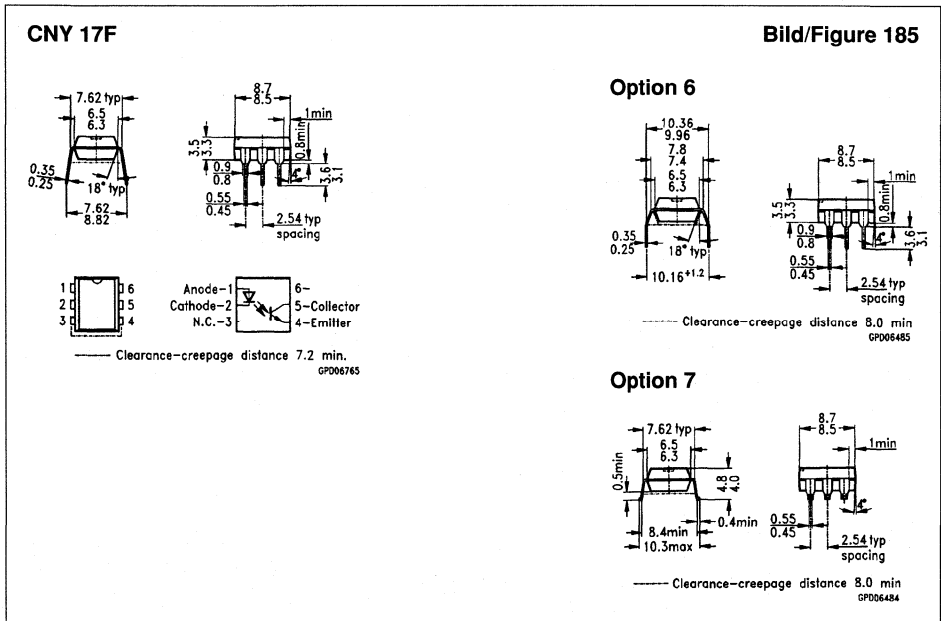
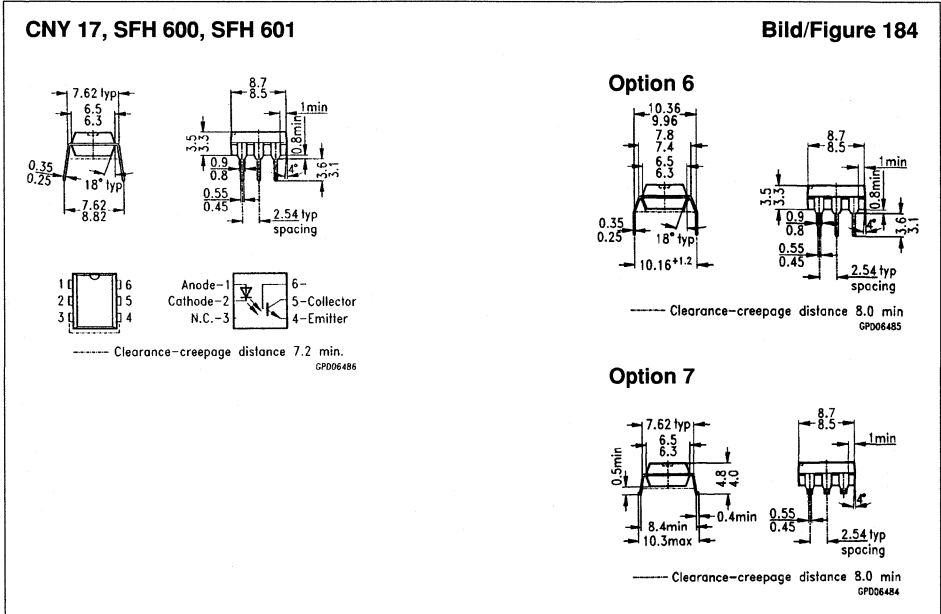
# OptoHalbleiter Opto-Semiconductors

## Optokoppler Opto Couplers

Typ Type	$V_{IO}$	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999
TRIOS	$V_-$	%				Min.			

### Einfachkoppler (Fortsetzung) Single-Channel Couplers (cont'd)

▼ CNY 17F-1 Opt. 7	5300	40 ... 80	E 52744	185	Q62703- -N49-X7	100			
▼ CNY 17F-2 Opt. 7	5300	63 ... 125		185	-N21-X7	100			
▼ CNY 17F-3 Opt. 7	5300	100 ... 200		185	-N50-X7	100			
▼ CNY 17F-4 Opt. 7	5300	160 ... 320		185	-N54-X7	100			
SFH 600-0	5300	40 ... 80	E 52744	184	Q68000- -A7313	100			
SFH 600-1	5300	63 ... 125		184	-A7314	100			
SFH 600-2	5300	100 ... 200		184	-A7315	100			
SFH 601-1	5300	40 ... 80	E 52744	184	-A7318	100			
SFH 601-2	5300	63 ... 125		184	-A7319	100			
SFH 601-3	5300	100 ... 200	CECC	184	-A7320	100			
▼ SFH 601-4	5300	160 ... 320	E 52744	184	-A7321	100			
SFH 601-1 Opt. 6	5300	40 ... 80		184	-A7318-X6	100			
SFH 601-2 Opt. 6	5300	63 ... 125		184	-A7319-X6	100			
SFH 601-3 Opt. 6	5300	100 ... 200		184	-A7320-X6	100			
▼ SFH 601-4 Opt. 6	5300	160 ... 320		184	-A7321-X6	100			
▼ SFH 601-1 Opt. 7	5300	40 ... 80		184	-A7318-X7	100			
▼ SFH 601-2 Opt. 7	5300	63 ... 125		184	-A7319-X7	100			
▼ SFH 601-3 Opt. 7	5300	100 ... 200		184	-A7320-X7	100			
▼ SFH 601-4 Opt. 7	5300	160 ... 320	184	-A7321-X7	100				



# OptoHalbleiter Opto-Semiconductors

## Optokoppler Opto Couplers

Typ Type	$V_{IO}$	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999
TRIOS	$V_-$	%				Min.			

### Einfachkoppler (Fortsetzung) Single-Channel Couplers (cont'd)

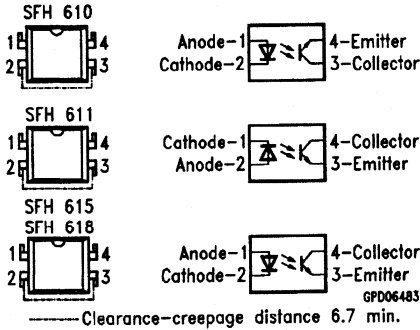
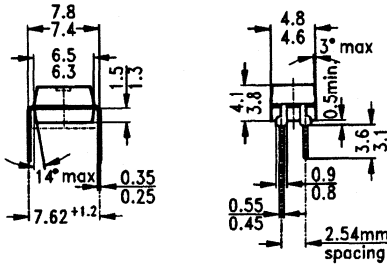
SFH 610-1	5300	40 ... 80	E 52744	186	Q62703- -N75	100			
SFH 610-2	5300	63 ... 125		186	-N76	100			
SFH 610-3	5300	100 ... 200		186	-N77	100			
SFH 611-1	5300	40 ... 80		186	-N82	100			
SFH 611-2	5300	63 ... 125		186	-N83	100			
SFH 611-3	5300	100 ... 200		186	-N84	100			
SFH 615-1	5300	40 ... 80		186	-N109	100			
SFH 615-2	5300	63 ... 125		186	-N110	100			
SFH 615-3	5300	100 ... 200		186	-N111	100			
SFH 617G-1	5300	40 ... 80		-	187	-N127	100		
SFH 617G-2	5300	63 ... 125	-	187	-N128	100			
SFH 617G-3	5300	100 ... 200	-	187	-N129	100			
SFH 620-1	5300	40 ... 125	E 52744 AC input	188	-N115	100			
SFH 620-2	5300	63 ... 200		188	-N116	100			
SFH 620-3	5300	100 ... 320		188	-N117	100			

### Niedrigstrom-Koppler; $I_F = 1 \text{ mA}$ ; $V_{CE} = 0,5 \text{ V}$ Low-Current Couplers; $I_F = 1 \text{ mA}$ ; $V_{CE} = 0,5 \text{ V}$

SFH 608-2	5300	63 ... 125	VDE beantragt/ applied for E 52744	189	Q62703- N169	100			
SFH 608-3	5300	100 ... 200		189	N170	100			
SFH 608-4	5300	160 ... 320		189	N171	100			
SFH 618-2	5300	63 ... 125	VDE beantragt/ applied for E 52744	186	Q62703- -N173	100			
SFH 618-3	5300	100 ... 200		186	-N174	100			
SFH 618-4	5300	160 ... 320		186	-N175	100			
▼ SFH 628-2	5300	63 ... 200	VDE beantragt/ applied for E 52747	188	Q68000- -A8654	100			
▼ SFH 628-3	5300	100 ... 320		188	-A8655	100			

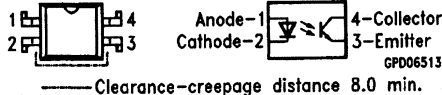
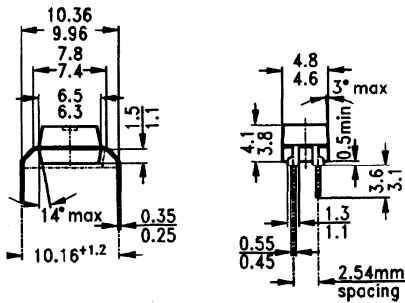
SFH 610, SFH 611, SFH 615, SFH 618

Bild/Figure 186



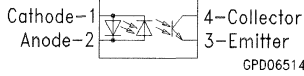
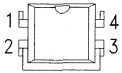
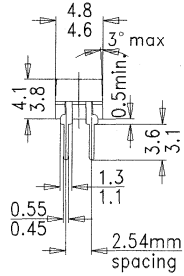
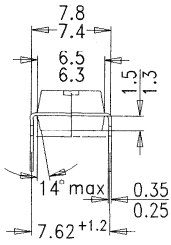
SFH 617G

Bild/Figure 187



**SFH 620, SFH 628**

**Bild/Figure 188**



GPD06514

**Optokoppler**  
**Opto Couplers**

Typ Type	$V_{ORM}$ (VDE 0884)	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999
TRIOS	V	%				Min.			

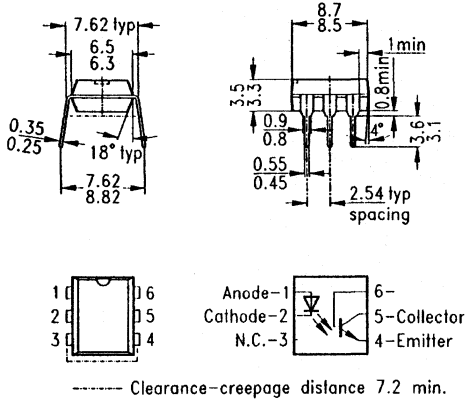
**Einfachkoppler (Fortsetzung) nach VDE 0884 (Option 1)**  
**Single-Channel Couplers (cont'd) in acc. with VDE 0884 (Option 1)**

SFH 601-1 Opt. 1	630	40 ... 80	VDE 0884 E 52744	189	Q68000- -A7318-X1	50				
SFH 601-2 Opt. 1	630	63 ... 125		189	-A7319-X1	50				
SFH 601-3 Opt. 1	630	100 ... 200		189	-A7320-X1	50				
SFH 601-4 Opt. 1	630	160 ... 320		189	-A7321-X1	50				
SFH 601-1 Opt. 1+6	630	40 ... 80		189	-A7318-X16	50				
SFH 601-2 Opt. 1+6	630	63 ... 125		189	-A7319-X16	50				
SFH 601-3 Opt. 1+6	630	100 ... 200		189	-A7320-X16	50				
▼ SFH 601-4 Opt. 1+6	630	160 ... 320		189	-A7321-X16	50				
▼ SFH 601-1 Opt. 1+7	630	40 ... 80		189	-A7318-X17	50				
▼ SFH 601-2 Opt. 1+7	630	63 ... 125		189	-A7319-X17	50				
▼ SFH 601-3 Opt. 1+7	630	100 ... 200		189	-A7320-X17	50				
▼ SFH 601-4 Opt. 1+7	630	160 ... 320		189	-A7321-X17	50				
CNY 17-1 Opt. 1	630	40 ... 80		VDE 0884 E 52744	189	Q62703- -N86-X1	50			
CNY 17-2 Opt. 1	630	63 ... 125			189	-N87-X1	50			
CNY 17-3 Opt. 1	630	100 ... 200			189	-N88-X1	50			
CNY 17-4 Opt. 1	630	160 ... 320			189	-N89-X1	50			
▼ CNY 17-1 Opt. 1+6	630	40 ... 80			189	-N86-X16	50			
▼ CNY 17-2 Opt. 1+6	630	63 ... 125			189	-N87-X16	50			
▼ CNY 17-3 Opt. 1+6	630	100 ... 200			189	-N88-X16	50			
▼ CNY 17-4 Opt. 1+6	630	160 ... 320			189	-N89-X16	50			
▼ CNY 17-1 Opt. 1+7	630	40 ... 80	189		-N86-X17	50				
▼ CNY 17-2 Opt. 1+7	630	63 ... 125	189		-N87-X17	50				
▼ CNY 17-3 Opt. 1+7	630	100 ... 200	189		-N88-X17	50				
▼ CNY 17-4 Opt. 1+7	630	160 ... 320	189		-N89-X17	50				
▼ CNY 17 F-1 Opt. 1	630	40 ... 80	190		-N49-X1	50				
▼ CNY 17 F-2 Opt. 1	630	63 ... 125	190		-N21-X1	50				
▼ CNY 17 F-3 Opt. 1	630	100 ... 200	190		-N50-X1	50				
▼ CNY 17 F-4 Opt. 1	630	160 ... 320	190		-N54-X1	50				
CNY 17 F-1 Opt. 1+6	630	40 ... 80	190		-N49-X16	50				
CNY 17 F-2 Opt. 1+6	630	63 ... 125	190		-N21-X16	50				
CNY 17 F-3 Opt. 1+6	630	100 ... 200	190		-N50-X16	50				
CNY 17 F-4 Opt. 1+6	630	160 ... 320	190		-N54-X16	50				

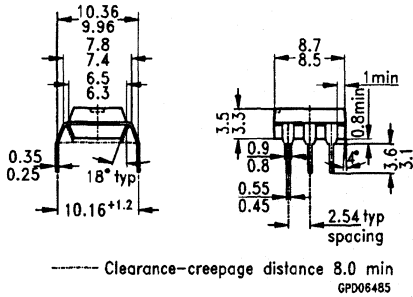


**SFH 608, SFH 601 Option 1, CNY 17 Option 1**

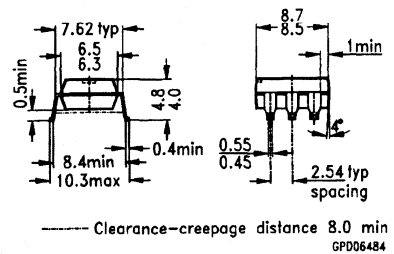
**Bild/Figure 189**



**Option 6**



**Option 7**





# Optohalbleiter Opto-Semiconductors

## Optokoppler Opto Couplers

Typ Type	$V_{IORM}$ (VDE 0884)	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999
TRIOS	V	%				Min.			

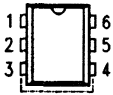
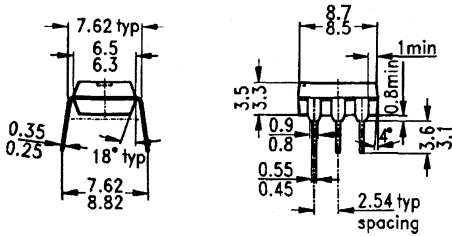
### Einfachkoppler (Fortsetzung) nach VDE 0884 (Option 1)

### Single-Channel Couplers (cont'd) in acc. with VDE 0884 (Option)

▼ CNY 17 F-1 Opt. 1+7	630	40 ... 80	VDE 0884 E 52744	190	Q62703- -N49-X17	50			
▼ CNY 17 F-2 Opt. 1+7	630	63 ... 125		190	-N21-X17	50			
▼ CNY 17 F-3 Opt. 1+7	630	100 ... 200		190	-N50-X17	50			
▼ CNY 17 F-4 Opt. 1+7	630	160 ... 320		190	-N54-X17	50			
SFH 617G-1 Opt. 1	630	40 ... 80		191	-N127-X1	50			
SFH 617G-2 Opt. 1	630	63 ... 125		191	-N128-X1	50			
SFH 617G-3 Opt. 1	630	100 ... 200		191	-N129-X1	50			
SFH 6135 Opt. 1	630	$\geq 7$		192	-N135-X1	50			
▼ SFH 6135 Opt. 1+6	630	$\geq 7$		193	-N135-X16	50			
▼ SFH 6135 Opt. 1+7	630	$\geq 7$		193	-N135-X17	50			
▼ SFH 6136 Opt. 1	630	$\geq 19$		192	-N133-X1	50			
▼ SFH 6136 Opt. 1+6	630	$\geq 19$		193	-N133-X16	50			
SFH 6136 Opt. 1+7	630	$\geq 19$		193	-N133-X17	50			

**CNY 17F (Option 1)**

**Bild/Figure 190**



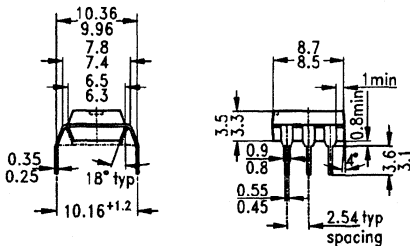
Anode-1 6-  
Cathode-2 5-Collector  
N.C.-3 4-Emitter

----- Clearance-creepage distance 7.2 min.

GP006765

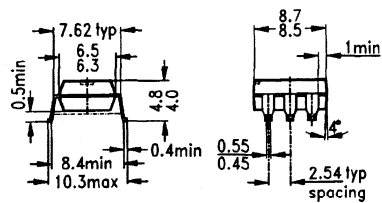
**Option 6**

**Option 7**



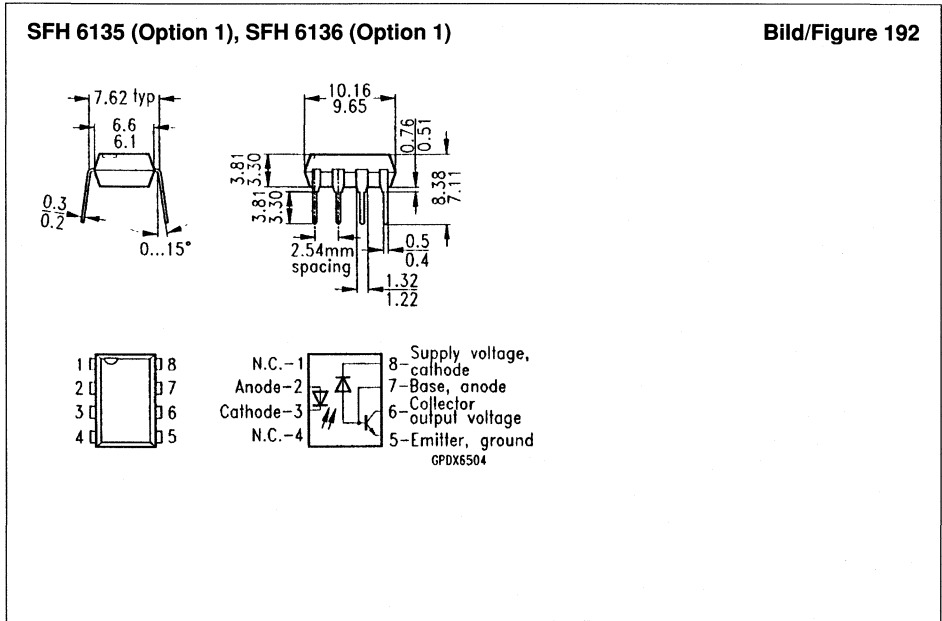
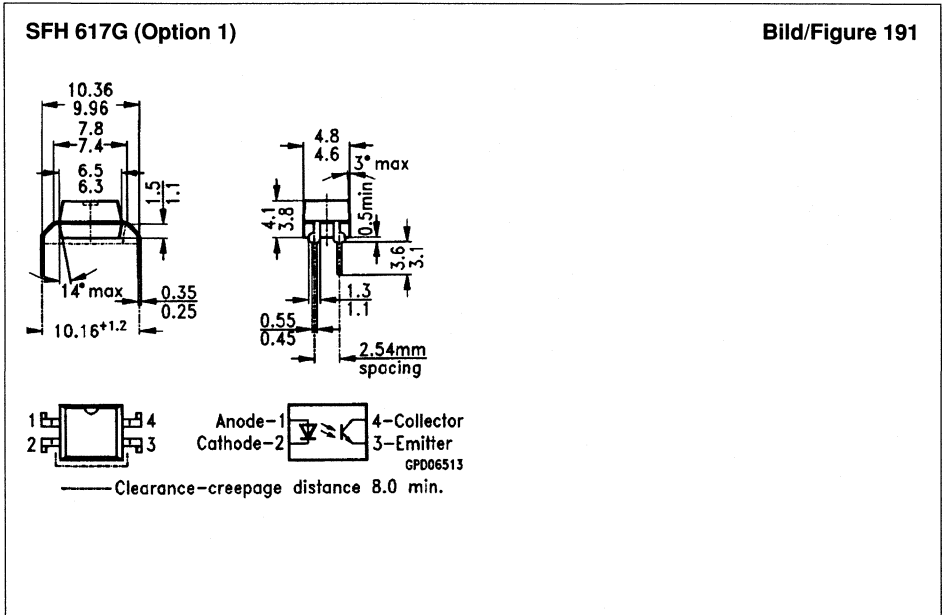
----- Clearance-creepage distance 8.0 min

GP006485



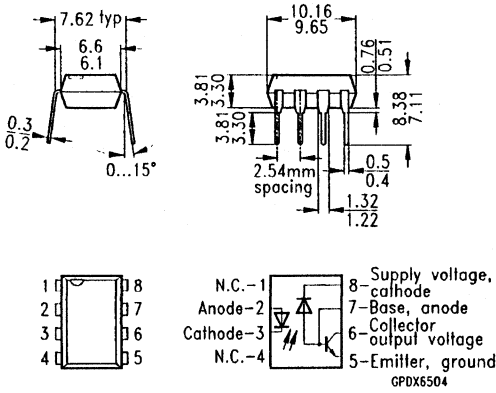
----- Clearance-creepage distance 8.0 min

GP006484

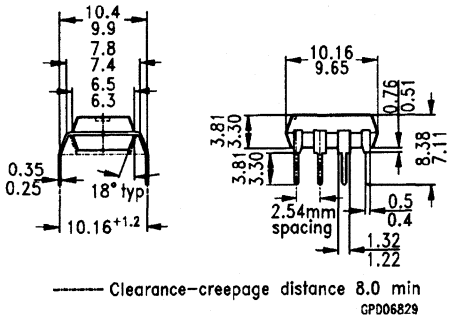


**SFH 6135 (Option 1), SFH 6136 (Option 1)**

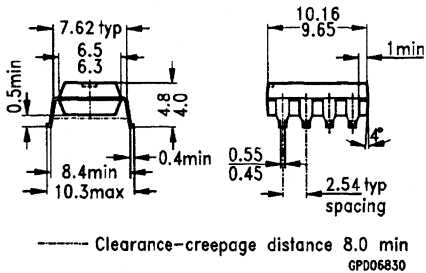
**Bild/Figure 193**



**Option 6**



**Option 7**



# Optohalbleiter Opto-Semiconductors

## Optokoppler Opto Couplers

Typ Type	$V_{IO}$  V	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$  %	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999

### Einfachkoppler (Fortsetzung) Single-Channel Couplers (cont'd)

IL 1	2500	$\geq 20$	E 52744	194	Q68000- -A590	100			
IL 5	2500	$\geq 50$		194	-A5931	100			
IL 10	10000	$\geq 50$		195	-A879	25			
					Q62703-				
IL 30	6000	$\geq 100$		196	-N27	50			
IL 55	6000	$\geq 100$		196	-N29	50			
IL 250	5000	$\geq 50$		197	-N80	50			
					Q68000-				
IL 400	6000	—		198	-A4376	50			
4N 25	2500	20		199	-A5018	100			
4N 26	1500	20		199	-A5017	100			
4N 27	1500	10		199	-A5707	100			
4N 35	3550	100		199	-A7302	100			
4N 36	2500	100		199	-A7303	100			
4N 37	1500	100		199	-A7304	100			
6N 138	6000	$\geq 300$		200	-A6410	50			
6N 139	6000	$\geq 400$		200	-A6411	50			
SL 5500	2800	40 ... 300 <sup>1)</sup>		199	-A5141	100			
SL 5501	2800	23 ... 400 <sup>2)</sup>		199	-A6398	100			

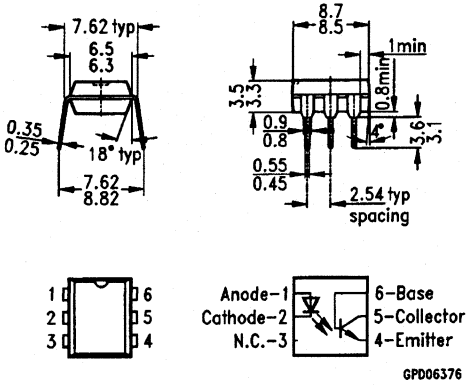
<sup>1)</sup>  $V_{CE} = 0,4 \text{ V}$

<sup>2)</sup>  $I_F = 6 \text{ mA}; V_{CE} = 0,5 \text{ V}$



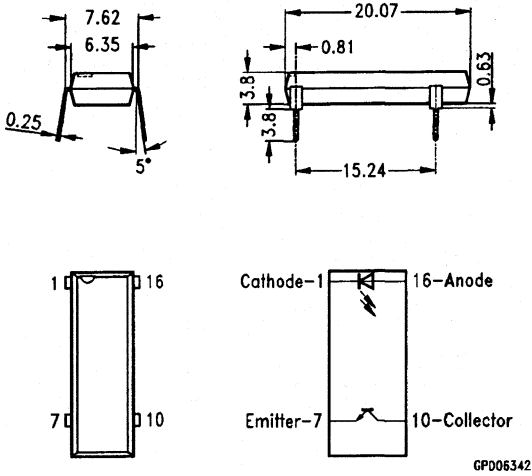
**IL 1, IL 5**

**Bild/Figure 194**



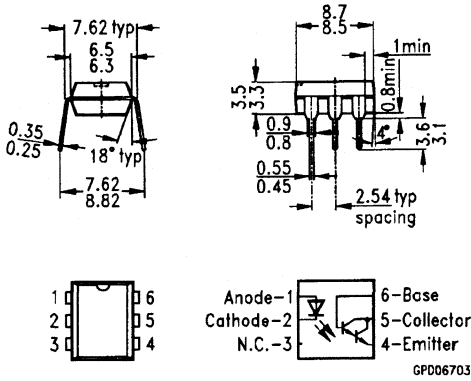
**IL 10**

**Bild/Figure 195**



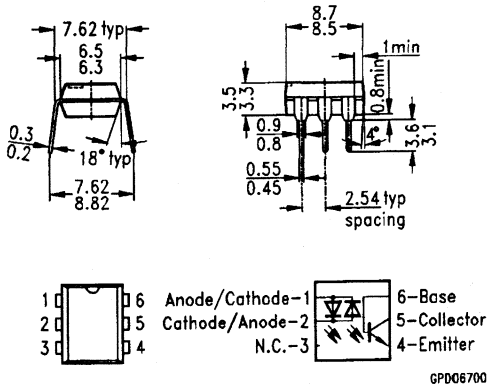
**IL 30, IL 55**

**Bild/Figure 196**



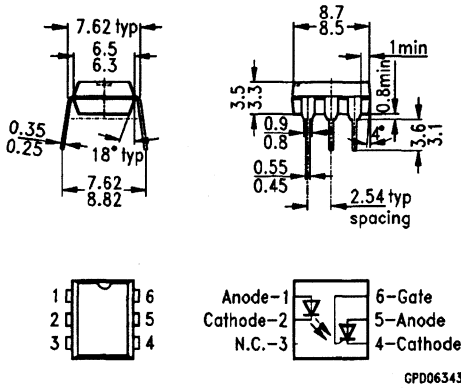
**IL 250**

**Bild/Figure 197**



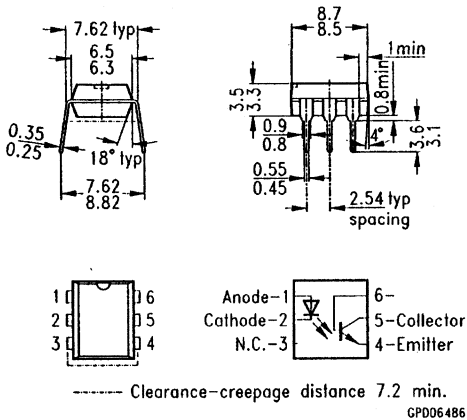
IL 400

Bild/Figure 198



4N 25 ... 4N 37, SL 5500, SL 5501

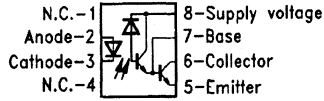
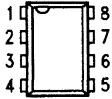
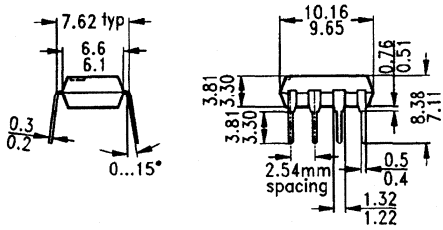
Bild/Figure 199





6N 138, 6N 139

Bild/Figure 200



GPD06704

# Optohalbleiter Opto-Semiconductors

## Optokoppler Opto Couplers

Typ Type	$V_{IO}$  V	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$ %	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999

### SMD-Koppler (ähnlich P-SOIC-8-Gehäuse, gegurtet)

### SMD Couplers (similar to P-SOIC-8 Package, taped)

Typ	$V_{IO}$	$I_C/I_F$	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.	min. bis/to 99	100 bis/to 499	500 bis/to 2999	
IL 205 T	2500	40 ... 80	E 52744	201a	Q68000- -A7926	50				
IL 206 T	2500	63 ... 125		201a	-A7927	50				
IL 207 T	2500	100 ... 200		201a	-A7928	50				
IL 211 T	2500	$\geq 20$		201a	-A8251	50				
IL 212 T	2500	$\geq 50$		201a	-A8252	50				
IL 213 T	2500	$\geq 100$		201a	-A8353	50				
IL 215 T	2500	$\geq 20^1$		201a	-A7929	50				
IL 216 T	2500	$\geq 50^1$		201a	-A7930	50				
IL 217 T	2500	$\geq 100^1$		201a	-A7931	50				
IL 221 T	2500	$\geq 100^1$		201b	-A8254	50				
IL 222 T	2500	$\geq 200^1$		201b	-A8255	50				
IL 223 T	2500	$\geq 500^1$		201b	-A8256	50				
IL 256 T	2500	$\geq 20$		AC input	201c	-A8372	50			

### SMD-Koppler (ähnlich P-DIP-4-Gehäuse, gegurtet)

### SMD Couplers (similar to P-DIP-4 Package, taped)

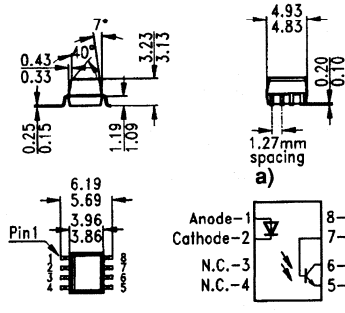
Typ	$V_{IO}$	$I_C/I_F$	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.	min. bis/to 99	100 bis/to 499	500 bis/to 2999
▼ SFH 6106-1T	5300	40 ... 80	E 52744	202a	Q68000- -A7775-T	100			
▼ SFH 6106-2T	5300	63 ... 125		202a	-A7776-T	100			
▼ SFH 6106-3T	5300	100 ... 200		202a	-A7777-T	100			
▼ SFH 6106-4T	5300	160 ... 320		202a	-A7778-T	100			
▼ SFH 6116-1T	5300	40 ... 80		202b	-A8622-T	100			
▼ SFH 6116-2T	5300	63 ... 125		202b	-A8623-T	100			
▼ SFH 6116-3T	5300	100 ... 200		202b	-A8624-T	100			
▼ SFH 6116-4T	5300	160 ... 320		202b	-A8625-T	100			
▼ SFH 6156-1T	5300	40 ... 80		202c	-A8626-T	100			
▼ SFH 6156-2T	5300	63 ... 125		202c	-A8627-T	100			
▼ SFH 6156-3T	5300	100 ... 200		202c	-A8628-T	100			
▼ SFH 6156-4T	5300	160 ... 320		202c	-A8629-T	100			

■ = SMD (Surface Mounted Device)

<sup>1)</sup>  $I_F = 1 \text{ mA}$

**IL 205 T ... IL 256 T**

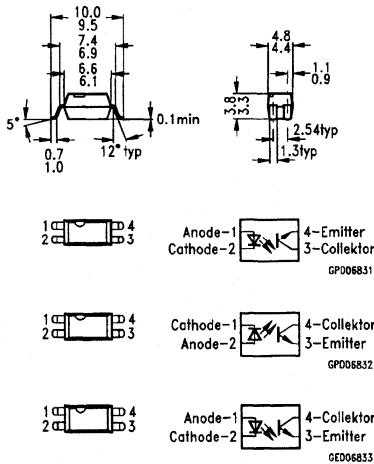
**Bild/Figure 201**



Pin	Function
1	Anode
2	Cathode
3	NC
4	NC
5	Emitter
6	Collector
7	Base
8	NC

**SFH 6106 T, SFH 6116 T, SFH 6156 T**

**Bild/Figure 202**



**Optokoppler**  
**Opto Couplers**

Typ Type	$V_{IO}$	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999
	V	%				Min.			

**Schnelle Koppler**  
**High-Speed Couplers**

6N 135	2500	$\geq 7$	} E 52744	203	Q68000-A7961	50			
6N 136	2500	$\geq 19$		203	Q68000-A5646	50			
SFH 6135	5300	$\geq 7$		203	Q62703-N135	50			
SFH 6136	5300	$\geq 19$		203	Q62703-N133	50			

Typ Type	dv/dr	$I_{FT}$	$I_T$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999
	V/ $\mu\text{s}$	mA	$A_{RMS}$			Min.			

**Optotriac mit Nullpunktschalter bei  $V_{IO} = 6,0 \text{ kV}$ ,  $V_{DRM/RRM} = 600 \text{ V}$**   
**Optotriac with Zero Crossing Switch at  $V_{IO} = 6.0 \text{ kV}$ ,  $V_{DRM/RRM} = 600 \text{ V}$**

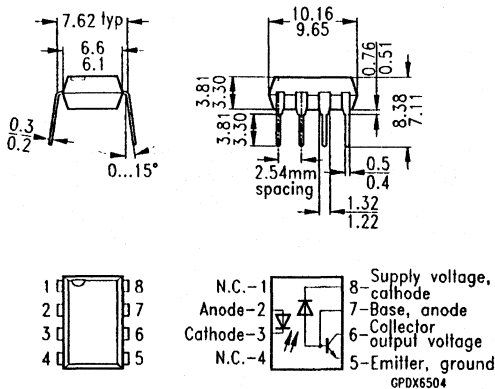
IL 410	10000	2	0.3	204	Q68000-A8476	50			
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**Optotriac ohne Nullpunktschalter bei  $V_{IO} = 6,0 \text{ kV}$ ,  $V_{DRM/RRM} = 600 \text{ V}$**   
**Optotriac without Zero Crossing Switch at  $V_{IO} = 6.0 \text{ kV}$ ,  $V_{DRM/RRM} = 600 \text{ V}$**

IL 420	10000	2	0.3	205	Q68000-A8477	50			
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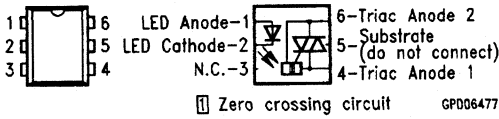
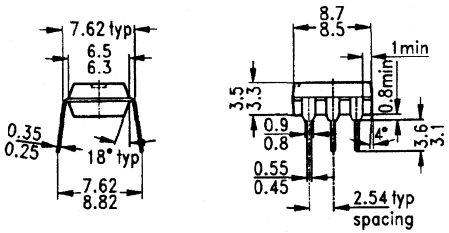
**6N 135, 6N 136, SFH 6135, SFH 6136**

**Bild/Figure 203**



IL 410

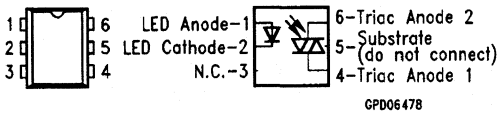
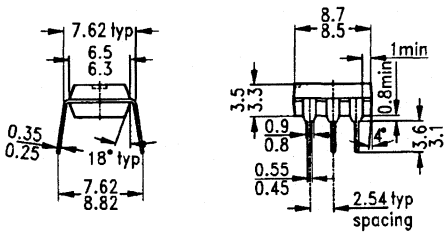
Bild/Figure 204



8

IL 420

Bild/Figure 205



**Optokoppler**  
**Opto Couplers**

Typ Type	$V_{IO}$  V	$I_C/I_F$ $I_F = 10 \text{ mA}$ $V_{CE} = 5 \text{ V}$ %	VDE UL-No.	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
							min. bis/to 99	100 bis/to 499	500 bis/to 2999

**Zweifachkoppler**  
**Dual-Channel Couplers**

ILCT 6	5300	$\geq 20$	E 52744	206a	Q62703- -N48	50			
ILD 1	5300	$\geq 20$		206a	Q68000- -A5972	50			
ILD 2	5300	$\geq 100$	E 52744	206a	-A4357	50			
ILD 5	5300	$\geq 50$		206a	-A8024	50			
ILD 30	5300	$\geq 100$		206c	-A4377	50			
ILD 55	5300	$\geq 100$	E 52744	206c	-A4378	50			
ILD 74	5300	$\geq 12.5$		206a	-A5973	50			
ILD 610-2	2800	63 ... 125	E 52744 AC-input	206b	-A4468	50			
ILD 610-3	2800	100 ... 200		206b	-A6542	50			
ILD 620	6000	50 ... 600 <sup>1)</sup>	E 52744	206d	-A8464	50			
ILD 621	6000	50 ... 600 <sup>1)</sup>	E 52744	206e	-A8465-	50			

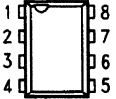
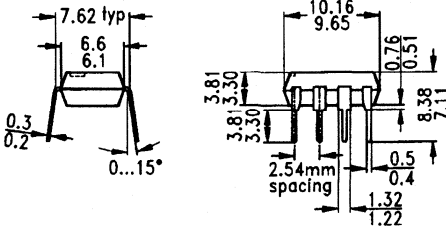
**Vierfachkoppler**  
**Quad-Channel Couplers**

ILQ 1	5300	$\geq 20$	E 52744	207a	Q68000- -A5974	25			
ILQ 2	5300	$\geq 100$		207a	-A4358	25			
ILQ 5	5300	$\geq 50$		207a	-A7995	25			
ILQ 30	5300	$\geq 100$		208	-A4379	25			
ILQ 55	5300	$\geq 100$		208	-A4380	25			
ILQ 74	5300	$\geq 12.5$	E 52744 AC-input	207a	-A6185	25			
ILQ 620	6000	50 ... 60 <sup>1)</sup>		207b	-A8454	25			
ILQ 621	6000	50 ... 60 <sup>1)</sup>	E 52744	207c	-A8455	25			

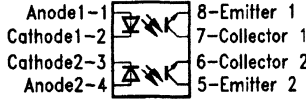
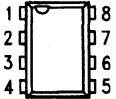
<sup>1)</sup>  $I_F = 5 \text{ mA}$

**ILCT 6, ILD 1 ... ILD 621**

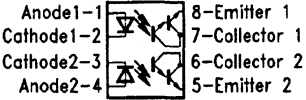
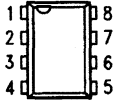
**Bild/Figure 206**



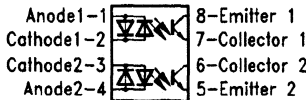
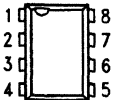
GPD06701



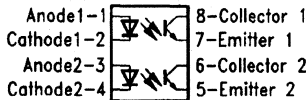
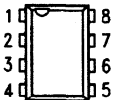
GPD06348



GPD06344



GPD06507

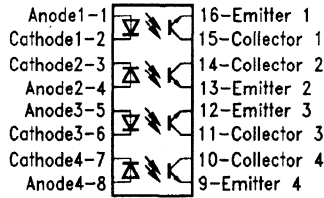
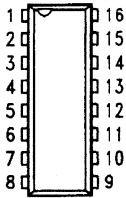
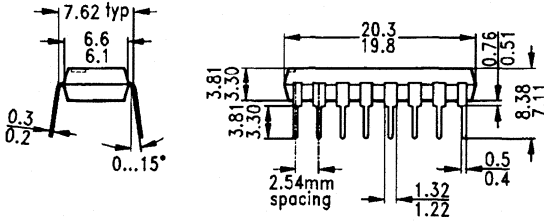


GPD06506

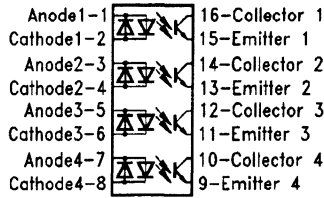
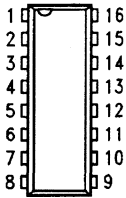


ILQ 1 ... ILQ 5, ILQ 74 ... ILQ 621

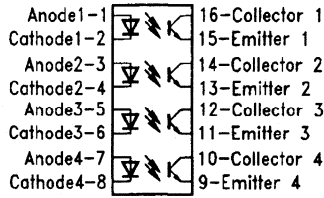
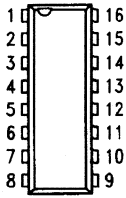
Bild/Figure 207



GPD06702



GPD06509

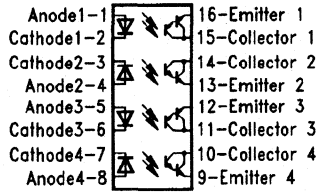
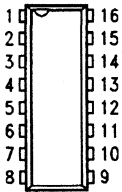
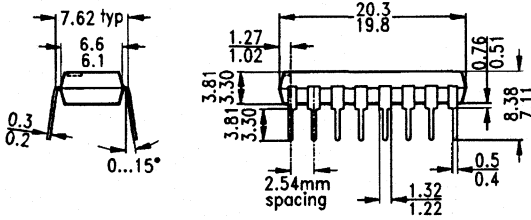


GPD06508



ILQ 30, ILQ 55

Bild/Figure 208



GPD06345

**Lichtwellenleiter-Bauelemente**  
**Fibre-Optic Components**

für Glasfaseranwendungen  
for glass fiber applications

Typ Type	$\Phi_{in}$  $\mu W$	$t_r$ $I_F = 100 \text{ mA}$ ns	$t_f$ $I_F = 100 \text{ mA}$ ns	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
							min. bis/to 24	25 bis/to 99	100 bis/to 499

**Emittor für LWL-Anwendung (Stufenindexfaser 200  $\mu m$   $\varnothing$ , NA = 0,4; IF = 100 mA)**

**Emittor for Fibre-Optic Communication (Stepindex fibre 200  $\mu m$   $\varnothing$ , NA = 0.4; IF = 100 mA)**

SFH 407-3	90 ( $\geq 63$ )	50	40	212	Q62702- -P854	5			
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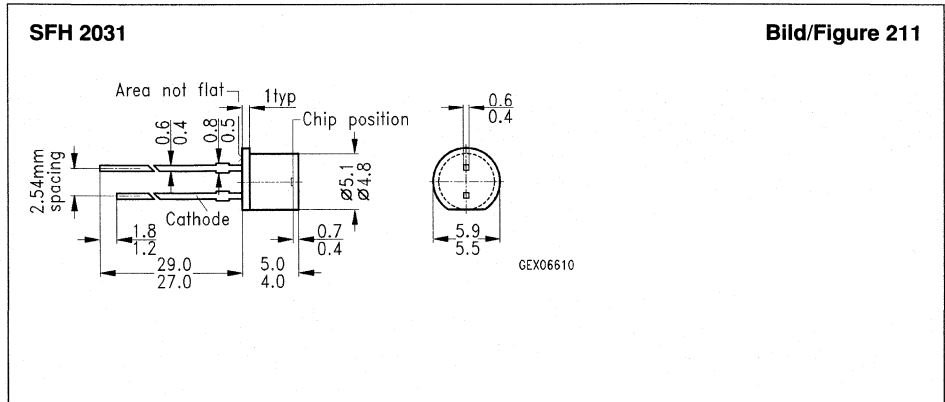
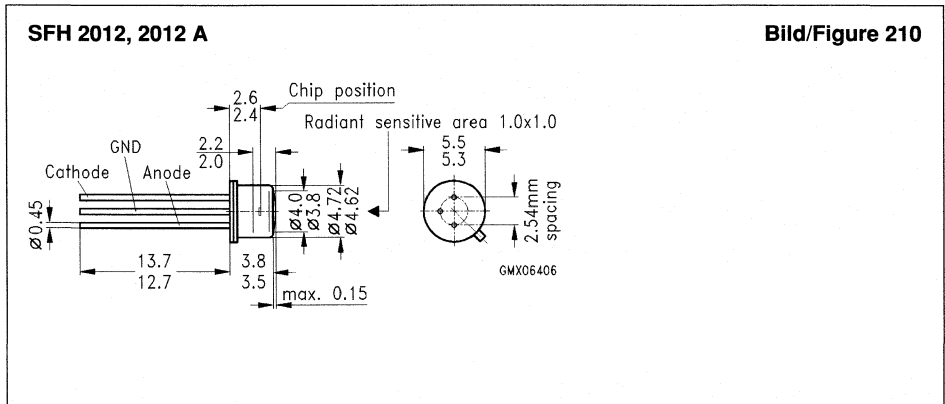
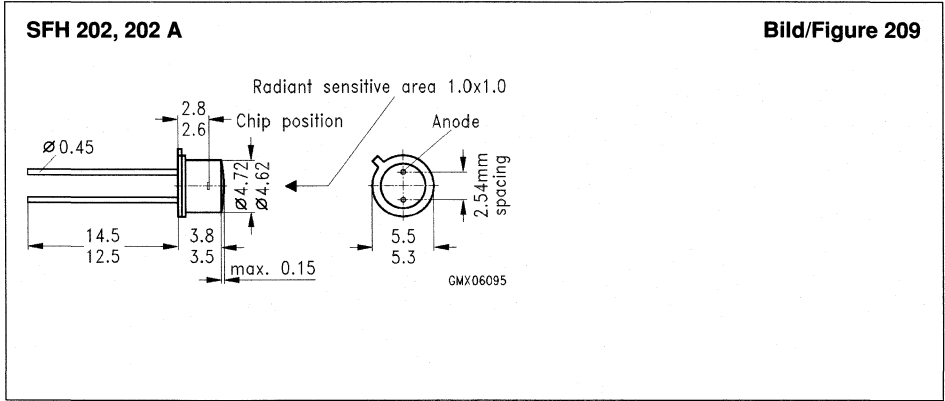
Typ Type	$V_R$  V	$f_{co}$  MHz	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
						min. bis/to 24	25 bis/to 99	100 bis/to 499

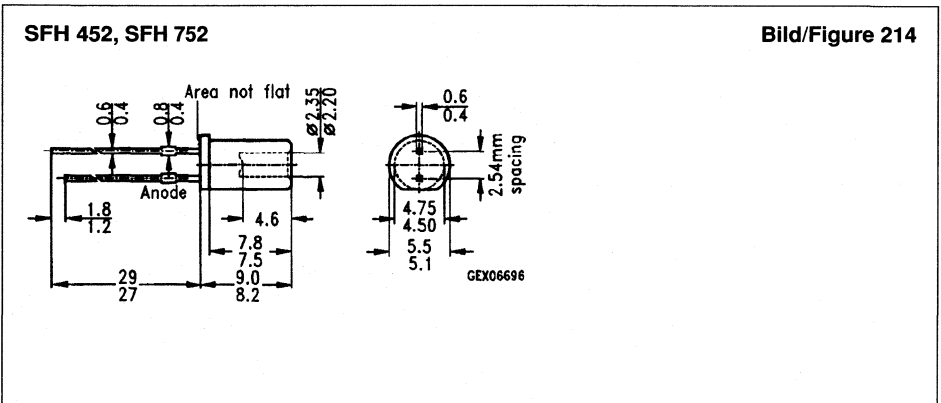
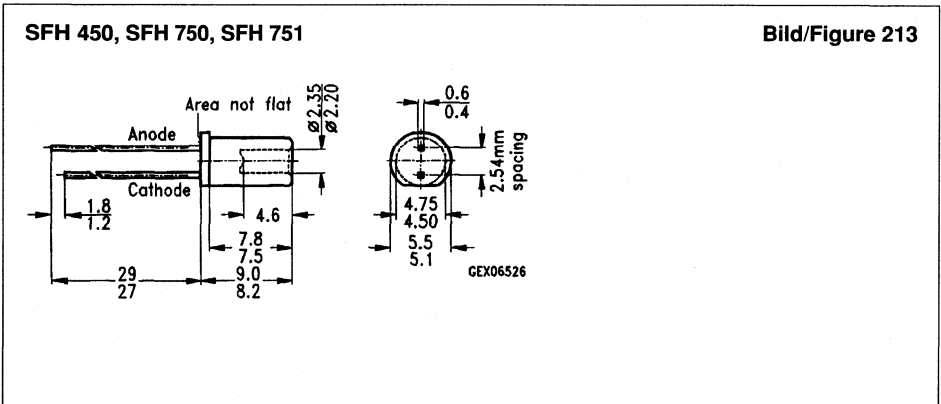
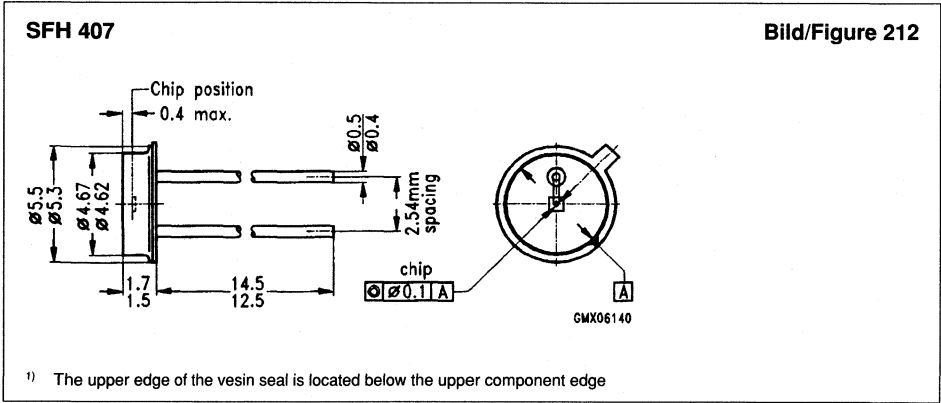
**Detektoren für LWL-Anwendungen**

**Detectors for Fibre-Optic Communication**

$\lambda_{smax} = 850 \text{ nm}$ ;  $S_\lambda = 0.55 (\geq 0.45) \text{ A/W}$

SFH 202	50	500	209	Q62702- -P91	5			
SFH 202 A	50	200	209	-P71	5			
SFH 2012	50	500	210	-P964	5			
SFH 2012 A	50	200	210	-P1115	5			
SFH 2031	50	500	211	-P1082	5			





**Lichtwellenleiter-Bauelemente**  
**Fibre-Optic Components**

für Plastikfaseranwendungen  
for plastic fiber applications

Typ Type	$\Phi_{in}$ Plastic- faser Plastic Fibre $\mu W$	$\lambda_{peak}$ nm	$t_r$ $\mu s$	$t_f$ $\mu s$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
								Min.	min. bis/to 24	25 bis/to 99

**Lichtleiter-Dioden (Emittor)** (Faserenden poliert; IF = 10 mA)  
**Light-Link Diodes (Emittor)** (polished fibre ends; IF = 10 mA)

SFH 450	90	950	1	1	213	Q62702- -P1034	50			
SFH 452	180	770	0.04	0.04	214	-P280	10			
SFH 750	9	660	0.12	0.05	213	-P1031	50			
■ SFH 751	3	560	0.5	0.2	213	-P1032	50			
SFH 752	80	665	0.07	0.1	214	-P210	10			

**Lichtleiter-Dioden (Emittor) mit Schraubverschluß**  
**Light-Link Diodes (Emittor) with Screw Connection**

SFH 450 V	90	950	1	1	215	Q62702- -P265	15			
SFH 452 V	180	770	0.04	0.04	215	-P281	10			
SFH 750 V	9	660	0.12	0.05	215	-P266	15			
SFH 752 V	80	665	0.07	0.1	215	-P284	10			

**8**

Typ Type	$I_p$ $V_R = 5 V$ $\mathcal{O}_{in} = 10 \mu W$ $\mu A$	$\lambda_{Smax}$ nm	$V_{Rmax}$ V	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
							Min.	min. bis/to 24	25 bis/to 99

**Lichtleiter-Diode (Detektor)**  
**Light-Link Diodes (Detector)**

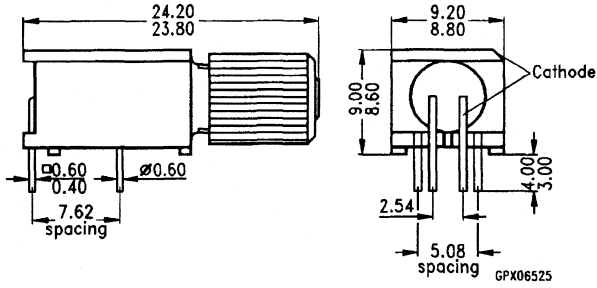
SFH 250	3.0 ( $\lambda = 660 \text{ nm}$ )	850	30	216	Q62702- -P1012	20			
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**Lichtleiter-Diode (Detektor) mit Schraubverschluß**  
**Light-Link Diodes (Detector) with Screw Connection**

SFH 250 V	3.0 ( $\lambda = 660 \text{ nm}$ )	850	30	215	Q62702- -P263	10			
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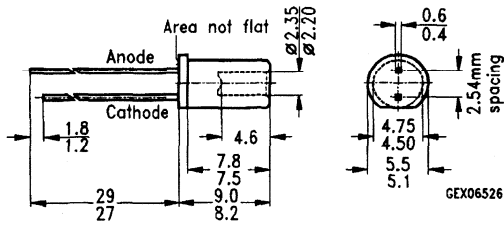
SFH 250 V, SFH 450 V, SFH 452 V, 750 V, 752 V

Bild/Figure 215



SFH 250

Bild/Figure 216



**Lichtwellenleiter-Bauelemente**  
**Fibre-Optic Components**

für Plastikfaseranwendungen  
for plastic fiber applications

Typ Type	$I_{CE}$  $\mu A$	$\lambda_{Smax}$  nm	$V_{CEO}$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
							min. bis/to 24	25 bis/to 99	100 bis/to 499

**Lichtleiter-Transistor (Detektor)**  
**Light-Link Transistor (Detector)**

SFH 350	0,8 ( $\lambda = 660 \text{ nm}$ )	850	50	217	Q62702- -P1033	50			
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**Lichtleiter-Transistor (Detektor) mit Schraubverschluß**  
**Light-Link Transistor (Detector) with Screw Connection**

SFH 350 V	0,8 ( $\lambda = 660 \text{ nm}$ )	850	50	218	Q62702- -P264	15			
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Typ Type	Übertragungsrate Transmission Rate  Mbit/s	$\varnothing_{opt}^{1)}$  $\mu W$	$t_{PHL}, t_{PLH}$  ns	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.  Min.			
							min. bis/to 24	25 bis/to 99	100 bis/to 499

**Lichtleiter-Digitalempfänger (TTL-kompatibel)**  
**Light-Link Digital Emitter (TTL Compatible)**

SFH 551	5	4 ... 50	75	219	Q62702- -P1161	10			
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**Lichtleiter-Digitalempfänger (TTL-kompatibel) mit Schraubverschluß**  
**Light-Link Digital Emitter (TTL Compatible) with Screw Connection**

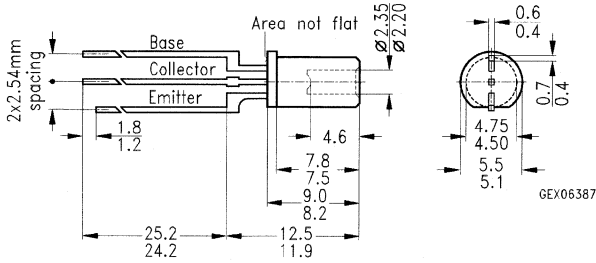
SFH 551 V	5	4 ... 50	75	220	Q62702- -P287	10			
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<sup>1)</sup> Optische Leistung für »Low« gemessen am Faserende/Optical output for »Low« measured at fibre end

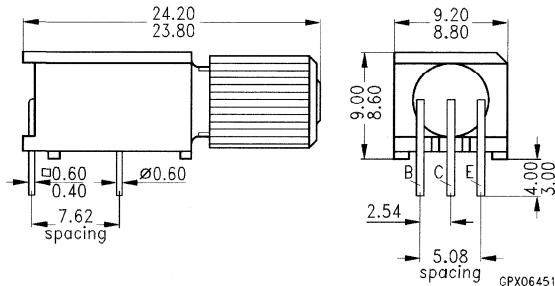
**SFH 350**

**Bild/Figure 217**



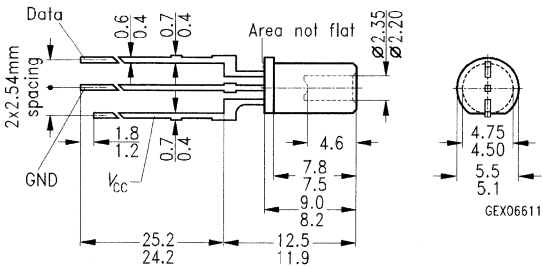
**SFH 350 V**

**Bild/Figure 218**



**SFH 551**

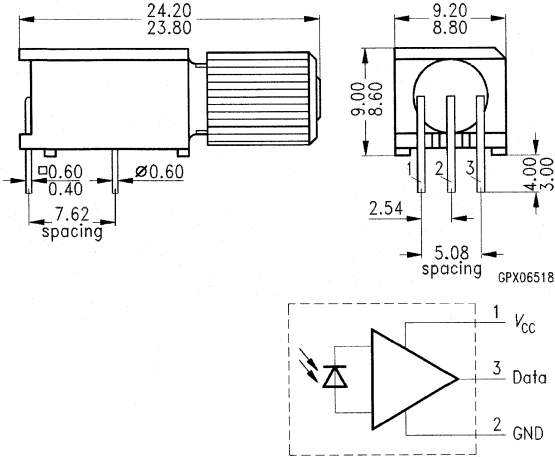
**Bild/Figure 219**





**SFH 551 V**

**Bild/Figure 220**







**Symbole und Begriffe**  
**Symbols and Terms**

<b>Symbol</b>	<b>Bezeichnung</b>	<b>Designation</b>
$B$	Magn. Induktion	Inductance
$F_L$	Linearitätsfehler	Linearity error
$I_{OUT}$	Ausgangsstrom	Output current
$I_{1\max}$	Max. zul. Steuerstrom in ruhiger Luft	Max. permissible supply current in still air
$I_{1N}$	Steuerstromnennwert	Rated supply current
$I_N$	Nennstrom	Rated current
$M$	Mittensymmetrie	Center symmetry
$p_{\max}$	Überlastdruck	Max. pressure
$R_{\text{tot}}$	Gesamtwiderstand (Potentiometer)	Total resistance (potentiometer)
$R_B$	Brückenwiderstand	Bridge resistance
$R_B/R_0$	Faktor der Widerstandsänderung	Factor of rel. resistance change
$R_0$	Grundwiderstand	Basic resistance
$R_{1-3}$	Gesamtwiderstand	Total resistance
$R_{10}$	Steuerseitiger Innenwiderstand	Supply-side internal resistance
$R_{20}$	Hallseitiger Innenwiderstand	Hall-side internal resistance
$R_{25}$	Grundwiderstand bei $T_A = 25\text{ °C}$	Basic resistance at $T_A = 25\text{ °C}$
$T_{\max}$	Max. zul. Temperatur	Max. permissible temperature
$T_A$	Umgebungstemperatur	Ambient temperature
$V_{OUT}$	Ausgangsspannung	Output voltage
$V_{OUT\text{ pp}}$	Leerlaufspannung (Spitze-Spitze)	Open-circuit output voltage
$V_{IN}$	Speisespannung	Supply voltage
$V_{20}$	Leerlaufhallspannung	Open-circuit hall voltage
$\varphi$	Linearer Drehwinkel	Linear angle of rotation
$\Delta p$	Druckbereich	Pressure range

**Umrechnungstabelle von Druckeinheiten**  
**Conversion Table for Pressure Units**

1 bar =	14,504 psi
	10,2 mH <sub>2</sub> O
	1,02 at
	0,987 atm
	1,02 kp/cm <sup>2</sup>
	750 mmHg (Torr)
	10 <sup>5</sup> N/m <sup>2</sup>
	100 kPa

**Feldplatten**  
**Magneto-resistive Sensors**

Typ Type	$R_0$ $T_A = 25\text{ °C}$ $\pm 20\%$	$M$ $T_A = 25\text{ °C}$	$R_B/R_0$ $T_A = 25\text{ °C}$ $B = \pm 1\text{ T}$	$T_{max}$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
	$\Omega$	%	—	°C			Min.	min. bis/to 24	25 bis/to 99	100 bis/to 499

**Einzel-Feldplatten auf Eisenträger**  
**Single MRs on Iron Substrate**

						Q65030-				
■ FP30D 250E	250	—	> 12	110	221	-D250-E	10			
■ FP30L 100E	100	—	> 7	110	221	-L100-E	10			
■ FP30N 60E	60	—	> 5	110	221	-N60-E	10			

**Differential-Feldplatten auf Eisenträger**  
**Differential MRs on Iron Substrate**

						Q65110-				
■ FP110D 155	2 × 155	< 5	> 12	110	222	-D155-D	10			
■ FP110L 60	2 × 60	< 5	> 7	110	222	-L60-D	10			
■ FP111L 100	2 × 100	< 5	> 5	110	223	-L100-D	10			

Typ Type	$R_{1-3}$ $T_A = 25\text{ °C}$	$V_{IN}$ max	$V_{OUT_{pp}}$ $T_A = 25\text{ °C}$ $V_{IN} = 5\text{ V}$	Bild Fig.	Bestellnumm er Ordering Code	Stck. Pcs.				
	$\Omega^1)$	V	V			Min.	min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 499

**Feldplatten-Differential-Fühler**  
**MR Differential Sensors**

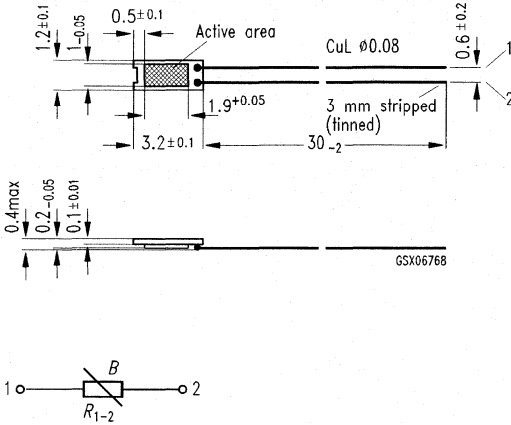
						Q65210-				
FP201L100	700 ... 1400	10	$\geq 2.2$	224	-L101	2				
FP210L100-2	220 ... 380	7.5	$\geq 0.85$	225	-L100-W2	2				
▼ FP210L100-22 <sup>2)</sup>	220 ... 380	7.5	$\geq 1.0$	225	-L100-W4	2				
FP210D250-2	700 ... 1300	7.5	$\geq 0.85$	225	-D250-W1	2				
▼ FP210D250-22 <sup>3)</sup>	700 ... 1300	7.5	$\geq 1.1$	225	-D250-W5	2				
FP211D155-2	360 ... 680	5	$\geq 0.5$	226	-D1552	5				
FP212L100-22	220 ... 400	10	$\geq 1.0$	227	-L1004	5				
FP212D250-22	1000 ... 1600	10	$\geq 1.1$	227	-D2504	5				
FP213D105	240 ... 540	5	$\geq 0.4$	228	-D105	5				

1) Luftspalt zum Ansteuerteil  $\delta = \infty$   
Air gap to driving element  $\delta = \infty$   
2) Nachfolgetyp für FP210L100-2 (ab ca. Juni 92)  
Replacement for FP210L100-2 (June 92)  
3) Nachfolgetyp für FP210D250-2 (ab ca. Juni 92)  
Replacement for FP210D250-2 (June 92)

# Halbleiter-Sensoren Semiconductor Sensors

FP30D 250E, FP30L 100E, FP30N 60E

Bild/Figure 221

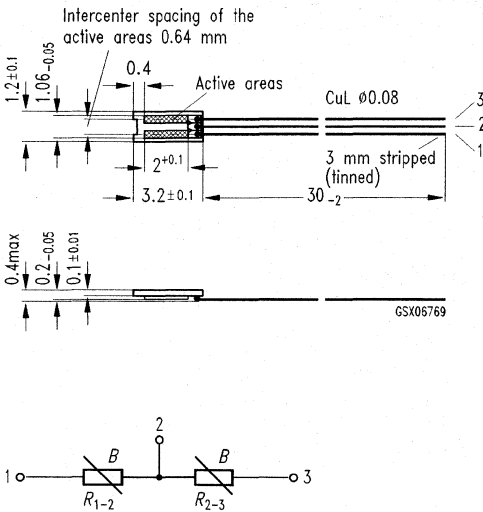


Approx. weight 0.017 g

Dimensions in mm

FP110L 60, FP110D 155

Bild/Figure 222

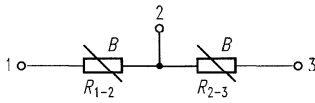
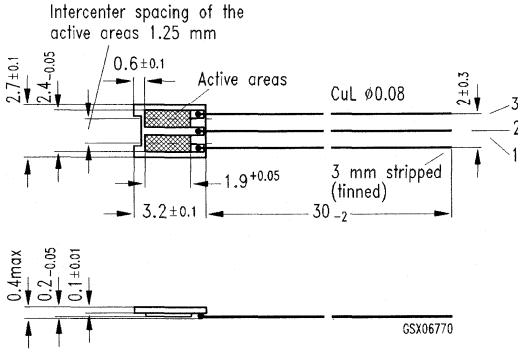


Approx. weight 0.02 g

Dimensions in mm

**FP111L 100**

**Bild/Figure 223**



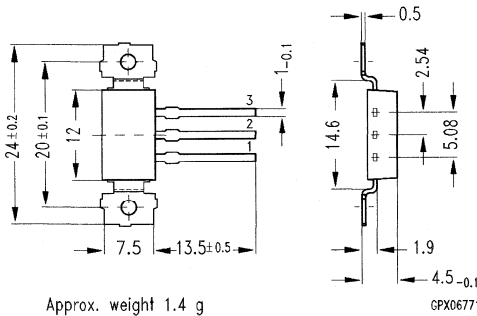
Approx. weight 0.03 g

Dimensions in mm

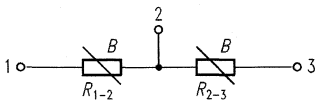
**9**

**FP201L 100**

**Bild/Figure 224**



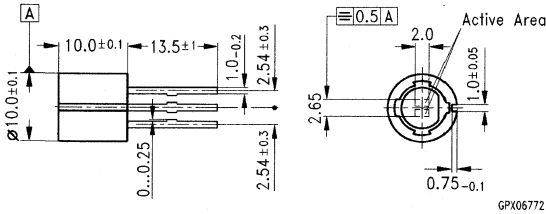
Approx. weight 1.4 g



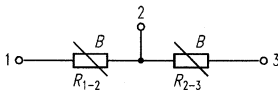
# Halbleiter-Sensoren Semiconductor Sensors

FP 210L100-2, FP 210L100-22, FP 210D250-2, FP 210D250-22

Bild/Figure 225



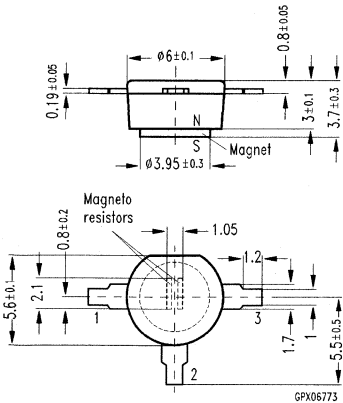
Active area intercentre spacing =  $1.60 \pm 0.01$  mm



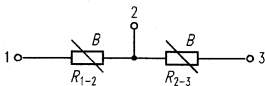
Approx. weight 2.4 g

FP 211D155-2

Bild/Figure 226



MR intercentre spacing =  $0.64 \pm 0.01$  mm

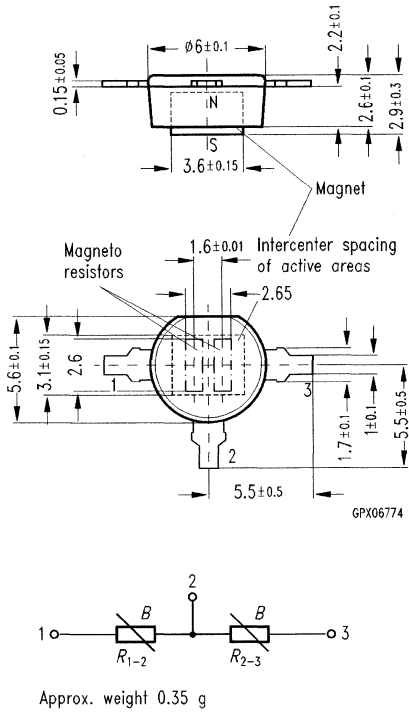


Approx. weight 0.35 g



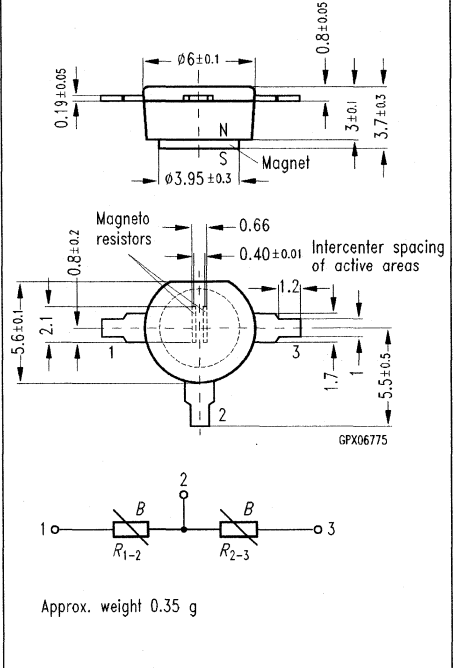
**FP 212L100-22**  
**FP 212D250-22**

**Bild/Figure 227**



**FP 213D105**

**Bild/Figure 228**



# Halbleiter-Sensoren Semiconductor Sensors

## Feldplatten Magnetoresistive Sensors

Typ Type	$R_{1-3}$ $T_A = 25^\circ\text{C}$ $\pm 20\%$	$M$ $T_A = 25^\circ\text{C}$ %	$R_E/R_0$ $T_A = 25^\circ\text{C}$ $B = \pm 1\text{T}$ -	$T_{\text{max}}$ °C	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								Min.	min. bis/to 9	10 bis/to 24	25 bis/to 99

### Differential-Feldplatten Differential MRs

FP 410 L (4 × 80) FM	100 ... 220*	≤ 10	> 7	175	229	Q65110- -L80-F Q65412- -D250	5				
FP 412 D250	370 ... 630	≤ 10	> 12	175	230	-D250	5				
FP 412 L100	150 ... 250	≤ 10	> 7	175	230	-L100	5				
FP 414 L300	500 ... 700	≤ 10	> 7	175	231	Q65414- -L300	5				

Typ Type	$V_{\text{IN}}$ V	$\Phi$ Grad Degrees	$I_{\text{OUT}}$ mA	$R_{\text{tot}}$ Ω	$F_L$ %	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.		
									Min.	min. bis/to 9

### Feldplatten-Potentiometer ohne Verstärker MR Potentiometer without Amplifier

FP 312L100	8	75	40	850	2.5	232	Q65312- -L100-U	1		
------------	---	----	----	-----	-----	-----	--------------------	---	--	--

### Feldplatten-Potentiometer mit Verstärker MR Potentiometer with Amplifier

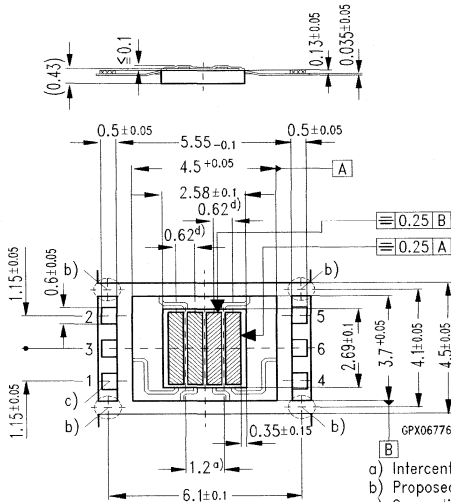
FP310L100-30	15	0 ... 30	0 ... 20	-	1	233	Q65310- -L100-U30	1		
FP310L100-75	15	0 ... 75	0 ... 20	-	2	233	-L100-U75	1		
Wasserdichter Stecker für FP 310/312 Watertight Plug for FP 310/312						-	Q62902- -B146	5		

\*  $R_{1-3} \cong R_{4-6}$

1) Luftspalt zum Ansteuerenteil  $\delta = \infty$   
Air gap to driving element  $\delta = \infty$

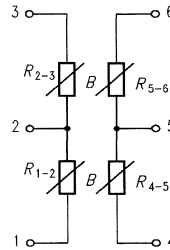
**FP 410L (4 × 80) FM**

**Bild/Figure 229**



Approx. weight 0.2 g  
 Dimensions in mm

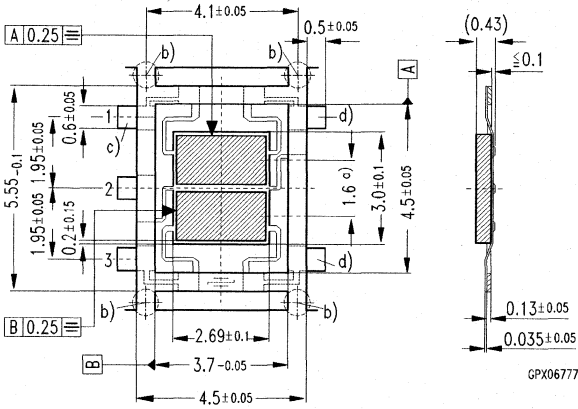
- a) Intercentre spacing of the differential systems  $1.2 \text{ mm} \pm 0.01$
- b) Proposed separating area
- c) Connections free of lacquer on both sides
- d) Intercentre spacing of each differential system  $0.62 \text{ mm} \pm 0.01$



# Halbleiter-Sensoren Semiconductor Sensors

FP 412D250, FP 412L100

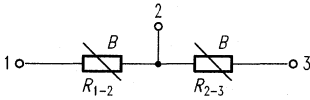
Bild/Figure 230



Approx. weight 0.2 g

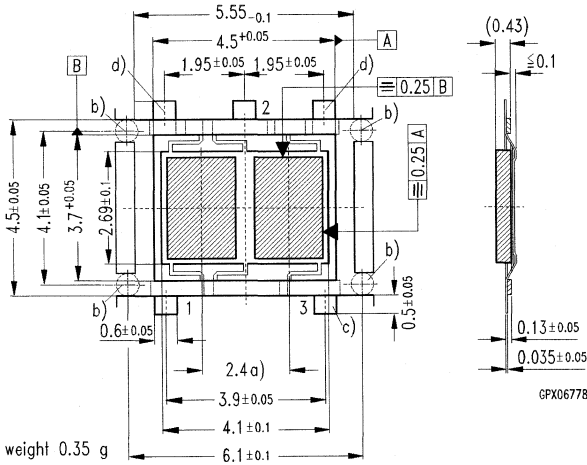
- a) Intercenter spacing of the differential systems  $1.6\text{mm} \pm 0.01$
- b) Proposed separating area
- c) Connections free of lacquer on both sides
- d) Mechanical connection

Dimensions in mm



**FP 414L300**

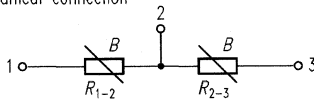
**Bild/Figure 231**



Approx. weight 0.35 g

- a) Intercenter spacing of the differential systems 2.4mm ± 0.01
- b) Proposed separating area
- c) Connections free of lacquer on both sides
- d) Mechanical connection

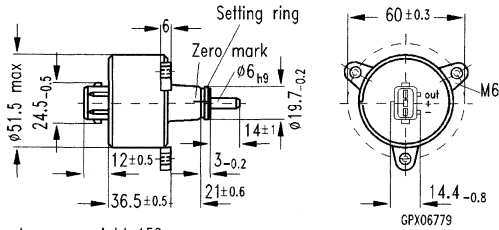
Dimensions in mm



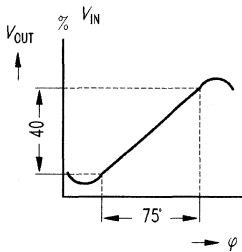
# Halbleiter-Sensoren Semiconductor Sensors

FP 312L100

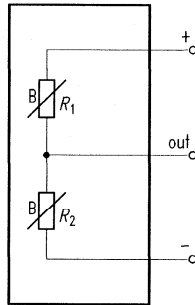
Bild/Figure 232



Approx. weight 150 g

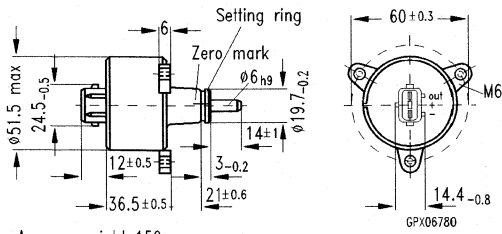


Differential  
MR

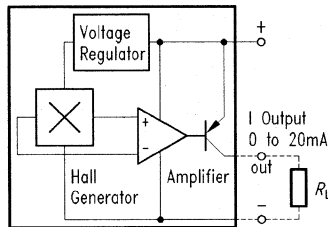
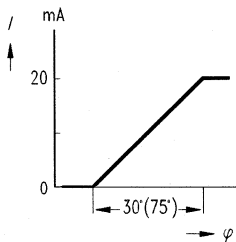


**FP 310L100-30, FP 310L100-75**

**Bild/Figure 233**



Approx. weight 150 g



# Halbleiter-Sensoren Semiconductor Sensors

## Hallgeneratoren Hall Generators

Typ Type	$V_{20}$ $I_{1N}$ B = 1 T	$I_{1N}$	$T_A$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.		
							min. bis/to	–
	mV	mA	°C			Min.	9	

### Hallfeldsonden hoher Genauigkeit High-Precision Hall Field Probes

					Q64099-		
SBV 525	≥ 97	100	-20 ... + 90	234	-V525	1	
SBV 603 <sup>1)</sup>	≥ 210	50	-20 ... + 80	235	-V615	1	
SBV 604 <sup>2)</sup>	≥ 210	50	-20 ... + 90	236	-V616	1	
SBV 613 <sup>3)</sup>	≥ 120	250	-20 ... + 80	235	-V617	1	
SBV 620 <sup>4)</sup>	≥ 600	80	-20 ... + 160	237	-V620	1	

### Axialfeldsonde Axial Field Probe

					Q61708-		
RHY 10	≥ 70	100	-20 ... + 90	238	-Y10	1	
RHY 11	≥ 105	150	-20 ... + 90	239	-Y11	1	

<sup>1)</sup> Nachfolgetyp für EA 218; FA 24

Replacement for EA 218; FA 24

<sup>2)</sup> Nachfolgetyp für FA 22 e

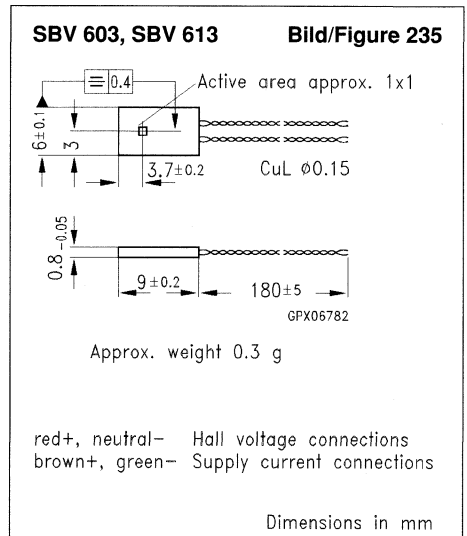
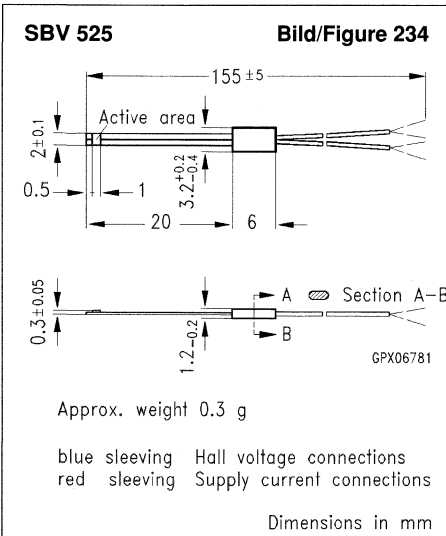
Replacement for FA 22 e

<sup>3)</sup> Nachfolgetyp für FC 32 ... 34

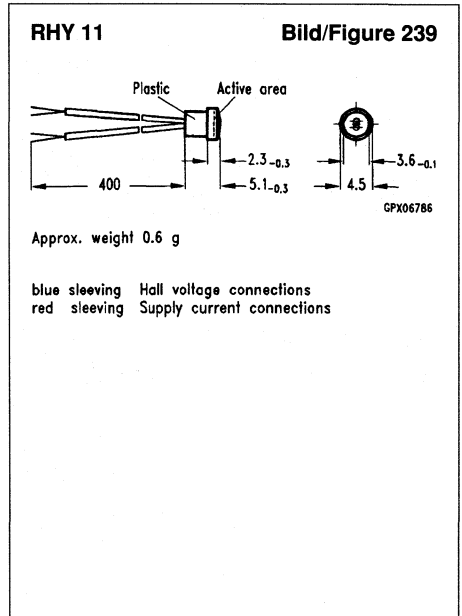
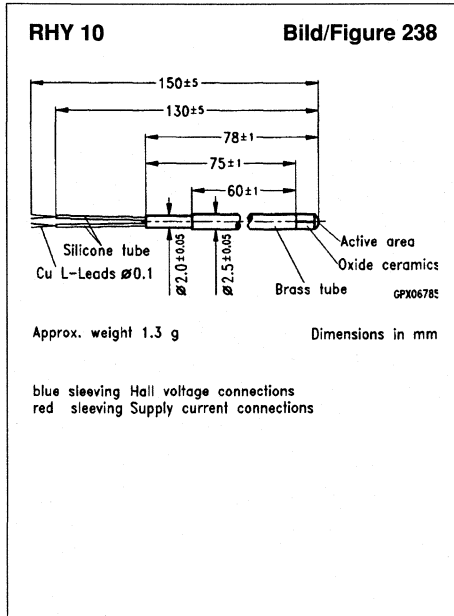
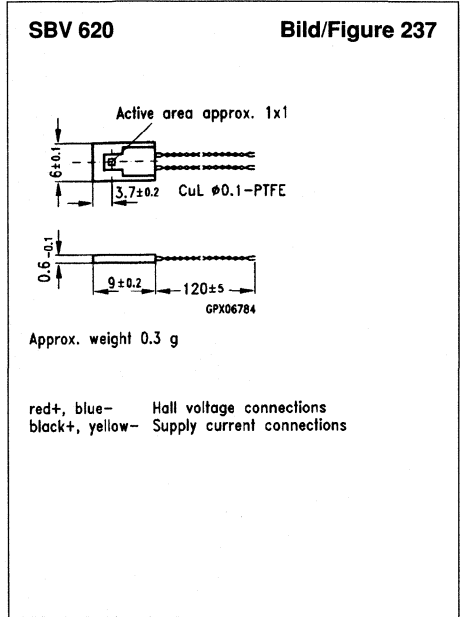
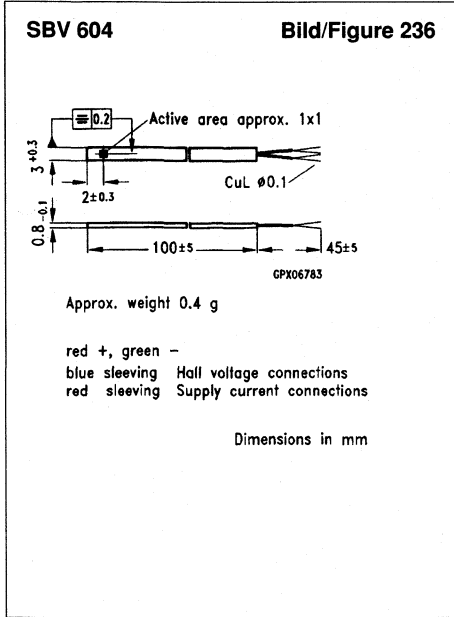
Replacement for FC 32 ... 34

<sup>4)</sup> Nachfolgetyp für SV 210/230 S/231

Replacement for SV 210/230 S/231








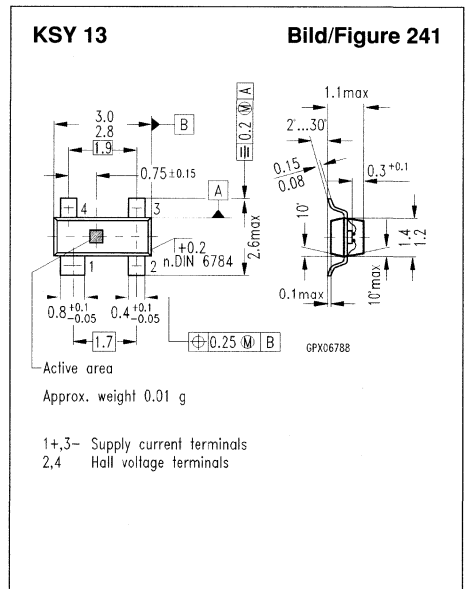
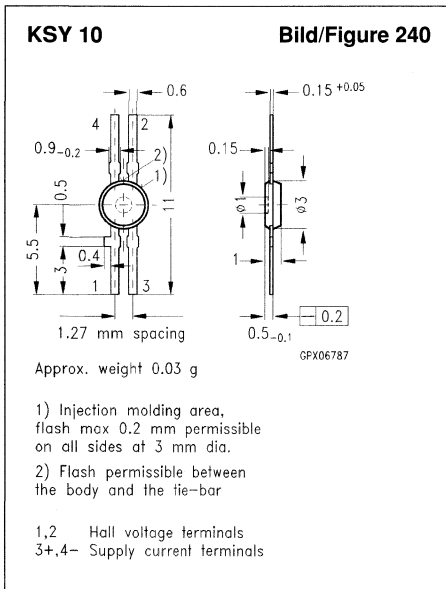
## Hallgeneratoren Hall Generators

Typ Type	$I_{max}$	$V_{20}$ $I_{1N} = 5 \text{ mA}$ $B = 0.1 \text{ T}$	$R_{10}, R_{20}$	$T_A$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
								min. bis/to	25 bis/to	100 bis/to
	mV	mV	$\Omega$	$^{\circ}\text{C}$			Min.	24	99	499

## Positions-Sensoren Position Sensors

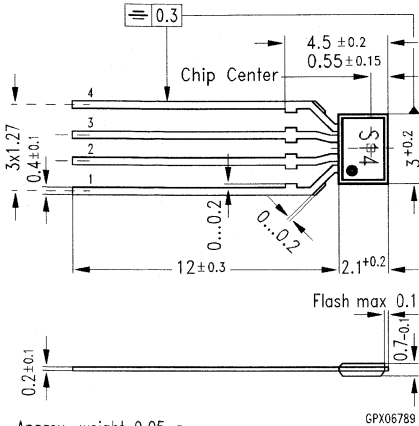
						Q62705-			
KSY 10	7	85 ... 115	900 ... 1200	- 40 ... 150	240	-K38	10		
KSY 13	7	95 ... 145	900 ... 1200	- 40 ... 150	241	-K209	10		
KSY 14	7	85 ... 130	900 ... 1200	- 40 ... 175	242	-K227	10		

 = SMD (Surface Mounted Device)



KSY 14

Bild/Figure 242



Approx. weight 0.05 g

GPX06789

- 1-, 2+ Supply current terminals
- 3, 4 Hall voltage terminals

# Halbleiter-Sensoren Semiconductor Sensors

## Temperatur-Sensoren Temperature Sensors

Typ Type	$R_{25}$ $T_A = 25\text{ °C}$ $I_N = 1\text{ mA}$ $\Omega$	$R_{25}$ - Tol %	$T_A$ °C	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
							min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999
					Q62705-					
KTY 10*	2000	± 4	- 50 ... 150	243	-K107	50				
KTY 10-5	1970	± 1	- 50 ... 150	243	-K110	50				
KTY 10-6	2000	± 1	- 50 ... 150	243	-K132	50				
KTY 10-7	2030	± 1	- 50 ... 150	243	-K111	50				
KTY 11*	2000	± 4	- 50 ... 150	244	-K244	25				
KTY 11-5	1970	± 1	- 50 ... 150	244	-K245	25				
KTY 11-6	2000	± 1	- 50 ... 150	244	-K246	25				
KTY 11-7	2030	± 1	- 50 ... 150	244	-K247	25				
KTY 13*	2000	± 4	- 50 ... 150	245	-K248	50				
KTY 13-5 <sup>1)</sup>	1970	± 1	- 50 ... 150	245	-K249	25				
KTY 13-6 <sup>1)</sup>	2000	± 1	- 50 ... 150	245	-K250	25				
KTY 13-7 <sup>1)</sup>	2030	± 1	- 50 ... 150	245	-K251	25				
KTY 20*	1000	± 4	- 50 ... 150	243	-K253	50				
KTY 20-5	985	± 1	- 50 ... 150	243	-K254	50				
KTY 20-6	1000	± 1	- 50 ... 150	243	-K255	50				
KTY 20-7	1015	± 1	- 50 ... 150	243	-K256	50				
KTY 21*	1000	± 4	- 50 ... 150	244	-K257	25				
KTY 21-5	985	± 1	- 50 ... 150	244	-K258	25				
KTY 21-6	1000	± 1	- 50 ... 150	244	-K259	25				
KTY 21-7	1015	± 1	- 50 ... 150	244	-K260	25				
KTY 23*	1000	± 4	- 50 ... 150	245	-K261	50				
KTY 23-5 <sup>1)</sup>	985	± 1	- 50 ... 150	245	-K262	25				
KTY 23-6 <sup>1)</sup>	1000	± 1	- 50 ... 150	245	-K263	25				
KTY 23-7 <sup>1)</sup>	1015	± 1	- 50 ... 150	245	-K264	25				

■ = SMD (Surface Mounted Device)

Typ Type	$R_{25}$ $T_A = 25\text{ °C}$ $I_N = 1\text{ mA}$ $\Omega$	$R_{25}$ - Tol %	$T_A$ °C	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
							min. bis/to 9	10 bis/to 24	25 bis/to 99	100 bis/to 499
KTY 16-6	2000	± 1	- 50 ... 150	246	-K128	10				
▼ KTY 19-6M <sup>2)</sup>	2000	± 1	- 50 ... 150	247	-K271	5				
▼ KTY 19-6Z <sup>3)</sup>	2000	± 1	- 50 ... 150	247	-K272	5				
▼ Steckerset für: KTY 19-6 M/Z					Q62901-					
▼ Connector set for: KTY 19-6 M/Z					-B80	5				

<sup>1)</sup> Nur gegurtet lieferbar  
Delivery only taped

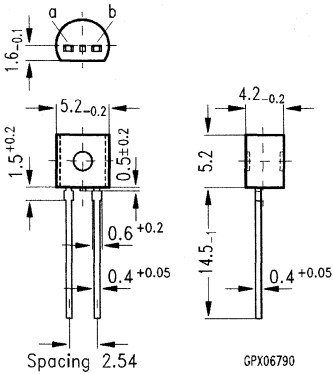
<sup>2)</sup> Nachfolgetyp für KTY 17-6  
Replacement for KTY 17-6

<sup>3)</sup> Nachfolgetyp für KTY 18-6  
Replacement for KTY 18-6

\* Pro Packungseinheit ist eine Toleranz von ± 1 % gewährleistet  
Each packaging unit contains parts grouped to ± 1 % tolerance

**KTY 10, KTY 20**

**Bild/Figure 243**

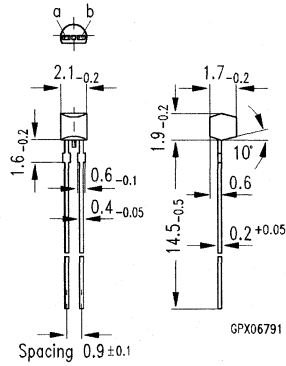


Approx. weight 0.25 g

- a electrical contact
- b electrical contact

**KTY 11, KTY 21**

**Bild/Figure 244**

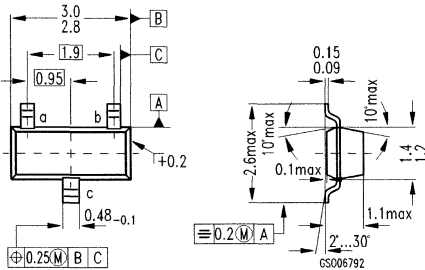


Approx. weight 0.02 g

- a electrical contact
- b electrical contact

**KTY 13, KTY 23**

**Bild/Figure 245**

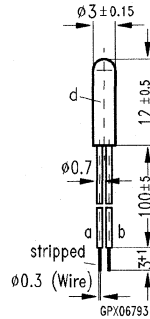


Approx. weight 0.01 g

- a electrical contact
- b electrical contact
- c Substrate (must remain potential free)

**KTY 16-6**

**Bild/Figure 246**

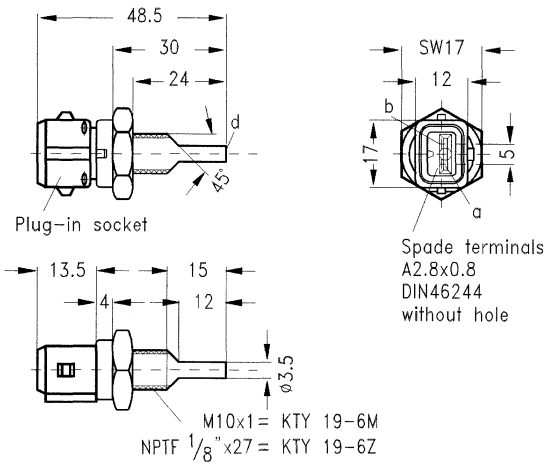


Approx. weight 0.07 g

- a electrical contact, black/BK
- b electrical contact, red/RD
- c housing: potential free

**KTY 19-6M, KTY 19-6Z**

**Bild/Figure 247**



Approx. weight 20 g      GPX06820

- a electrical contact
  - b electrical contact
  - d housing: potential free
- Material: DIN1.4301 Stainless steel

## Halbleiter-Sensoren Semiconductor Sensors

### Silizium-Druck-Sensoren Silicon Pressure Sensors

Typ Type	$P_{max}$	$\Delta p$	$R_B$	$V_{IN max}$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
	bar	bar	k $\Omega$	V				Min.	min. bis/to 9	10 bis/to 24

#### Absolutdruck-Sensoren Absolute Pressure Sensors

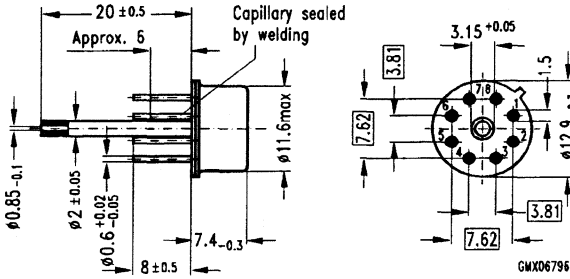
KPY 42A	6	0 ... 0.6	$\approx 6$	12	248	Q62705- -K204	1				
KPY 43A	10	0 ... 1.6	$\approx 6$	12	248	-K162	1				
KPY 44A	16	0 ... 4.0	$\approx 6$	12	248	-K164	1				
KPY 45A	30	0 ... 10	$\approx 6$	12	248	-K166	1				

#### Relativdruck-Sensoren Differential/Gauge Pressure Sensors

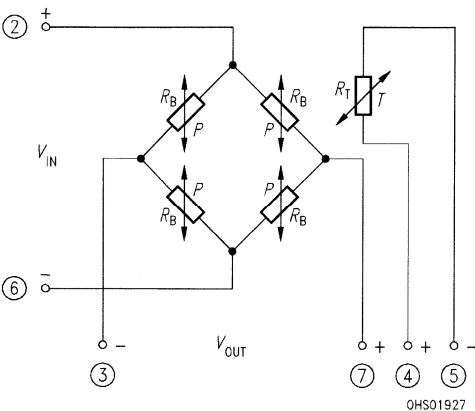
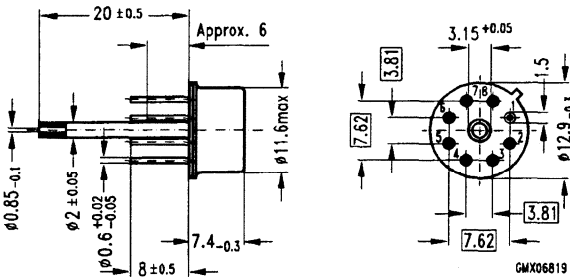
KPY 32R	0.25	0 ... 0.05	$\approx 6$	12	249	Q62705- -K150	1				
KPY 33R	0.5	0 ... 0.1	$\approx 6$	12	250	-K151	1				
KPY 41R	2.0	0 ... 0.25	$\approx 6$	12	248	-K159	1				
KPY 42R	6.0	0 ... 0.6	$\approx 6$	12	248	-K160	1				
KPY 43R	10	0 ... 1.6	$\approx 6$	12	248	-K161	1				
KPY 44R	16	0 ... 4.0	$\approx 6$	12	248	-K163	1				
KPY 45R	30	0 ... 10	$\approx 6$	12	248	-K165	1				
KPY 46R	40	0 ... 25	$\approx 6$	12	248	-K167	1				
KPY 47R	70	0 ... 60	$\approx 6$	12	248	-K169	1				

Bild/Figure 248

KPY 42A ... KPY 45A



KPY 41R ... KPY 47R



- ① Kapillarröhrchen\*)  
Capillary tube\*)
- ② +  $V_{IN}$
- ③ -  $V_{OUT}$
- ④ + Temperatursensor  
+ Temperature sensor
- ⑤ - Temperatursensor  
- Temperature sensor
- ⑥ -  $V_{IN}$
- ⑦ +  $V_{OUT}$
- ⑧ nicht belegt  
not connected

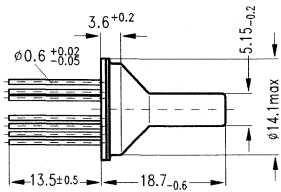
\*) geschlossen bei KPY 42A ... 45A  
sealed with KPY 42A ... 45A

offen bei KPY 41R ... KPY 47R  
open with KPY 41R ... KPY 47R

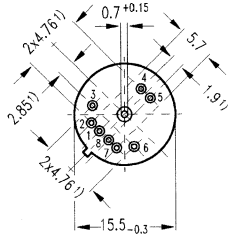
OHS01927



## KPY 32R

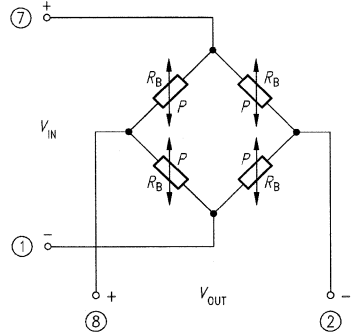


1) Spacing measured at the base  
Approx. weight 3.3 g



GMX06797

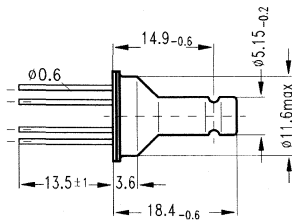
## Bild/Figure 249



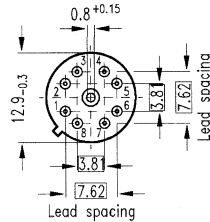
OHS01928

- ①; ⑦ Speisespannung  $V_{IN}$   
Supply voltage  $V_{IN}$
- ②; ⑧ Ausgangsspannung  $V_{OUT}$   
Output voltage  $V_{OUT}$
- ③ ... ⑤ nicht belegt  
not connected
- ⑥ Substrat (auf +  $V_{IN}$  legen!)  
Substrate (connect to +  $V_{IN}$ )

## KPY 33R

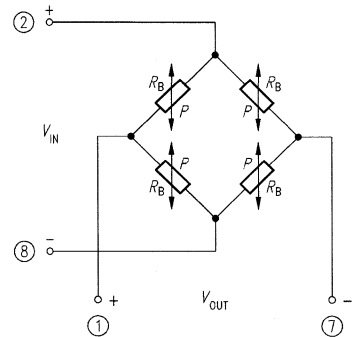


Approx. weight 2.7 g



GMX06798

## Bild/Figure 250



OHS01929

- ②; ⑧ Speisespannung  $V_{IN}$   
Supply voltage  $V_{IN}$
- ①; ⑦ Ausgangsspannung  $V_{OUT}$   
Output voltage  $V_{OUT}$
- ③ ... ⑤ nicht belegt  
not connected
- ⑥ Substrat (auf +  $V_{IN}$  legen!)  
Substrate (connect to +  $V_{IN}$ )

# Halbleiter-Sensoren Semiconductor Sensors

## Silizium-Druck-Sensoren Silicon Pressure Sensors

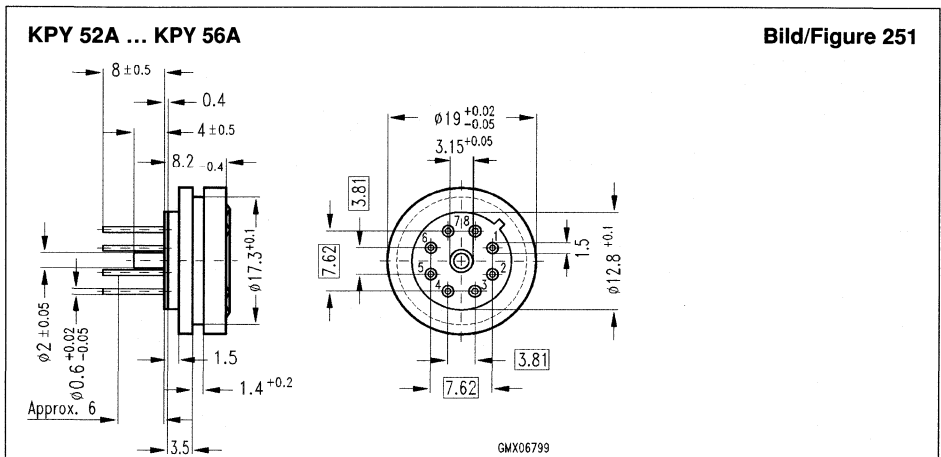
Typ Type	$P_{max}$ bar	$\Delta p$ bar	$R_B$ k $\Omega$	$V_{IN max}$ V	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.		
								Min.	10 bis/to 24

### Mediengetrennte Absolutdruck-Sensoren Media-Separated Absolute Pressure Sensors

						Q62705-			
KPY 52A	6	0 ... 0.6	$\approx 6$	12	251	-K211	1		
KPY 53A	10	0 ... 1.6	$\approx 6$	12	251	-K177	1		
KPY 54A	16	0 ... 4.0	$\approx 6$	12	251	-K179	1		
KPY 55A	30	0 ... 10	$\approx 6$	12	251	-K181	1		
KPY 56A	75	0 ... 25	$\approx 6$	12	251	-K183	1		
KPY 57A	100	0 ... 60	$\approx 6$	12	252	-K185	1		
KPY 58A	250	0 ... 160	$\approx 6$	12	252	-K186	1		
KPY 59A	600	0 ... 400	$\approx 6$	12	252	-K187	1		

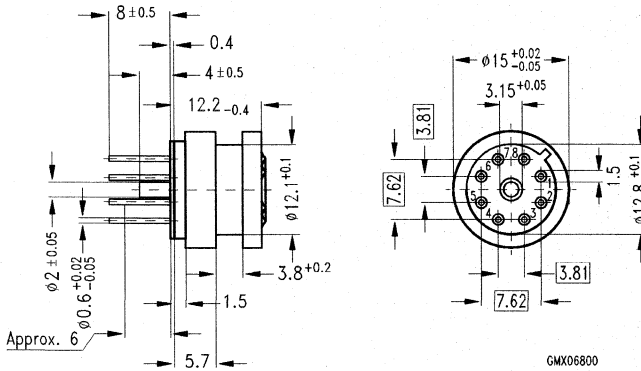
### Mediengetrennte Relativdruck-Sensoren Media-Separated Differential/Gauge Pressure Sensors

						Q62705-			
KPY 51R	2	0 ... 0.25	$\approx 6$	12	253	-K174	1		
KPY 52R	6	0 ... 0.6	$\approx 6$	12	253	-K175	1		
KPY 53R	10	0 ... 1.6	$\approx 6$	12	253	-K176	1		
KPY 54R	16	0 ... 4.0	$\approx 6$	12	253	-K178	1		
KPY 55R	30	0 ... 10	$\approx 6$	12	253	-K180	1		
KPY 56R	75	0 ... 25	$\approx 6$	12	253	-K182	1		
KPY 57R	100	0 ... 60	$\approx 6$	12	254	-K184	1		



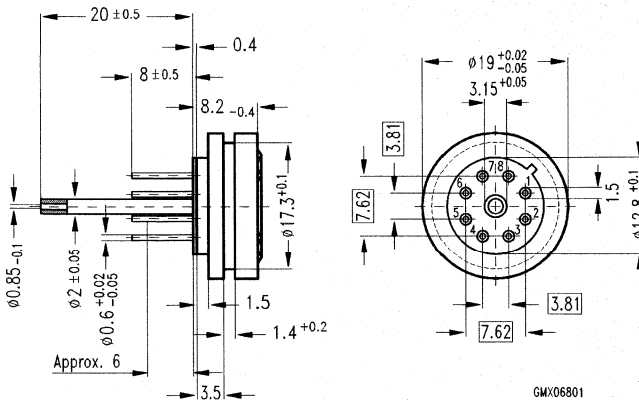
**KPY 57A ... KPY 59A**

**Bild/Figure 252**



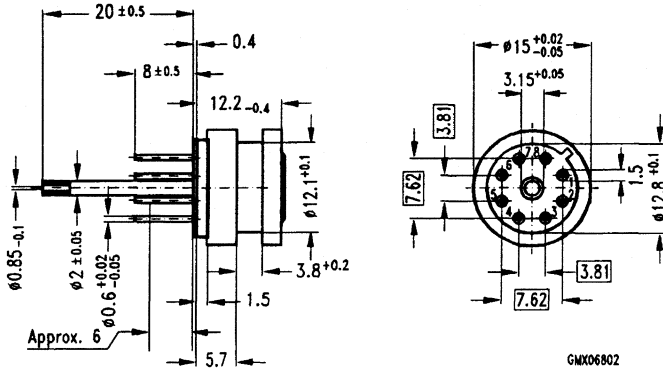
**KPY 51R ... KPY 56R**

**Bild/Figure 253**



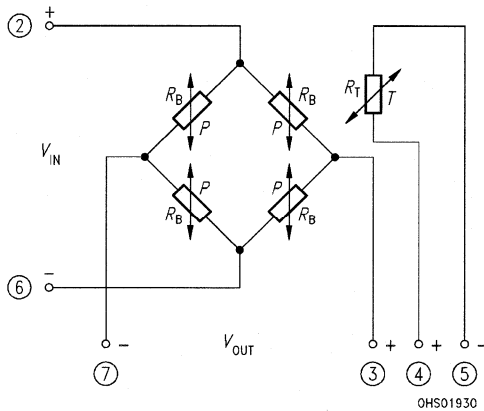
**KPY 57R**

**Bild/Figure 254**



**Anschlußbelegung KPY 51R ... KPY 59A  
Connections KPY 51R... KPY 59A**

- ① Kapillarröhrchen  
Capillary tube
- ② +  $V_{IN}$
- ③ +  $V_{OUT}$
- ④ + Temperatursensor  
+ Temperature sensor
- ⑤ - Temperatursensor  
- Temperature sensor
- ⑥ -  $V_{IN}$
- ⑦ -  $V_{OUT}$
- ⑧ nicht belegt  
not connected



Hinweis: Mittelröhrchen bzw. Mittelstift ist intern mit +  $V_{IN}$  verbunden.  
Note: Centre tube/stud is connected internally to +  $V_{IN}$



**Symbole und Begriffe**  
**Symbols and Terms**

Symbol	Bezeichnung	Designation
$dv/dt$	Spannungsteilheit	Rate of voltage rise
$I_D$	Drain-Gleichstrom	Continuous drain current (DC drain current)
$I_F$	Durchlaßstrom	Forward current
$I_{FT}$	Zündstrom	Forward current (LED)
$I_{SC \text{ typ.}}$	Typ. Kurzschlußstrom	Short-circuit current typ.
$I_H, I_{LAT}$	Haltestrom, Einraststrom	Holding current, latching current
$I_{FSM}$	Stoßstromgrenzwert, Zündkreis	Surge forward current, input circuit
$I_{TRMS}$	Grenzeffektivstrom	RMS on-state current
$I_{TSM}$	Stoßstromgrenzwert, Lastkreis	Single cycle surge current, output circuit
$P_{tot}$	Max. Verlustleistung	Total power dissipation
$R_{DS (on)}, R_{on}$	Drain-Source-Einschaltwiderstand	Drain-source on-state resistance
$R_{thJC}$	Wärmewiderstand (Chip-Gehäuse)	Thermal resistance (chip case)
$T_{op}$	Betriebstemperaturbereich	Operating temperature range
$T_t$	Übertemperaturschwelle	Excess temperature threshold
$V_{bb}$	Betriebsspannung	Operating voltage
$V_{DS}$	Drain-Source-Spannung	Drain-source voltage
$V_{DRM}, V_{RRM}$	Spitzensperrspannung	Peak off-state or reverse voltage
$V_{GS (th)}$	Gate-Schwellenspannung	Gate threshold voltage
$V_{IO}$	Isolationsprüfspannung	Isolation test voltage
$V_R$	Sperrspannung	Reverse voltage

Die folgenden Anmerkungen haben für das gesamte Kapitel SIPMOS-Halbleiter Gültigkeit:

The following notes apply to the entire chapter SIPMOS Semiconductors:

- 1) Lieferung auf Super-8-mm-Filmträger, Abgabemenge: abhängig vom Typ, min. 25/50 Stück oder Vielfaches, max. 3000 Stück.

Delivery on Super-8-mm film carrier, quantity delivered: dependent on type, min. 25/50 items or multiples of that, max. 3000 items.

- 2) Lieferung auf Super-12-mm-Filmträger, Abgabemenge: abhängig vom Typ, min. 25/50 Stück oder Vielfaches, max. 1000 Stück.

Delivery on Super-12-mm film carrier, quantity delivered: dependent on type, min. 25/50 items or multiples of that, max. 1000 items.

**SIPMOS-Leistungstransistoren**  
**SIPMOS Power Transistors**

Typ Type	$V_{DS}$ V	$I_D$ A	$P_{tot}$ W	$R_{DS(on)}$ $\Omega$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499

**N-Kanal-Anreicherungstypen**  
**N-Channel Enhancement Types**

Typ	$V_{DS}$	$I_D$	$P_{tot}$	$R_{DS(on)}$	Bild	Bestellnummer	Stck.				
Type	V	A	W	$\Omega$	Fig.	Ordering Code	Pcs.	min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499
☉ BUZ 10	50	23	75	0,07	255	C67078- -S1300-A2	10				
BUZ 10L*)	50	23	75	0,07	255	-S1329-A2	10				
☉ BUZ 11	50	30	75	0,04	255	-S1301-A2	10				
☉ BUZ 11A	50	26	75	0,055	255	-S1301-A3	10				
▼ BUZ 11AL*)	50	26	75	0,055	255	-S1330-A3	10				
▼ BUZ 12AL*)	50	42	125	0,035	255	-S1332-A3	10				
☉ BUZ 12	50	42	125	0,028	255	-S1331-A2	10				
☉ BUZ 12A	50	42	125	0,035	255	-S1331-A3	10				
BUZ 15	50	45	125	0,03	256	-S1001-A2	5				
☉ BUZ 71	50	14	40	0,1	255	-S1316-A2	10				
☉ BUZ 71A	50	13	40	0,12	255	-S1316-A3	10				
BUZ 71L*)	50	14	40	0,1	255	-S1326-A2	10				
BUZ 346	50	58	170	0,018	258	-S3120-A2	5				
▼ BUZ 11S2	60	30	75	0,04	255	-S1301-A5	10				
▼ BUZ 71S2	60	14	50	0,1	255	-S1316-A9	10				
☉ BUZ 70	60	12	40	0,15	255	-S1334-A2	10				
☉ BUZ 20	100	13,5	75	0,2	255	-S1302-A2	10				
☉ BUZ 21	100	21	75	0,085	255	-S1308-A2	10				
☉ BUZ 22	100	34	125	0,055	255	-S1333-A2	10				
BUZ 24	100	32	125	0,06	256	-S1003-A2	5				
☉ BUZ 72	100	10	40	0,2	255	-S1313-A2	10				
☉ BUZ 72A	100	9,0	40	0,25	255	-S1313-A3	10				
BUZ 72L*)	100	10	40	0,2	255	-S1327-A2	10				
▼ BUZ 344	100	46	170	0,035	258	-S3132-A2	5				
BUZ 345	100	41	150	0,045	258	-S3121-A2	10				
BUZ 349	100	32	125	0,06	258	-S3113-A2	5				
BUZ 30A	200	21	125	0,13	255	-S1303-A3	10				
☉ BUZ 31	200	13,5	75	0,2	255	-S1304-A2	10				
☉ BUZ 32	200	9,5	75	0,4	255	-S1310-A2	10				
BUZ 36	200	22	125	0,12	256	-S1018-A2	5				
☉ BUZ 73	200	7,0	40	0,4	255	-S1317-A2	10				
☉ BUZ 73A	200	5,8	40	0,6	255	-S1317-A3	10				
▼ BUZ 341	200	33	170	0,020	258	-S3128-A2	5				
BUZ 350	200	22	125	0,12	258	-S3117-A2	5				

\*) Logic level

**SIPMOS-Leistungstransistoren**  
**SIPMOS Power Transistors**

Typ Type	$V_{DS}$ V	$I_D$ A	$P_{tot}$ W	$R_{DS(on)}$ $\Omega$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499

**N-Kanal-Anreicherungstypen**  
**N-Channel Enhancement Types**

								C67078-			
BUZ 60	400	5,5	75	1	255	-S1312-A2	10				
▼ BUZ 61A	400	11	150	0,5	255	-S1341-A2	10				
BUZ 64	400	11,5	125	0,4	256	-S1017-A2	5				
BUZ 76	400	3,0	40	1,8	255	-S1315-A2	10				
BUZ 76A	400	2,6	40	2,5	255	-S1315-A3	10				
BUZ 205*)	400	6,0	75	1	255	-A1401-A2	5				
▼ BUZ 323	400	15	170	0,3	258	-S3127-A2	5				
BUZ 325	400	12,5	125	0,35	258	-S3118-A2	5				
BUZ 326	400	10,5	125	0,5	258	-S3112-A2	5				
BUZ 382*)	400	12,5	125	0,4	257	-A3207-A2	5				
▼ BUZ 40B	500	8,0	150	0,8	255	-S1305-A2	10				
BUZ 41A	500	4,5	75	1,5	255	-A1306-A3	10				
BUZ 42	500	4,0	75	2,0	255	-A1311-A2	10				
BUZ 45	500	9,6	125	0,6	256	-A1008-A2	5				
BUZ 45A	500	8,3	125	0,8	256	-A1008-A3	5				
BUZ 45B	500	10,0	125	0,5	256	-A1008-A4	5				
BUZ 74	500	2,4	40	3,0	255	-S1314-A2	10				
BUZ 74A	500	2,1	40	4,0	255	-S1314-A3	10				
BUZ 210*)	500	10,5	125	0,6	256	-A1102-A2	5				
BUZ 215*)	500	5,0	75	1,5	255	-A1400-A2	5				
BUZ 330	500	9,5	125	0,6	258	-S3105-A2	5				
BUZ 331	500	8,0	125	0,8	258	-S3114-A2	5				
BUZ 338	500	13,5	180	0,4	258	-S3126-A2	5				
BUZ 384*)	500	10,5	125	0,6	257	-A3209-A2	5				
BUZ 385*)	500	9,0	125	0,8	257	-A3210-A2	5				
BUZ 77A	600	2,7	40	4,0	255	-S1320-A3	10				
BUZ 77B	600	2,0	40	3,5	255	-S1320-A5	10				
BUZ 90	600	4,5	75	1,6	255	-S1321-A2	5				
BUZ 90A	600	4,0	75	2,0	255	-S1321-A3	5				
▼ BUZ 91A	600	8,0	150	0,9	255	-S1342-A2	10				
BUZ 92	600	2,4	75	3,0	255	-S1343-A2	10				
▼ BUZ 93	600	3,6	80	2,5	255	-S1346-A2	10				
BUZ 94	600	7,5	125	0,9	256	-A1019-A2	5				
BUZ 332A	600	8,0	125	0,9	258	-S3123-A4	10				

\*) FREDFET-Technologie  
 FREDFET technology



**SIPMOS-Leistungstransistoren**  
**SIPMOS Power Transistors**

Typ Type	$V_{DS}$ V	$I_D$ A	$P_{tot}$ W	$R_{DS(on)}$ $\Omega$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499

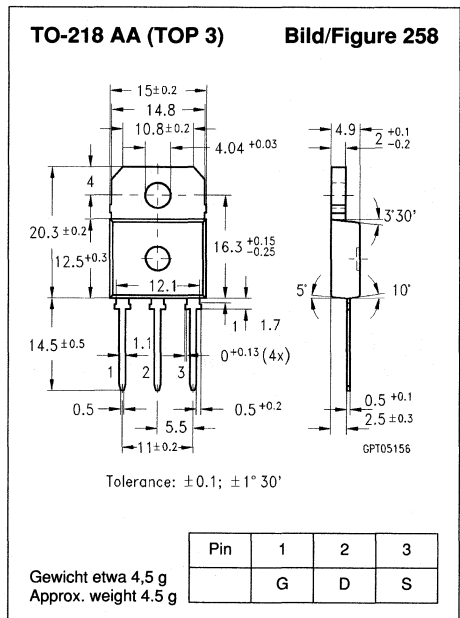
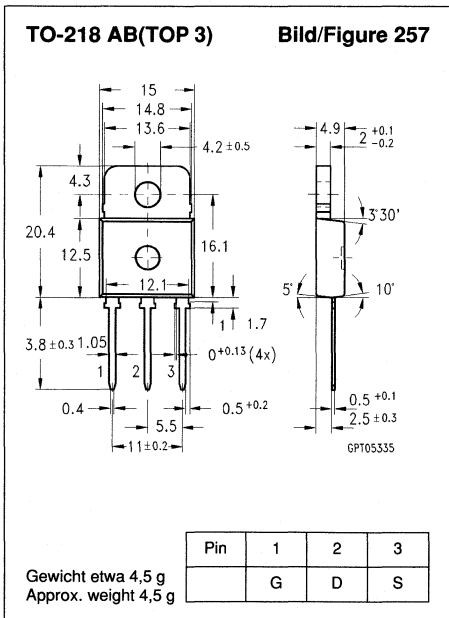
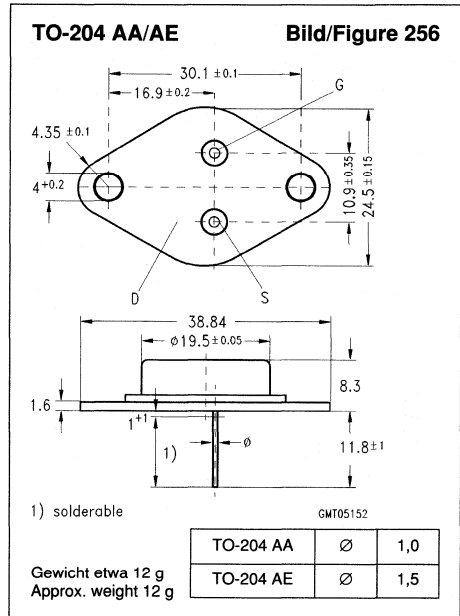
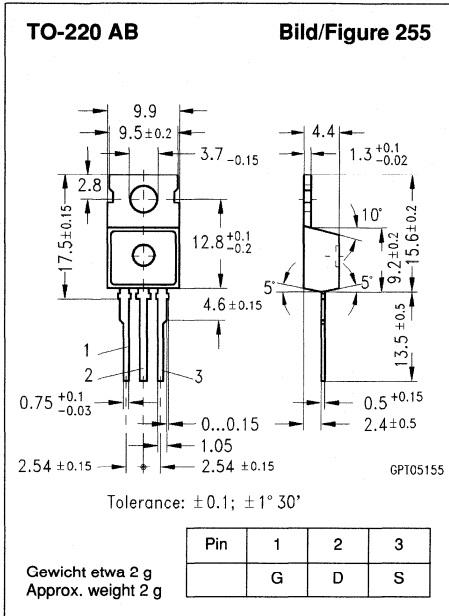
**N-Kanal-Anreicherungstypen**  
**N-Channel Enhancement Types**

BUZ 78	800	1,5	40	8	255	C67078- -S1318-A2	10				
BUZ 80	800	2,6	75	4	255	-S1309-A2	5				
BUZ 80A	800	3,0	75	3	255	-A1309-A3	5				
BUZ 84	800	5,3	125	2	256	-A1013-A2	5				
BUZ 84A	800	6,0	125	1,5	256	-A1013-A3	5				
BUZ 307	800	3,0	75	3	257	-A3100-A2	5				
BUZ 308	800	2,6	75	4	257	-A3109-A2	5				
BUZ 355	800	6,0	125	1,5	257	-A3107-A2	5				
BUZ 356	800	5,0	125	2	257	-A3108-A2	5				
BUZ 50A	1000	2,5	75	5	255	-A1307-A3	5				
BUZ 50B	1000	2,0	75	8	255	-A1307-A4	5				
BUZ 50C	1000	2,3	75	6	255	-A1307-A5	5				
BUZ 53A	1000	2,5	78	5	256	-A1009-A3	5				
BUZ 54	1000	5,1	125	2	256	-S1010-A2	5				
BUZ 54A	1000	4,5	125	2,6	256	-S1010-A3	5				
BUZ 310	1000	2,5	75	5	257	-A3101-A2	5				
BUZ 311	1000	2,3	75	6	257	-A3102-A2	5				
BUZ 357	1000	5,0	125	2	258	-S3110-A2	5				
BUZ 358	1000	4,5	125	2,6	258	-S3111-A2	5				

**P-Kanal-Anreicherungstypen**  
**P-Channel Enhancement Types**

BUZ 171	- 50	- 8,0	40	0,3	255	C67078- -A1450-A2	10				
BUZ 172	- 100	- 5,5	40	0,6	255	-A1451-A2	10				
BUZ 173	- 200	- 3,6	40	1,5	255	-A1452-A2	10				

10



**SIRET/IGBT-Leistungstransistoren**  
**SIRET/IGBT-Power Transistors**

Typ Type	$V_{CE}$	$I_C$	$P_{tot}$	$R_{thJC}$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
	V	A	W	K/W				min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499

**SIRET-Leistungstransistor**  
**SIRET Power Transistor**

BUP 101	1000	20	90	1	259	C67060- -A1000-A2	5				
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**IGBT-Leistungstransistoren**  
**IGBT Power Transistors**

BUP 200	1200	5	50	2,5	261	C67078- -A4400-A2	10				
▼ BUP 202	1000	12	100	1,25	261	-A4401-A2	10				
▼ BUP 203	1000	21	165	1,25	261	-A4402-A2	10				
BUP 304	1000	35	310	0,4	259	-A4200-A2	5				
BUP 307	1200	35	310	0,4	259	-A4201-A2	5				

Typ Type	$V_{RRM}$	$I_{FAV}$	$t_{rr}$ (typ)	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
	V	A	ns				min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499

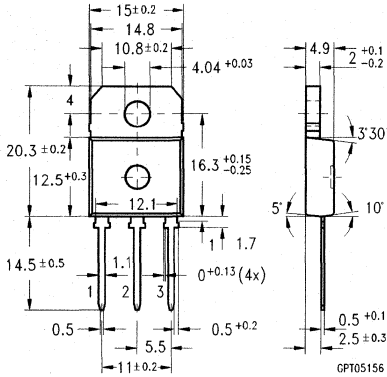
**Schnelle Dioden (FRED)**  
**Fast-Recovery Epitaxial Diodes (FRED)**

▼ BYP 101	1000	15	80		260	C67047- -A2072-A2	5				
BYP 102	1000	28	130		260	-A2071-A2	5				
BYP 103	1000	45	140		260	-A2066-A2	5				



**TO-218 AA (TOP 3)**

**Bild/Figure 259**



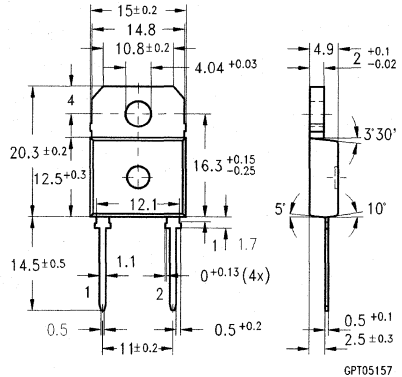
Tolerance:  $\pm 0.1$ ;  $\pm 1^\circ 30'$

Gewicht etwa 4,5 g  
 Approx. weight 4.5 g

Pin	1	2	3
	B	C	E

**TO-218 AD**

**Bild/Figure 260**

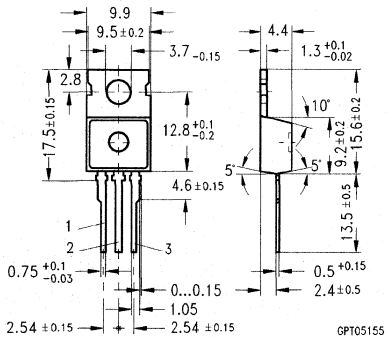


Gewicht etwa 4,5 g  
 Approx. weight 4.5 g

Pin	1	2
	C	A

**TO-220 AB**

**Bild/Figure 261**



Tolerance:  $\pm 0.1$ ;  $\pm 1^\circ 30'$

Gewicht etwa 2 g  
 Approx. weight 2 g

Pin	1	2	3
	B	C	E

**SIPMOS-Kleinsignal-Transistoren**  
**SIPMOS Small-Signal Transistors**

Typ Type	$V_{DS}$ V	$I_D$ mA	$V_{GS(th)}$ V	$R_{DS(on)}$ $\Omega$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

**N-Kanal-Anreicherungstypen**  
**N-Channel Enhancement Types**

▼ BSP 17	50	2900	2,1 ... 4,0	0,1	267	Q67000- -S220	50 <sup>2)</sup>				
BSP 295	50	1700	0,8 ... 2,0	0,3	267	-S066	50 <sup>2)</sup>				
						Q62702-					
BSS 98	50	300	0,8 ... 1,6	3,5	263a	-S464	25				
BSS 138	50	220	0,8 ... 1,6	3,5	265	-S566	50 <sup>1)</sup>				
BSS 295	50	1400	0,8 ... 2,0	0,3	263b	-S603	25				
BSS 395	50	4400	0,8 ... 2,0	0,3	264b	-S604	50				
						Q67000-					
▼ BSP 318	60	2400	1,5 ... 2,5	0,15	267	-S127	50 <sup>2)</sup>				
BS 170	60	300	0,8 ... 2,0	5	263a	-S061	25				
SN 7000	60	250	0,8 ... 2,0	5	263c	-S062	25				
SN 7002	60	190	0,8 ... 2,0	5-	265	-S063	50 <sup>1)</sup>				
						-S067	50 <sup>2)</sup>				
BSP 296	100	1000	0,8 ... 2,0	0,8	267	Q62702-					
BSS 100	100	220	0,8 ... 2,0	6	263a	-S483	25				
BSS 119	100	170	1,6 ... 2,6	6	265	-S631	25 <sup>1)</sup>				
☉ BSS 123	100	170	0,8 ... 2,0	6	265	-S512	25 <sup>1)</sup>				
BSS 296	100	800	0,8 ... 2,0	0,8	263b	-S615	25				
						Q67000-					
BS 107	200	130	0,8 ... 2,0	26	263a	-S060	25				
BSP 297	200	600	0,8 ... 2,0	2	267	-S068	50 <sup>2)</sup>				
						Q62702-					
BSS 97	200	1500	0,8 ... 2,8	2	264a	-S463	25				
BSS 297	200	480	0,8 ... 2,0	2	263b	-S616	25				

☉ = SMD (Surface Mounted Device)



**SIPMOS-Kleinsignal-Transistoren**  
**SIPMOS Small-Signal Transistors**

Typ Type	$V_{DS}$ V	$I_D$ mA	$V_{GS(th)}$ V	$R_{DS(on)}$ $\Omega$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
								min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

**N-Kanal-Anreicherungstypen**  
**N-Channel Enhancement Types**

■ BSS 91	240	350	0,8 ... 2,0	6	262	Q62702- -S457	50				
■ BSP 88	240	290	0,6 ... 1,2	8	267	Q67000- -S070	50 <sup>2)</sup>				
■ BSP 89	240	340	0,8 ... 2,0	6	267	Q62702- -S652	50 <sup>2)</sup>				
■ BSS 87	240	290	0,8 ... 2,0	6	266	-S506	25 <sup>2)</sup>				
■ BSS 88	240	250	0,6 ... 1,2	8	263b	-S454	25				
■ BSS 89	240	290	0,8 ... 2,0	6	263b	-S455	25				
■ BSS 95	240	800	0,8 ... 2,0	6	264a	-S461	25				
■ BSS 101	240	130	0,8 ... 2,0	16	263a	-S484	25				
■ BSS 131	240	100	0,8 ... 2,0	16	265	-S565	50 <sup>1)</sup>				
▼ BSP 324	400	160	1,5 ... 2,5	25	267	Q67000- -S215	50 <sup>2)</sup>				
▼ BSS 124	400	120	1,5 ... 2,5	25	263b	-S614	25				
▼ BSP 125	600	110	1,5 ... 2,5	45	267	-S654	50 <sup>2)</sup>				
▼ BSS 125	600	100	1,5 ... 2,5	45	263b	-S505	25				

■ = SMD (Surface Mounted Device)

**SIPMOS-Kleinsignal-Transistoren**  
**SIPMOS Small-Signal Transistors**

Typ Type	$V_{DS}$ V	$I_D$ mA	$V_{GS(th)}$ V	$R_{DS(on)}$ $\Omega$	Bild Fig.	Bestell-Nr. Ordering Code	Stck. Pcs. Min.				
								min. bis/to 99	100 bis/to 499	500 bis/to 999	1000 bis/to 2999

**N-Kanal-Verarmungstypen**  
**N-Channel Depletion Types**

<b>BSP 149</b>	200	440	< - 0,7	3,5	267	Q67000- -S071	50 <sup>2)</sup>				
BSS 149	200	350	< - 0,7	3,5	263b	Q62702- -S623	25				
<b>BSP 129</b>	240	190	< - 0,7	20	267	Q67000- -S073	50 <sup>2)</sup>				
BSS 129	240	150	< - 0,7	20	263b	Q62702- -S510	25				
<b>BSS 139</b>	250	40	< - 0,7	100	265	-S612	50 <sup>1)</sup>				
BSS 229	250	70	< - 0,7	100	263b	-S567	25				
<b>BSP 135</b>	600	100	< - 0,7	60	267	-S655	50 <sup>2)</sup>				
BSS 135	600	80	< - 0,7	60	263b	-S601	50				

**P-Kanal-Anreicherungstypen**  
**P-Channel Enhancement Types**

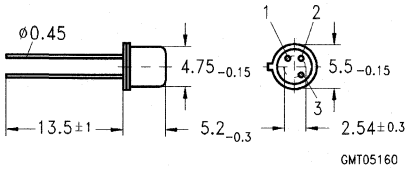
<b>BSP 315</b>	- 50	- 1000	- 0,8 ... - 2,0	0,8	267	Q67000- -S075	50 <sup>2)</sup>				
<b>BSS 84</b>	- 50	- 130	- 0,8 ... - 2,0	10	265	Q62702- -S568	50 <sup>1)</sup>				
BSS 110	- 50	- 170	- 0,8 ... - 2,0	10	263a	-S489	25				
SP 06 10L	- 60	- 180	- 1,0 ... - 2,0	10	263c	Q67000- -S065	25				
SP 06 10T	- 60	- 130	- 1,0 ... - 2,0	10	265	-S088	25 <sup>1)</sup>				
<b>BSP 316</b>	- 100	- 600	- 0,8 ... - 2,0	2,2	267	-S092	50 <sup>2)</sup>				
<b>BSP 317</b>	- 200	- 340	- 0,8 ... - 2,0	6	267	-S094	50 <sup>2)</sup>				
<b>BSP 92</b>	- 240	- 180	- 0,8 ... - 2,0	20	267	Q62702- -S653	50 <sup>2)</sup>				
<b>BSS 92</b>	- 240	- 150	- 0,8 ... - 2,0	20	263b	-S458	25				
BSS 192	- 240	- 150	- 0,8 ... - 2,0	20	266	-S634	50 <sup>2)</sup>				

■ = SMD (Surface Mounted Device)

**10**

**TO-18**

**Bild/Figure 262**

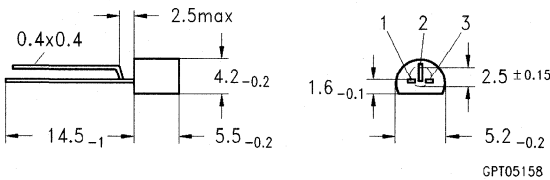


Gewicht etwa 0,3 g  
 Approx. weight 0.3 g

Pin	1	2	3
	S	G	D

**TO-92**

**Bild/Figure 263**

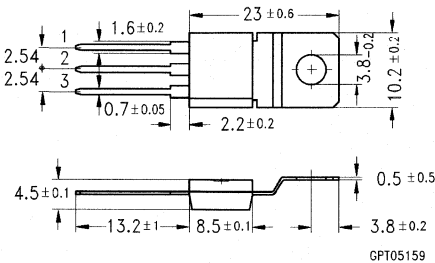


Gewicht etwa 2 g  
 Approx. weight 2 g

Pin	1	2	3
a	S	G	D
b	G	D	S
c	D	G	S

**TO-202**

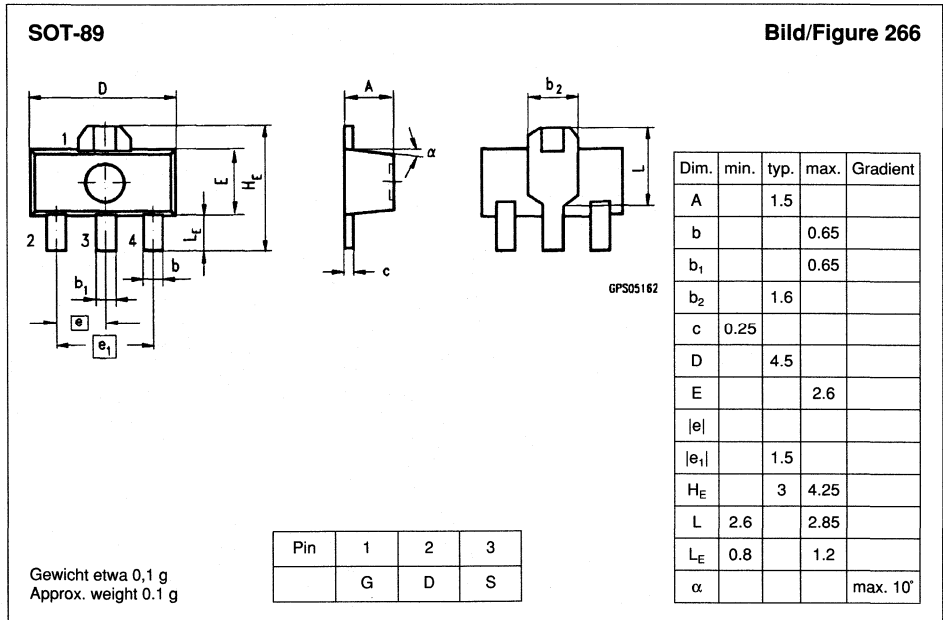
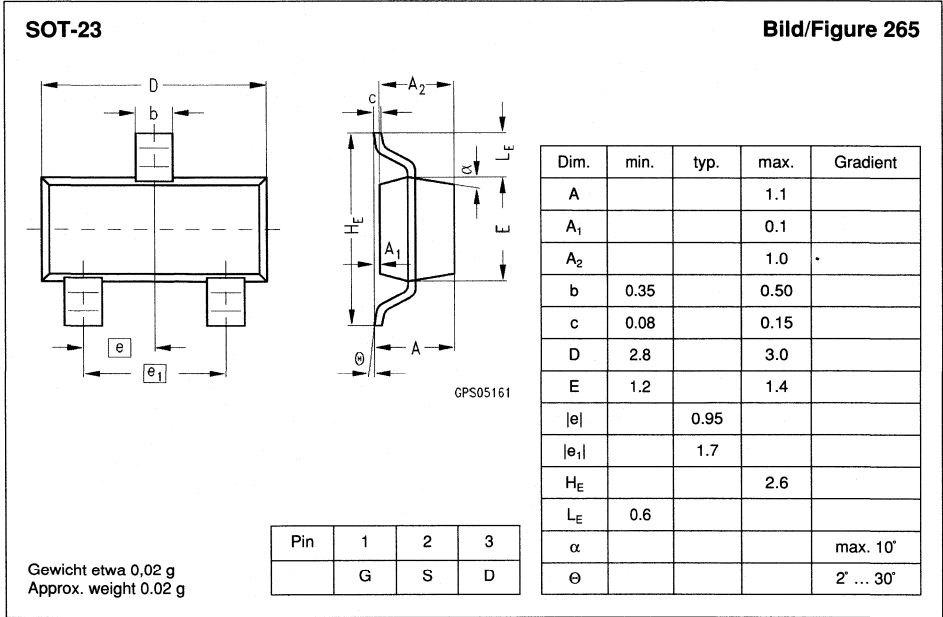
**Bild/Figure 264**



Gewicht etwa 1,8 g  
 Approx. weight 1.8 g

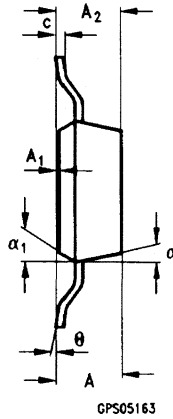
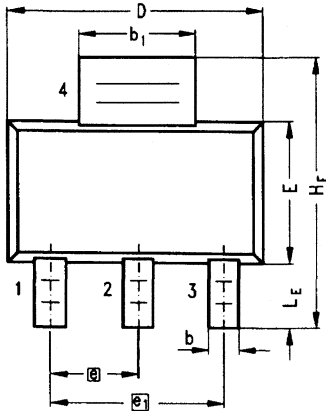
Pin	1	2	3
a	S	D	G
b	G	D	S





SOT-223

Bild/Figure 267



GPS05163

Dim.	min.	typ.	max.	Gradient
A			1.7	
A <sub>1</sub>	0.02		0.1	
A <sub>2</sub>			1.6	
b	0.60		0.80	
b <sub>1</sub>	2.9		3.1	
c	0.24		0.32	
D	6.3		6.7	
E	3.3		3.7	
e		2.3		
e <sub>1</sub>		4.6		
H <sub>E</sub>	6.7		7.3	
L <sub>E</sub>		1.7		
α				max. 10°
α <sub>1</sub>				13°
θ				10°

Gewicht etwa 0,1 g  
Approx. weight 0.1 g

Pin	1	2	3	4
	G	D	S	D

**SITAC-AC-Schalter**  
**SITAC AC Switches**

Typ Type	$V_{DRM}$	$I_{TRMS}$	$I_H, I_{LAT}$	$dv/dr$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
								min. bis/to	10 bis/to	50 bis/to	100 bis/to
	V	mA	mA	kV/ $\mu$ s			Min.	9	49	99	499

**Ohne Nullpunktschalter**  
**Without zero voltage switch**

	BRT 11H	400	300	0,5	10	268	C67079- -A1000-A6	25				
	BRT 12H	600	300	0,5	10	268	-A1001-A6	25				
▼	BRT 13H	800	300	0,5	10	268	-A1002-A6	25				

**Mit Nullpunktschalter**  
**With zero voltage switch**

	BRT 21H	400	300	0,5	10	268	C67079- -A1020-A6	25				
	BRT 22H	600	300	0,5	10	268	-A1021-A6	25				
▼	BRT 23H	800	300	0,5	10	268	-A1022-A6	25				

**DIP-6**
**Bild/Figure 268**

GPD05022

Gewicht etwa 0,6 g  
 Approx. weight 0.6 g

Pin	1	2	3	4	5	6
	A	C	-	A1	-	A2

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**Smart SIPMOS-TEMPFET**  
**Smart SIPMOS-TEMPFET**

Typ Type	$V_{DS}$ V	$I_D$ A	$R_{DS(on)}$ m $\Omega$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.				
							min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499

**P-Kanal-Anreicherungstyp**

**P-Channel Enhancement Type**

BTS 100	- 50	- 8	300	272	C67078- -A5007-A2	5				
---------	------	-----	-----	-----	----------------------	---	--	--	--	--

**N-Kanal-Anreicherungstypen**

**N-Channel Enhancement Types**

BTS 114	50	14	100	270	C67078- -A5000-A3	5				
BTS 130	50	27	50	270	-A5001-A3	5				
BTS 140A	50	39	28	270	-S5011-A2	5				
BTS 240A	50	58	18	269	-S5100-A3	5				
▼ BTS 112A	60	12	150	270	-S5014-A3	5				
BTS 129	60	27	50	270	-A5013-A2	5				
BTS 110	100	10	200	270	-A5008-A2	5				
BTS 120	100	19	200	270	-A5009-A2	5				

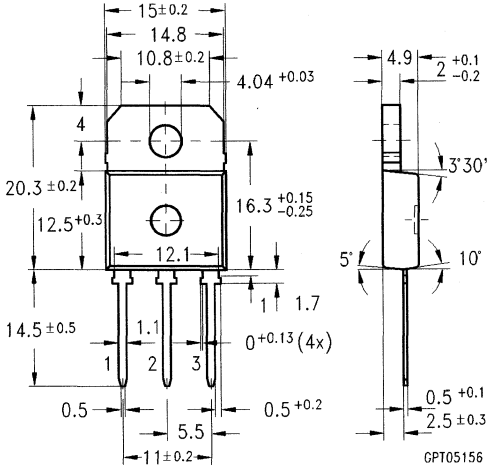
**N-Kanal-Anreicherungstypen (Logic Level)**

**N-Channel Enhancement Types (Logic Level)**

BTS 115	50	12,5	125	270	C67078- -A5004-A4	5				
BTS 131	50	25	60	270	-A5002-A4	5				
▼ BTS 113A	60	11,5	170	270	-S5015-A3	5				
BTS 132	60	24	65	270	-A5003-A4	5				
BTS 121A	100	19	100	270	-S5010-A2	5				

**TO-218 AA (TOP 3)**

**Bild/Figure 269**



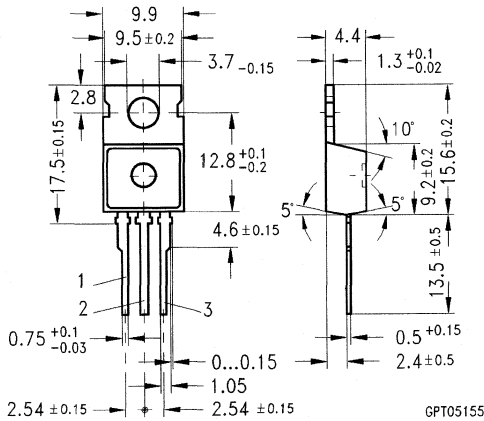
Tolerance: ±0.1; ±1° 30'

Gewicht etwa 4,5 g  
 Approx. weight 4.5 g

Pin	1	2	3
	G	D	S

**TO-220 AB**

**Bild/Figure 270**



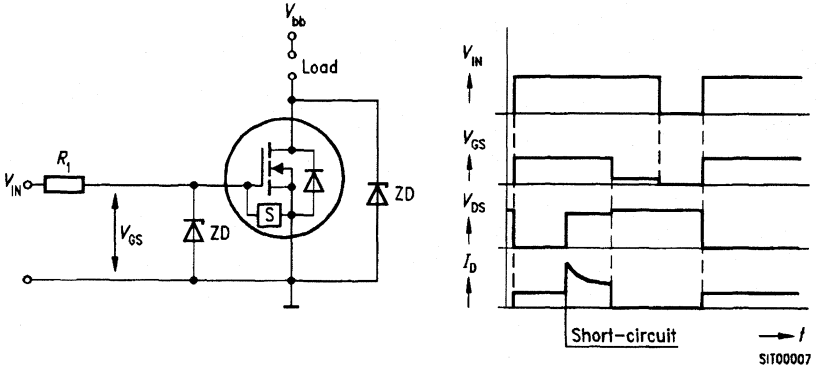
Tolerance: ±0.1; ±1° 30'

Gewicht etwa 2 g  
 Approx. weight 2 g

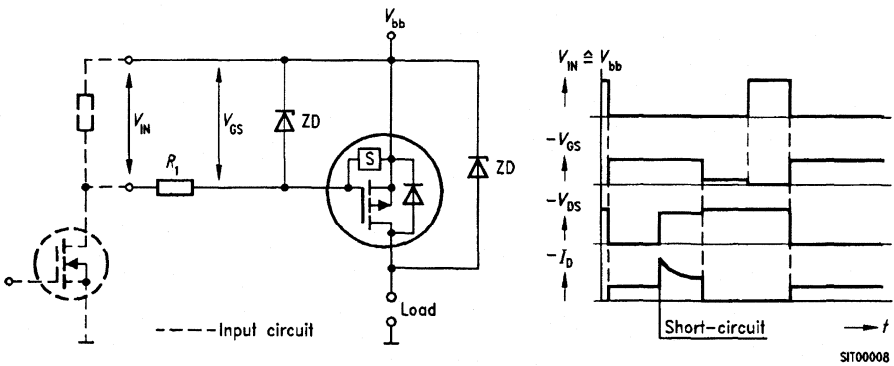
Pin	1	2	3
	G	D	S

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**Schaltung: N-Kanal**  
**Circuit diagram: N channel**



**Schaltung: P-Kanal**  
**Circuit diagram: P channel**

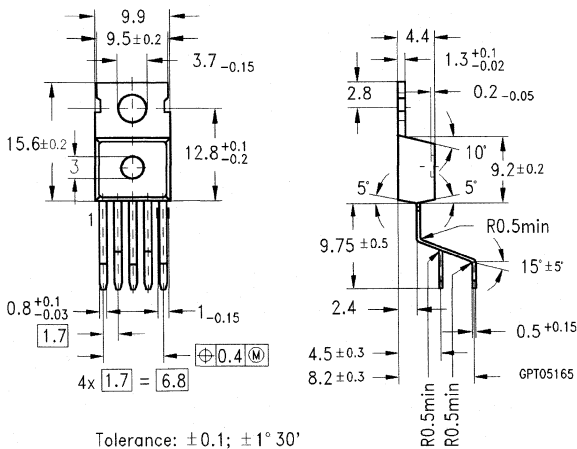


**Smart SIPMOS-PROFET**  
**Smart SIPMOS PROFET**

Typ Type	Version	V <sub>bb</sub> V	I <sub>D</sub> A	R <sub>DS(on)</sub> mΩ	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.					
								min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499	
							Min.					
BTS 412A	A	45	9,5	400	271	C67078- -A5300-A5	5					
BTS 413A	C	45	9,5	400	271	-A5307-A2	5					
BTS 412B	B	60	12	300	271	-S5300-A9	5					
BTS 410D	D	60	14	200	271	-S5305-A3	5					
BTS 410E	E	60	14	200	271	-S5305-A4	5					
BTS 432D	D	60	20	40	271	-S5303-A3	5					
BTS 432E	E	60	20	40	271	-S5303-A4	5					
BTS 410F	F	60	5	200	271	-S5305-A5	5					
BTS 410G	G	60	5	200	271	-S5305-A6	5					
BTS 432F	F	60	7	40	271	-S5303-A5	5					

**TO-220 AB/5**

**Bild/Figure 271**

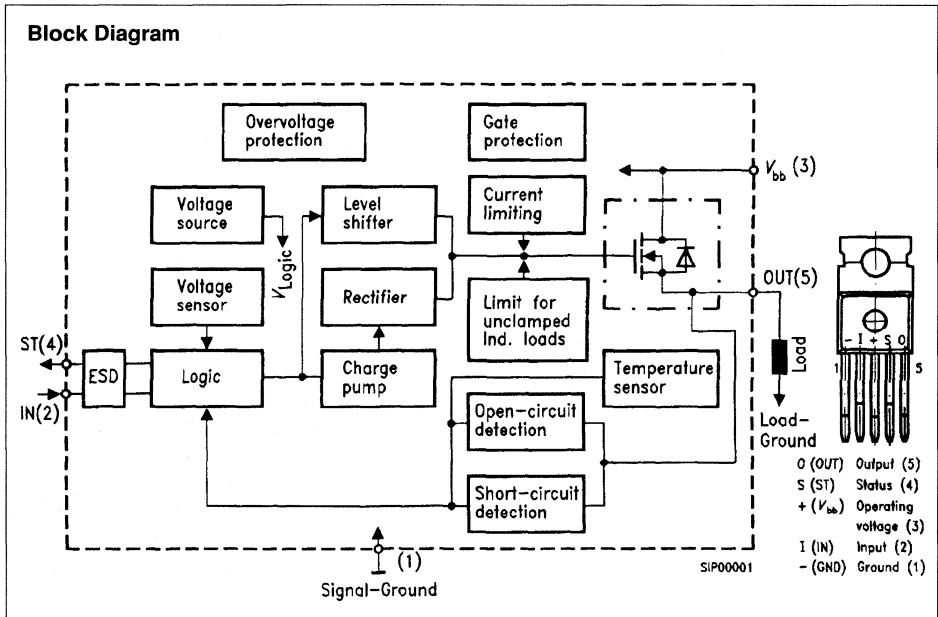
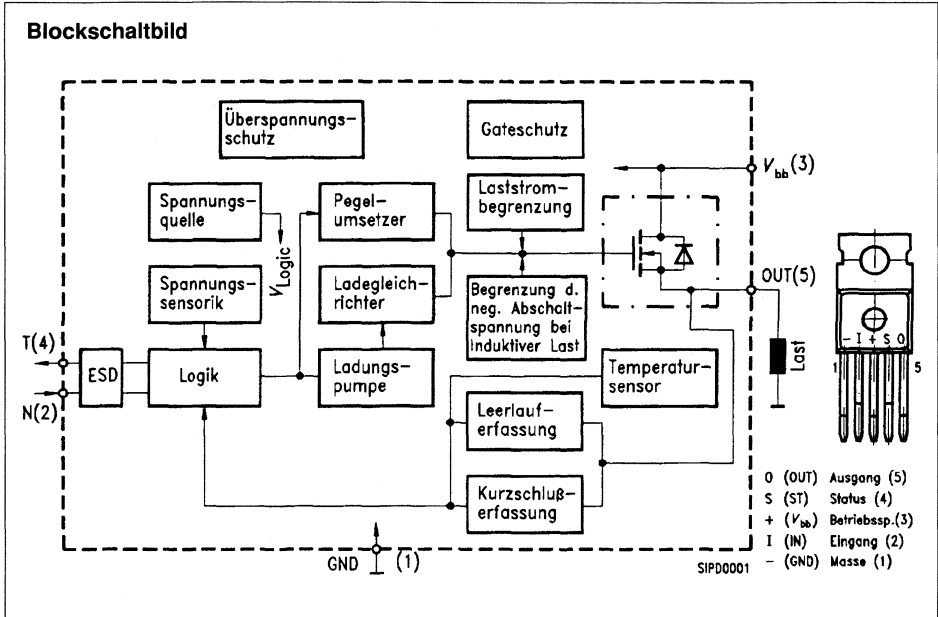


Gewicht etwa 4,5 g  
 Approx. weight 4.5 g

Pin	1	2	3	4	5
	GND	IN	V <sub>bb</sub>	St	OUT

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# SIPMOS-Halbleiter SIPMOS Semiconductors





**SIMOPAC-MOS-Leistungsmodule**  
**SIMOPAC MOS Power Modules**

Typ Type	$V_{DS}$ V	$I_D$ A	$P_{tot}$ W	$R_{DS(on)}$ mΩ	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs. Min.			
								min. bis/to 9	10 bis/to 49	50 bis/to 99

**Einzelschalter**  
**Single Switches**

C67076-										
BSM 101AR <sup>1)</sup>	50	200	700	3,0	272	-S1018-A2	1			
BSM 111AR <sup>1)</sup>	100	200	700	8,5	272	-S1013-A2	1			
BSM 121AR <sup>1)</sup>	200	130	700	20	272	-S1014-A2	1			
BSM 141	400	60	625	75	272	-A1010-A2	1			
BSM 151	500	48	625	120	272	-A1004-A2	1			
BSM 151F <sup>2)</sup>	500	56	700	110	272	-A1050-A2	1			
BSM 181	800	36	700	240	272	-A1001-A2	1			
BSM 181R	800	36	700	240	272	-A1016-A2	1			
BSM 181F <sup>2)</sup>	800	34	700	320	272	-A1052-A2	1			
BSM 191	1000	28	700	370	272	-A1009-A2	1			
BSM 191F <sup>2)</sup>	1000	28	700	420	272	-A1053-A2	1			

**Halbbrücken**  
**Half-Bridges**

C67076-										
BSM 204A	50	2 × 200	400	4,5	273a	-S1102-A2	1			
BSM 214A	100	2 × 120	400	13	273a	-S1100-A2	1			
BSM 224A	200	2 × 80	400	30	273a	-S1101-A2	1			
BSM 244F <sup>2)</sup>	400	2 × 45	400	100	273a	-A1155-A3	1			
BSM 254F <sup>2)</sup>	500	2 × 35	400	170	273a	-A1150-A2	1			
BSM 284F <sup>2)</sup>	800	2 × 20	400	480	273a	-A1152-A2	1			
BSM 294F <sup>2)</sup>	1000	2 × 18	400	630	273a	-A1151-A2	1			

<sup>1)</sup> R = Eingebauter Gate-Widerstand  
R = Built-in gate resistor  
<sup>2)</sup> F = FREDFET-Technologie  
F = FREDFET technology

**IGBT-Leistungsmodule**  
**IGBT Power Modules**

Typ Type	$V_{CE}$	$I_C$	$P_{tot}$	$R_{thJC}$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
	V	A	W	K/W				Min.	10 bis/to 49	50 bis/to 99

**Einzelschalter**  
**Single Switches**

BSM 200GA 100 D	1000	200	1750	0,07	275	C67076- -A2001-A2	2			
BSM 300GA 100 D	1000	300	2500	0,05	275	-A2000-A2	2			

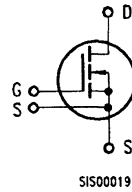
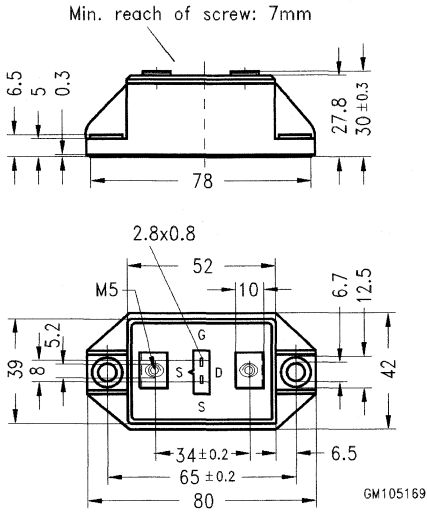
**Halbbrücken**  
**Half-Bridges**

BSM 25GB 100 D	1000	2 × 25	300	0,40	273b	C67076- -A2101-A2	1			
BSM 50GB 100 D	1000	2 × 50	500	0,25	273b	-A2100-A2	1			
BSM 75GB 100 D	1000	2 × 75	625	0,20	273b	-A2104-A2	1			
BSM 100GB 100 D	1000	2 × 100	1000	0,13	276	-A2103-A2	2			
BSM 150GB 100 D	1000	2 × 150	1250	0,10	276	-A2102-A2	2			

**3-Phasen-Vollbrücken**  
**3-Phase Full-Bridges**

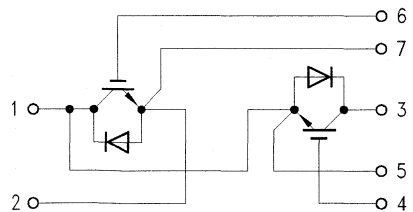
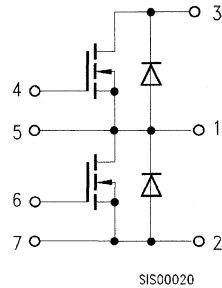
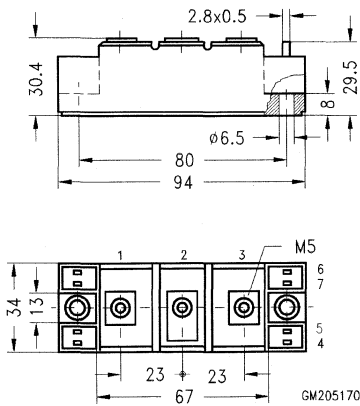
BSM 15GD 100 D	1000	6 × 15	125	1	274	C67076- -A2500-A2	1			
BSM 25GD 100 D	1000	6 × 25	300	0,4	274	-A2501-A2	1			

**Bild/Figure 272**



Gewicht etwa 150 g  
 Approx. weight 150 g

**Bild/Figure 273**

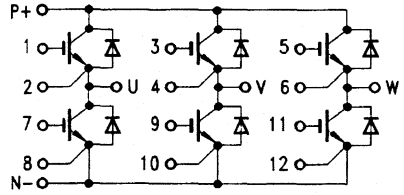
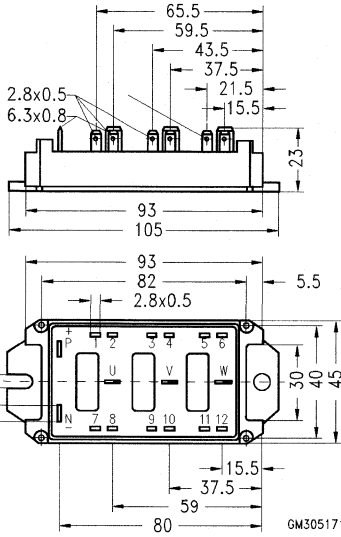


Gewicht etwa 250 g  
 Approx. weight 250 g

**10**

**SIPMOS-Halbleiter**  
**SIPMOS Semiconductors**

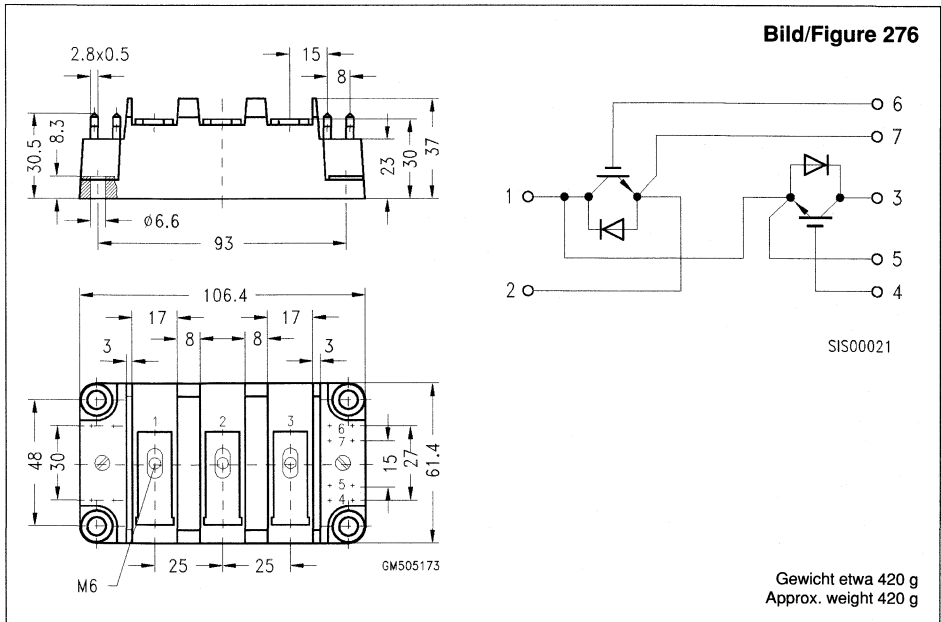
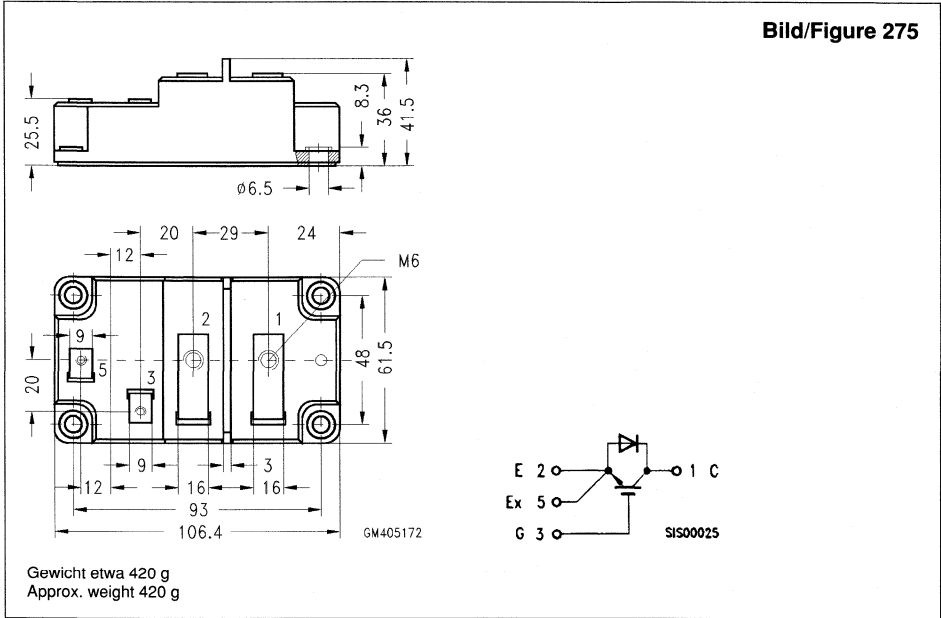
**Bild/Figure 274**



SIS00024

Gewicht etwa 190 g  
 Approx. weight 190 g

**SIPMOS-Halbleiter**  
**SIPMOS Semiconductors**



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**IGBT-Leistungsmodule**  
**IGBT Power Modules**

Typ Type	$V_{CE}$	$I_C$	$P_{tot}$	$R_{thJC}$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.			
	V	A	W	K/W				min. bis/to 9	10 bis/to 49	50 bis/to 99

**Einzelschalter**  
**Single Switches**

▼ BSM 200GA 120 D	1200	200	1750	0,07	278	C67076- -A2006-A2	2			
▼ BSM 300GA 120 D	1200	300	2500	0,05	278	-A2007-A2	2			

**Halbbrücken**  
**Half-Bridges**

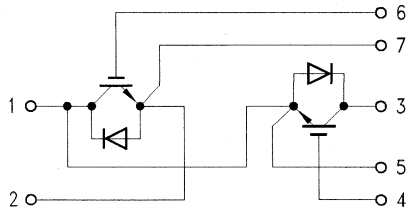
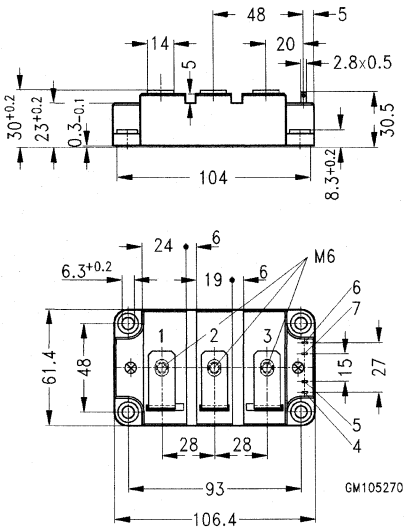
▼ BSM 25GB 120 D	1200	2 × 25	300	0,40	273b	C67076- -A2109-A2	1			
▼ BSM 50GB 120 D	1200	2 × 50	500	0,25	273b	-A2105-A2	1			
▼ BSM 75GB 120 D	1200	2 × 75	625	0,20	273b	-A2106-A2	1			
▼ BSM 100GB 120 D	1200	2 × 100	1000	0,13	277	-A2107-A2	2			
▼ BSM 150GB 120 D	1200	2 × 150	1250	0,10	277	-A2108-A2	2			

**3-Phasen-Vollbrücken**  
**3-Phase Full-Bridges**

▼ BSM 15GD 120 D	1200	6 × 15	125	1	274	C67076- -A2504-A2	1			
▼ BSM 25GD 120 D	1200	6 × 25	300	0,4	274	-A2505-A2	1			

**SIPMOS-Halbleiter**  
**SIPMOS Semiconductors**

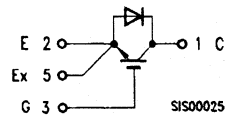
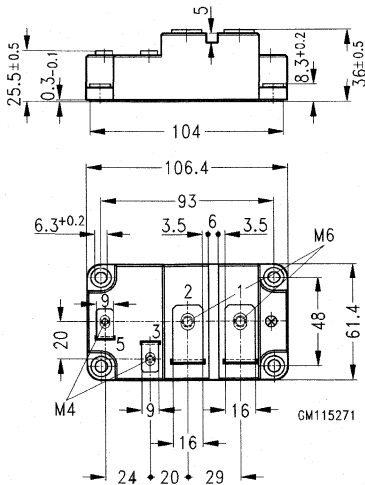
**Bild/Figure 277**



SIS00021

Gewicht etwa 420 g  
 Approx. weight 420 g

**Bild/Figure 278**



SIS00025

Gewicht etwa 420 g  
 Approx. weight 420 g

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**Schottky-Dioden**

**Schottky Diodes**

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# Schottky-Dioden

## Schottky Diodes

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### Symbole und Begriffe

### Symbols and Terms

Symbol	Bezeichnung	Designation
$I_{FAV}$	Dauergrenzstrom	Average forward current
$V_{RRM}$	Spitzensperrspannung	Repetitive peak reverse voltage
$V_{FM}$	Durchlaßspannung	Peak forward voltage
$I_{RM}$	Rückstromspitze	Peak reverse current

# Schottky-Dioden

## Schottky Diodes

Typ Type	$V_{RRM}$	$I_{FAV}$	$V_{FM}$	$I_{RM}$	Bild Fig.	Bestellnummer Ordering Code	Stk. Pcs.				
								min. bis/to 9	10 bis/to 49	50 bis/to 99	100 bis/to 499
	V	A	V	$\mu$ A			Min.				

### Einzelioden Single Diodes

						C67047-				
MSP 145	45	1	0.58	100	279	-Z1000-A1	100			
MS 106	60	1	0.67	1	279	-Z1001-A1	100			
MS 109	90	1	0.81	100	279	-Z1002-A1	100			
▼MSP 345	45	3	0.52	1500	280	-Z1034-A1	50			
MS 345	45	3	0.62	100	280	-Z1003-A1	50			
MS 306	60	3	0.62	100	280	-Z1004-A1	50			
MS 309	90	3	0.81	100	280	-Z1005-A1	50			
▼MSP 545	45	5	0.52	1500	280	-Z1035-A1	50			
MS 545	45	5	0.62	100	280	-Z1006-A1	50			
MS 506	60	5	0.65	100	280	-Z1007-A1	50			
MS 509	90	5	0.81	100	280	-Z1008-A1	50			
MSP 835	35	8	0.52	2000	280	-Z1009-A1	30			
▼MSP 845	45	8	0.52	1500	280	-Z1036-A1	30			
MS 845	45	8	0.62	250	280	-Z1010-A1	30			
MS 809	90	8	0.81	200	280	-Z1011-A1	30			
SBR 3050	50	35	0.63	4	284	-Z1027-A1	7			
SBR 8050	50	85	0.74	5	285	-Z1028-A1	5			
MS 1045	45	10	0.58	800	282	-Z1012-A1	25			
MS 1060	60	10	0.67	250	282	-Z1013-A1	25			
MS 1090	90	10	0.80	250	282	-Z1014-A1	25			
MS 1635	35	16	0.67	250	282	-Z1015-A1	20			
MS 1645	45	16	0.67	250	282	-Z1016-A1	20			
MS 1690	90	16	0.82	100	282	-Z1017-A1	20			

### Doppeldioden Double Diodes

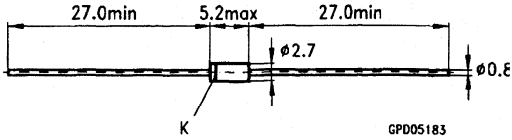
						C67047-				
FST 1045	45	10	0.54	500	281	-Z1018-A1	25			
FST 1090	90	10	0.80	100	281	-Z1019-A1	25			

11

# Schottky-Dioden Schottky Diodes

**DO-41**

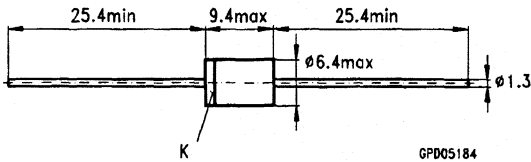
**Bild/Figure 279**



Gewicht etwa 0,4 g  
Approx. weight 0.4 g

**DO-201 AD**

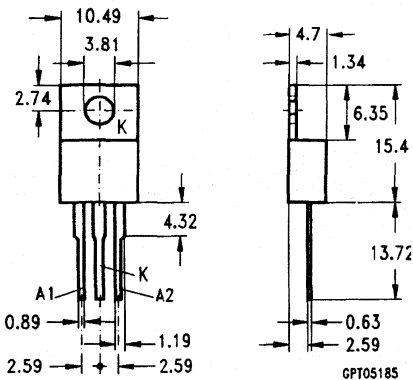
**Bild/Figure 280**



Gewicht etwa 0,8 g  
Approx. weight 0.8 g

**TO-220**

**Bild/Figure 281**

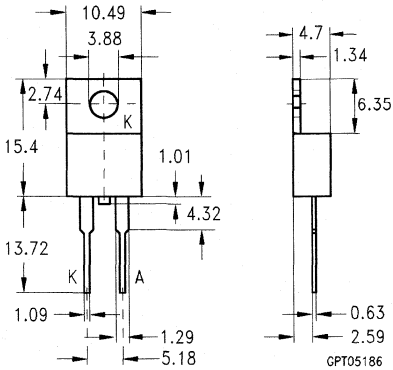


Gewicht etwa 2 g  
Approx. weight 2 g

# Schottky-Dioden Schottky Diodes

TO-220 A

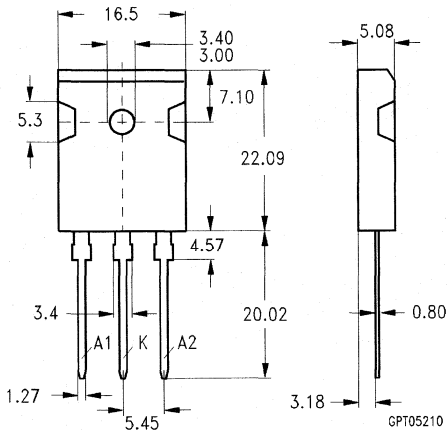
Bild/Figure 282



Gewicht etwa 2 g  
Approx. weight 2 g

TO-247 (TO-3P)

Bild/Figure 283



Gewicht etwa 4 g  
Approx. weight 4 g

## Schottky-Dioden Schottky Diodes

Typ Type	$V_{RRM}$	$I_{FAV}$	$V_{FM}$	$I_{RM}$	Bild Fig.	Bestellnummer Ordering Code	Stck. Pcs.				
	V	A	V	$\mu$ A				Min.	min. bis/to 9	10 bis/to 49	50 bis/to 99

### Doppeldioden

#### Double Diodes

							C67047-				
FST 2045	45	20	0.65	250	281	-Z1020-A1	20				
FST 2090	90	20	0.80	250	281	-Z1021-A1	20				
FST 3045	45	30	0.66	500	283	-Z1022-A1	10				
FST 3060	60	30	0.66	500	283	-Z1023-A1	10				
FST 3090	90	30	0.81	500	283	-Z1024-A1	10				
FST 5050	50	50	0.67	500	283	-Z1025-A1	10				
FST 5090	90	50	0.82	500	283	-Z1026-A1	10				

### Isolierte Module

#### Insulated Modules

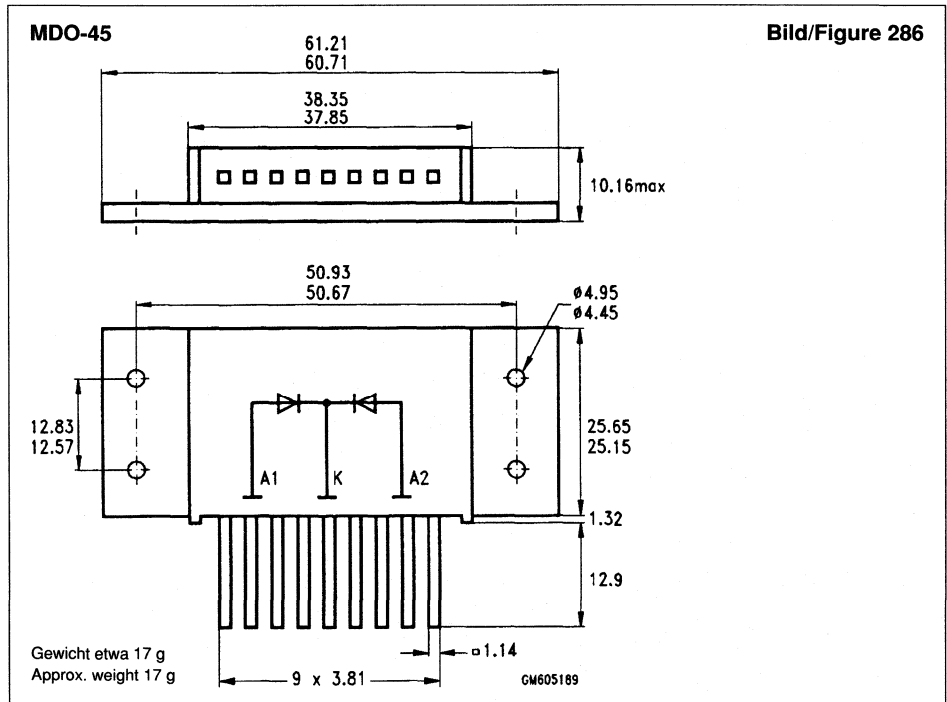
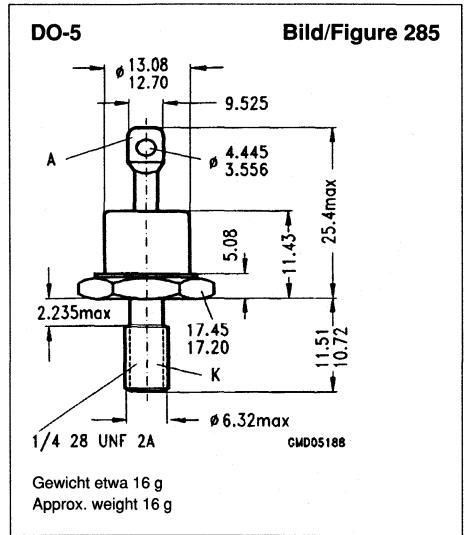
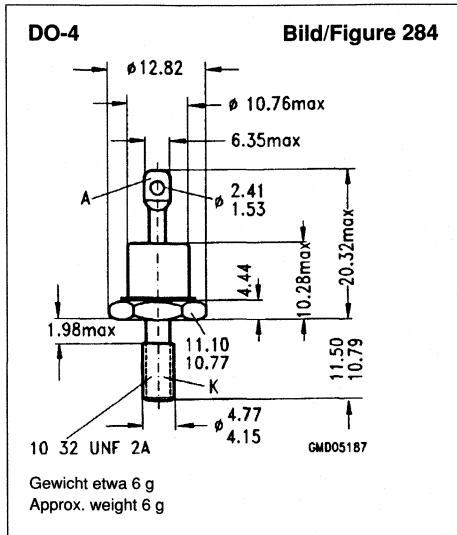
							C67076-				
FST 6050	50	2 × 60	0.70	3000	286	-Z1701-A1	2				
FST 16050	50	2 × 80	0.74	3000	287	-Z1702-A1	2				
FST 19050	50	2 × 100	0.70	3000	287	-Z1703-A1	2				

### Nichtisolierte Module

#### Non Insulated Modules

							C67076-				
FST 30050	50	2 × 150	0.78	600	288	-Z1704-A1	2				
▼ CPT 12050	50	2 × 60	0.80	25	289	-Z1705-A1	2				
CPT 20050	50	2 × 100	0.80	35	289	-Z1708-A1	2				
CPT 30050	50	2 × 150	0.70	35	289	-Z1706-A1	2				
▼ CPT 50050	50	2 × 150	0.78	500	289	-Z1707-A1	2				

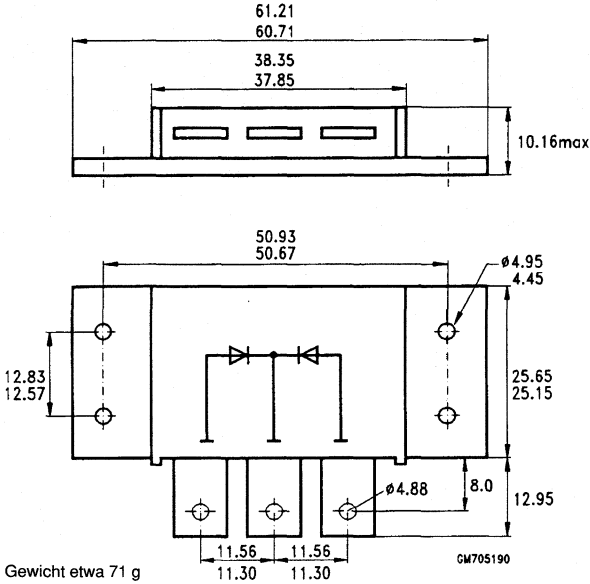
**Schottky-Dioden**  
**Schottky Diodes**



# Schottky-Dioden Schottky Diodes

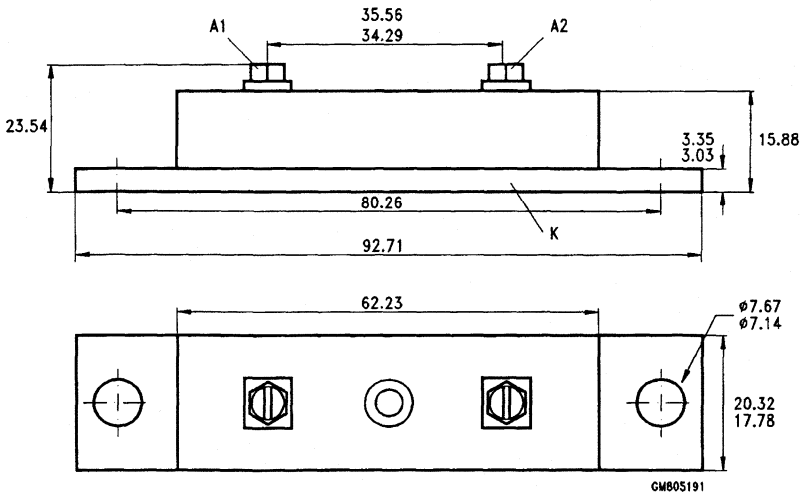
TO-249

Bild/Figure 287



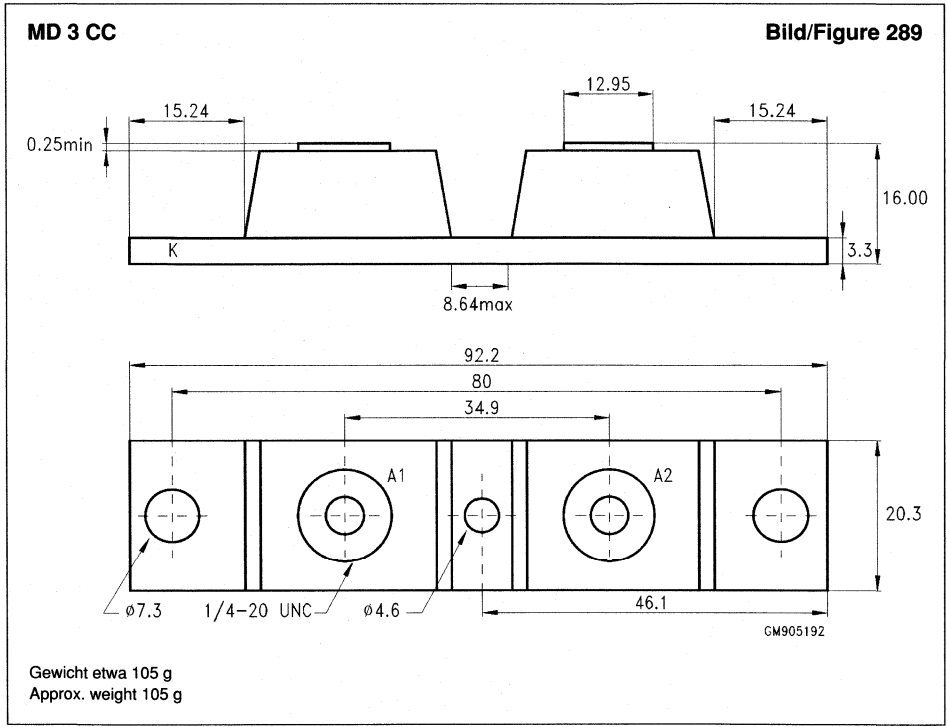
TO-244

Bild/Figure 288





# Schottky-Dioden Schottky Diodes

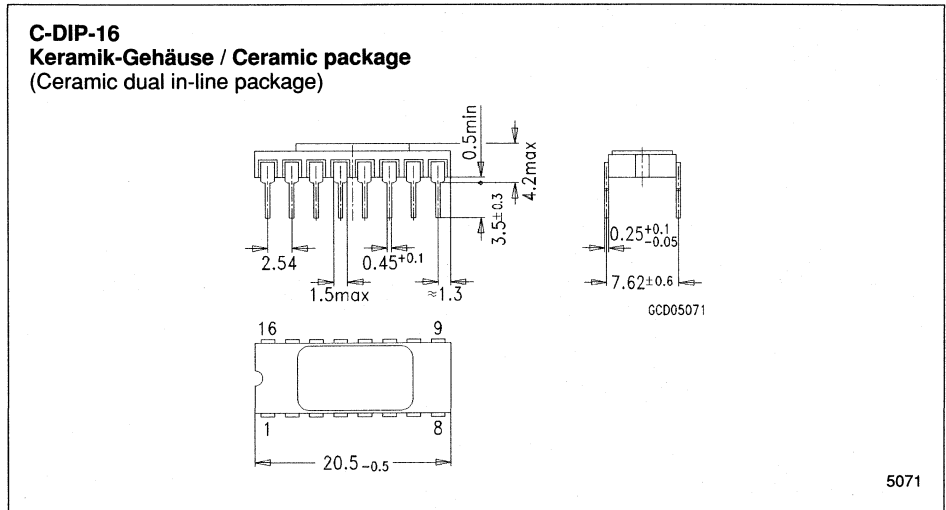
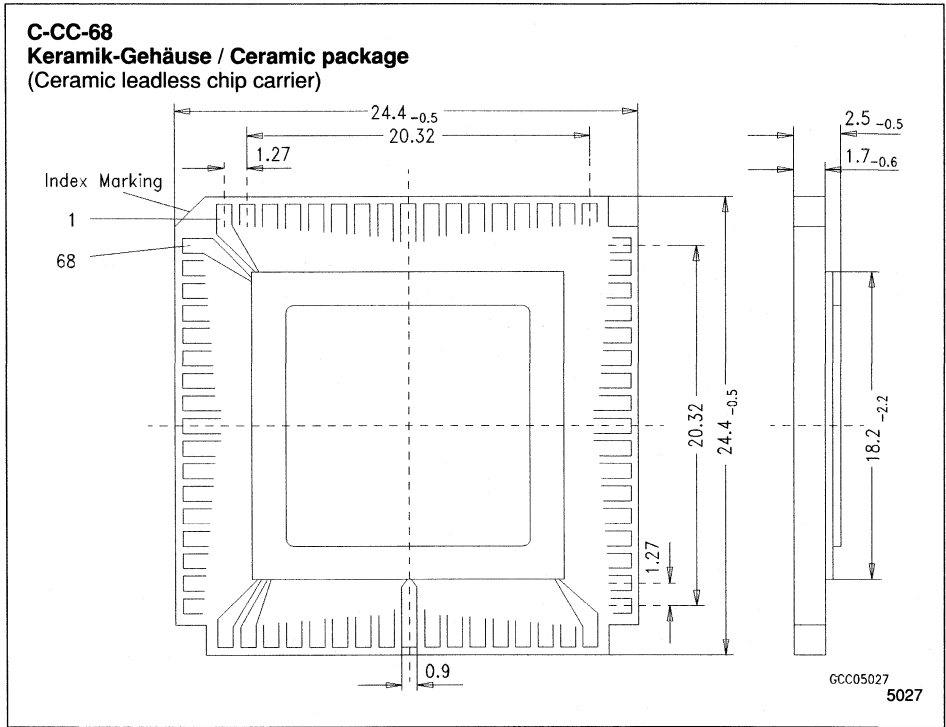








# Gehäusebauformen für ICs Package Outlines for ICs



12

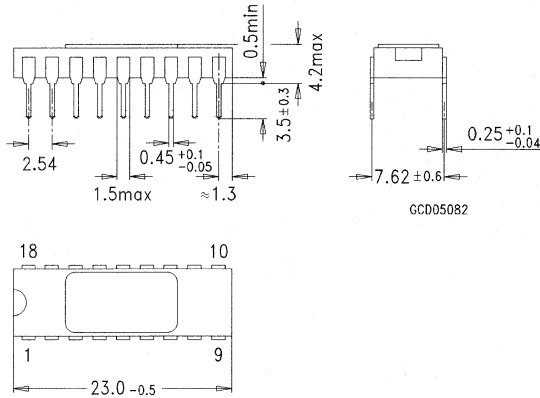
# Gehäusebauformen für ICs

## Package Outlines for ICs

### C-DIP-18

#### Keramik-Gehäuse / Ceramic package

(Ceramic dual in-line package)

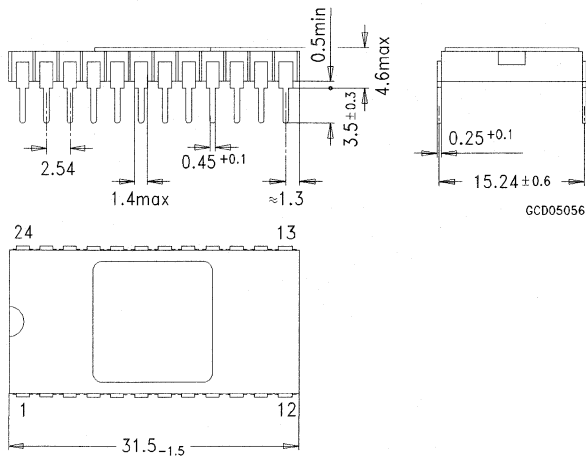


5082

### C-DIP-24

#### Keramik-Gehäuse / Ceramic package

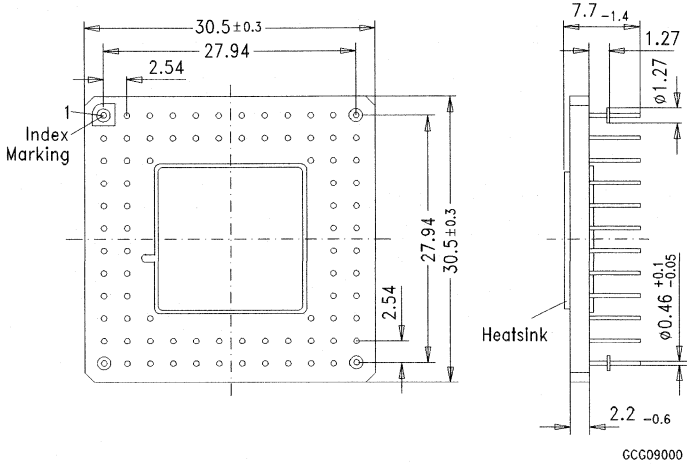
(Ceramic dual in-line package)



5056

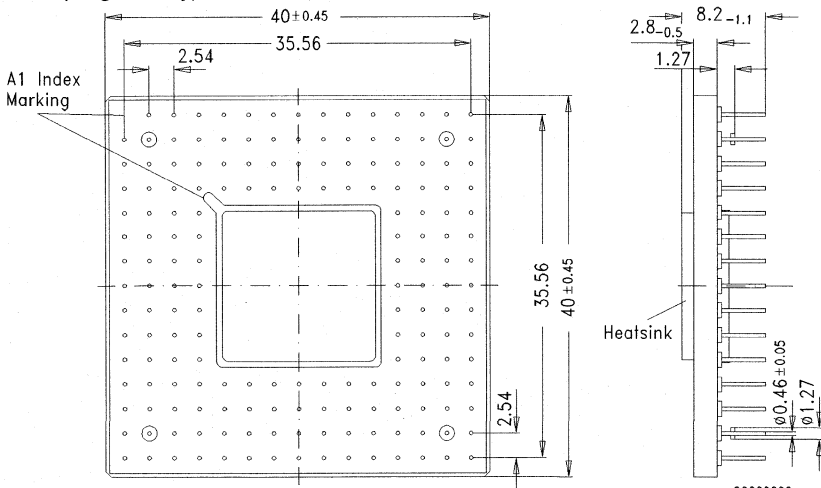
# Gehäusebauformen für ICs Package Outlines for ICs

## C-PGA-84 Keramik-Gehäuse / Ceramic package (Ceramic pin grid array)



9000

## C-PGA-175 Keramik-Gehäuse / Ceramic package (Ceramic pin grid array)

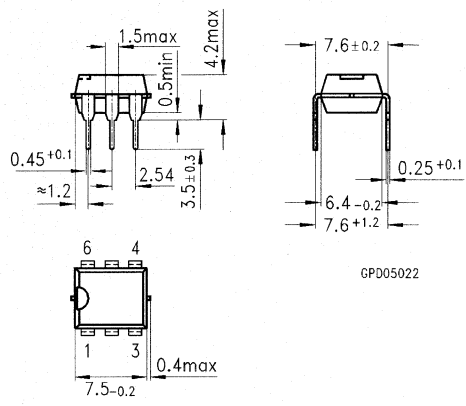


9002

12

# Gehäusebauformen für ICs Package Outlines for ICs

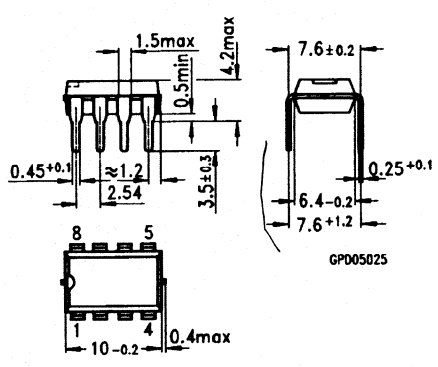
## P-DIP 6 Kunststoff-Gehäuse / Plastic package (Plastic dual in-line package)



GPD05022

5022

## P-DIP-8 Kunststoff-Gehäuse / Plastic package (Plastic dual in-line package)



GPD05025

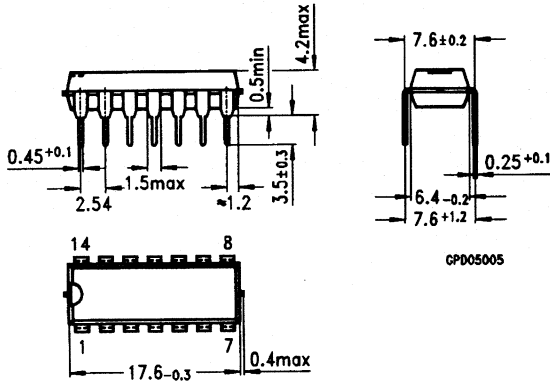
5025



# Gehäusebauformen für ICs

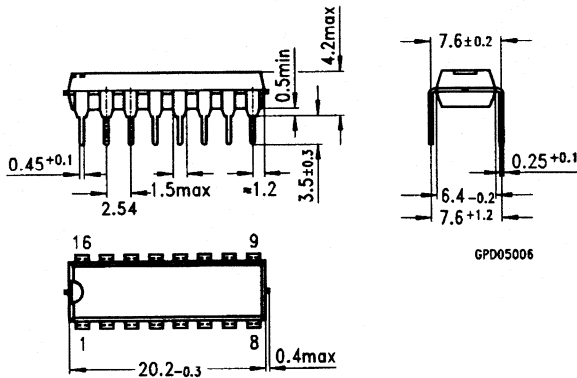
## Package Outlines for ICs

**P-DIP-14**  
**Kunststoff-Gehäuse / Plastic package**  
 (Plastic dual in-line package)



5005

**P-DIP-16**  
**Kunststoff-Gehäuse / Plastic package**  
 (Plastic dual in-line package)

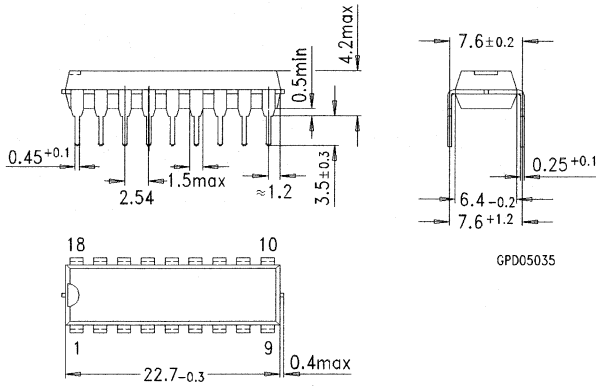


5006

12

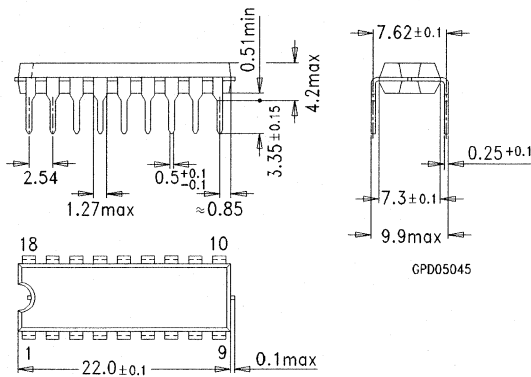
# Gehäusebauformen für ICs Package Outlines for ICs

## P-DIP-18/-18-L9 Kunststoff-Gehäuse / Plastic package (Plastic dual in-line package)



5035

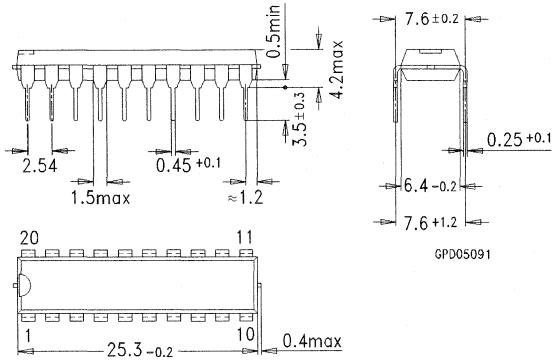
## P-DIP-18-T Kunststoff-Gehäuse / Plastic package (Plastic dual in-line package)



5045

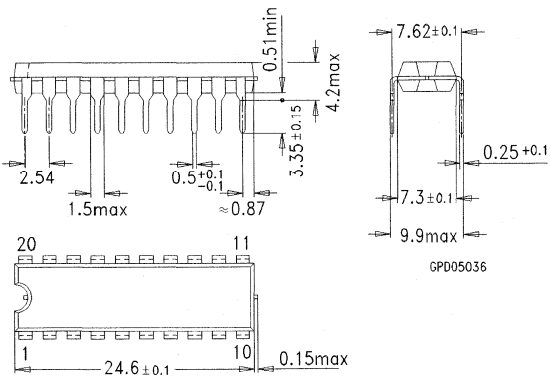
# Gehäusebauformen für ICs Package Outlines for ICs

**P-DIP-20/-20L-16**  
Kunststoff-Gehäuse / Plastic package  
(Plastic dual in-line package)



5091

**P-DIP-20-T**  
Kunststoff-Gehäuse / Plastic package  
(Plastic dual in-line package)

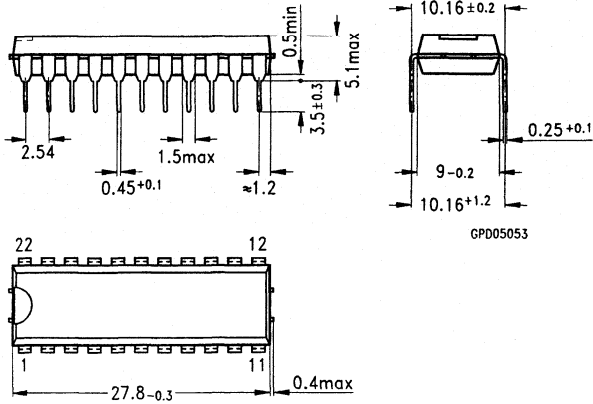


5036

12

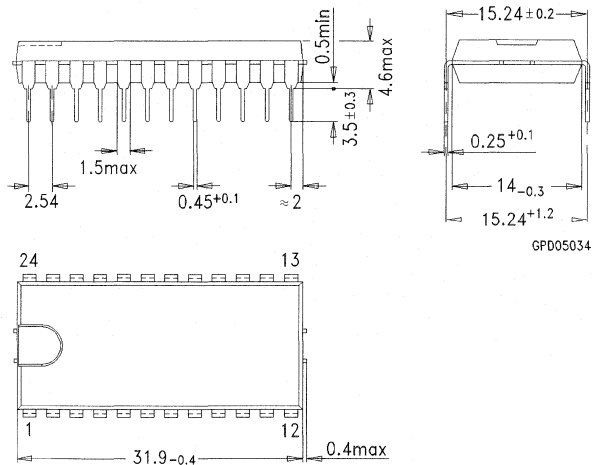
# Gehäusebauformen für ICs Package Outlines for ICs

**P-DIP-22**  
Kunststoff-Gehäuse / Plastic package  
(Plastic dual in-line package)



5053

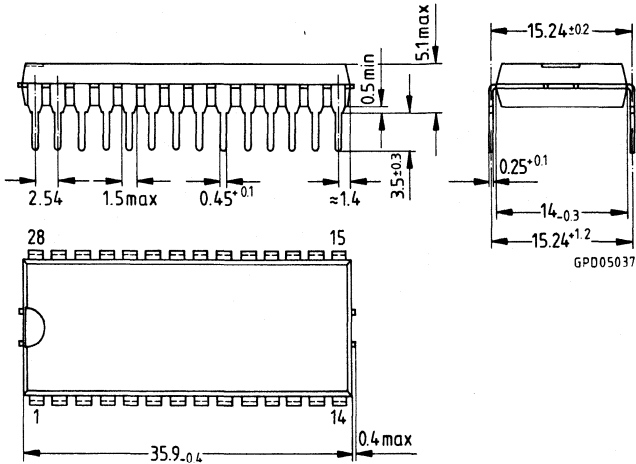
**P-DIP-24**  
Kunststoff-Gehäuse / Plastic package  
(Plastic dual in-line package)



5034

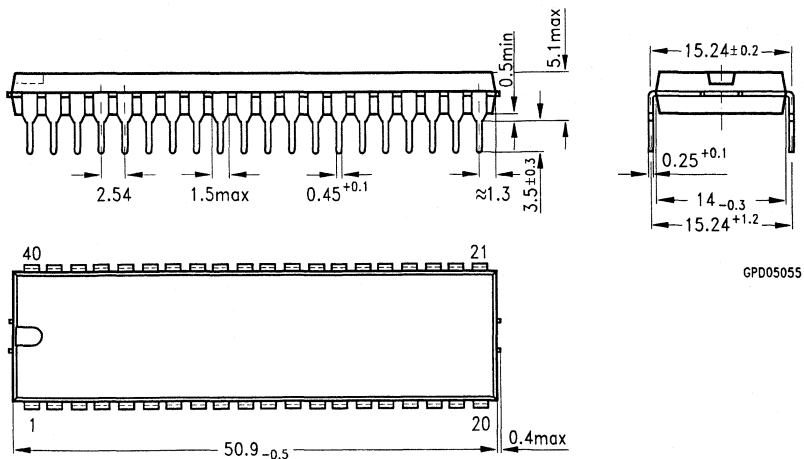
# Gehäusebauformen für ICs Package Outlines for ICs

**P-DIP-28**  
Kunststoff-Gehäuse / Plastic package  
(Plastic dual in-line package)



5037

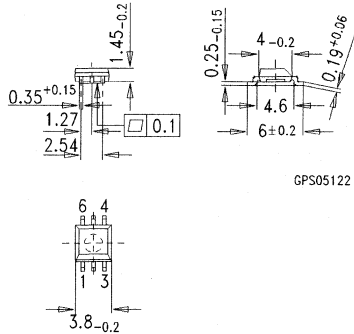
**P-DIP-40**  
Kunststoff-Gehäuse/Plastic package  
(Plastic dual in-line package)



5055

# Gehäusebauformen für ICs Package Outlines for ICs

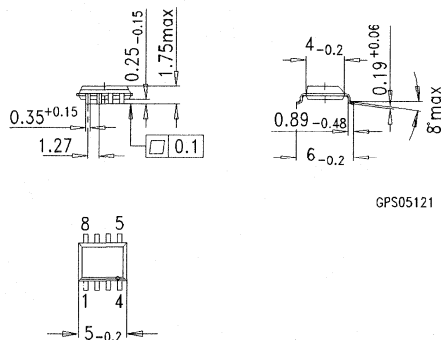
## P-DSO-6 (SMD) Kunststoff-Gehäuse / Plastic package (Plastic dual small outline)



GPS05122

5122

## P-DSO-8 (SMD) Kunststoff-Gehäuse / Plastic package (Plastic dual small outline)

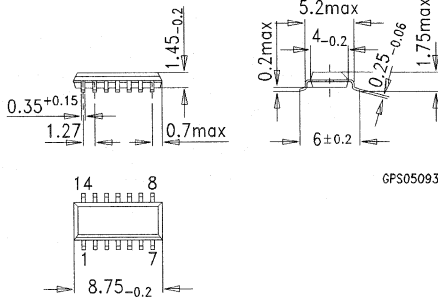


GPS05121

5121

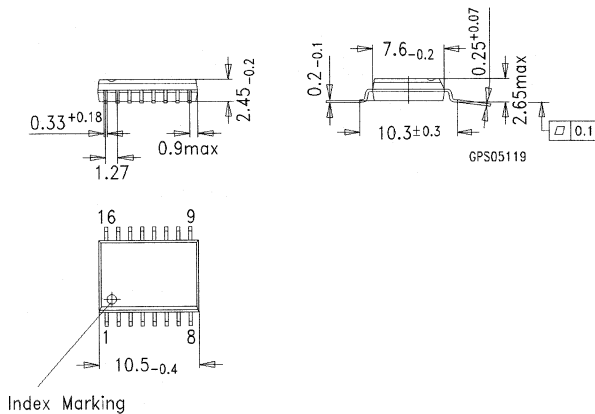
# Gehäusebauformen für ICs Package Outlines for ICs

## P-DSO-14 (SMD) Kunststoff-Gehäuse / Plastic package (Plastic dual small outline)



5093

## P-DSO-16-L (SMD) Kunststoff-Gehäuse / Plastic package (Plastic dual small outline)

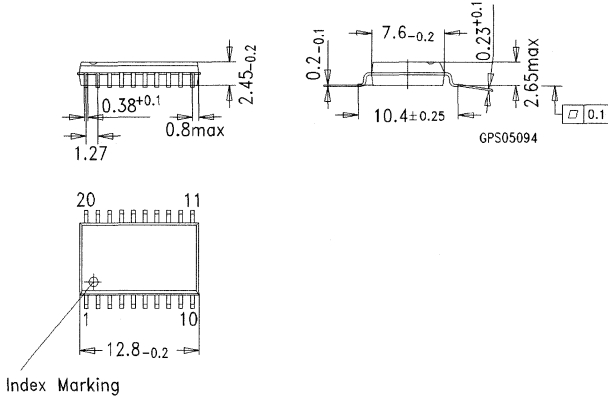


5119

12

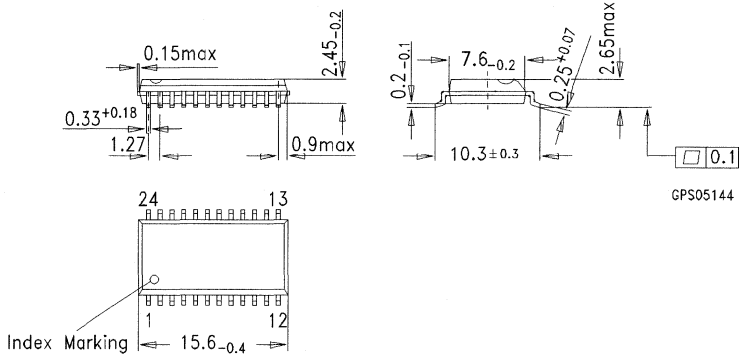
# Gehäusebauformen für ICs Package Outlines for ICs

## P-DSO-20/-20-L-12 (SMD) Kunststoff-Gehäuse / Plastic package (Plastic dual small outline)



5094

## P-DSO-24-I-16 (SMD) Kunststoff-Gehäuse / Plastic package (Plastic dual small outline)

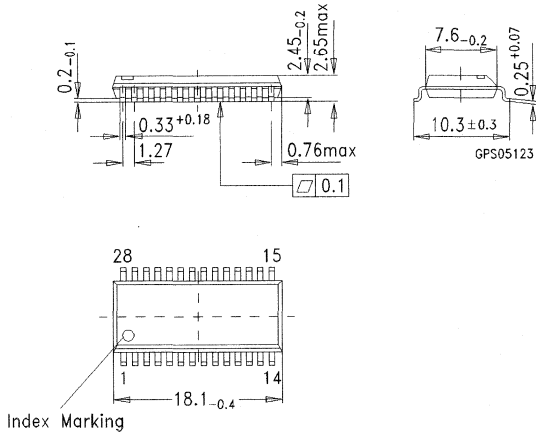


5144



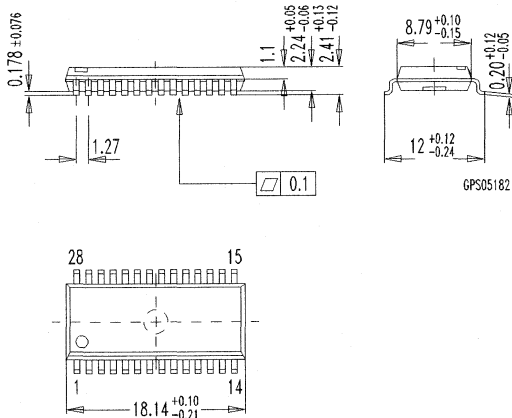
# Gehäusebauformen für ICs Package Outlines for ICs

## P-DSO-28 Kunststoff-Gehäuse / Plastic package (Plastic dual small outline)



5123

## P-DSO-28-350 Kunststoff-Gehäuse / Plastic package (Plastic dual small outline)

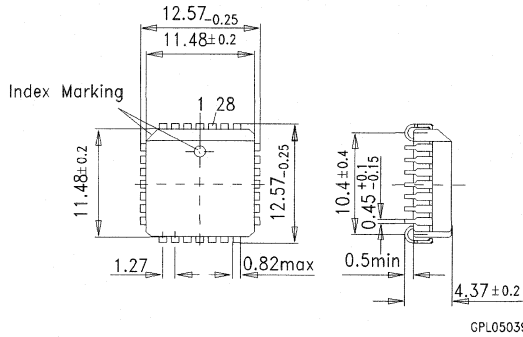


5182

12

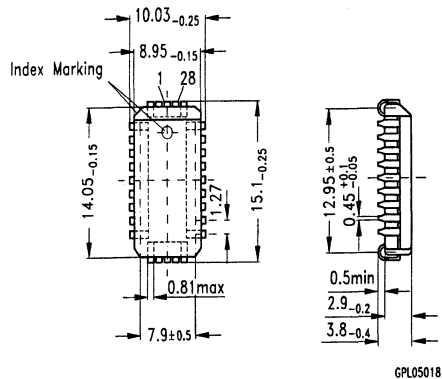
# Gehäusebauformen für ICs Package Outlines for ICs

## P-LCC-28 Kunststoff-Gehäuse / Plastic package (Plastic leaded chip carrier)



5039

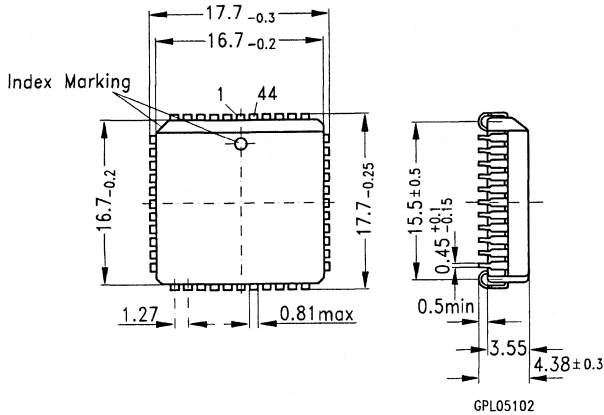
## P-LCC-28-R Kunststoff-Gehäuse / Plastic package (Plastic leaded chip carrier)



5018

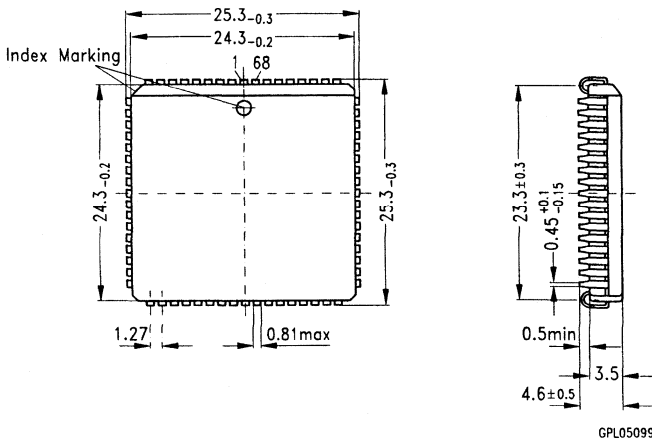
# Gehäusebauformen für ICs Package Outlines for ICs

## P-LCC-44 Kunststoff-Gehäuse / Plastic package (Plastic leaded chip carrier)



5102

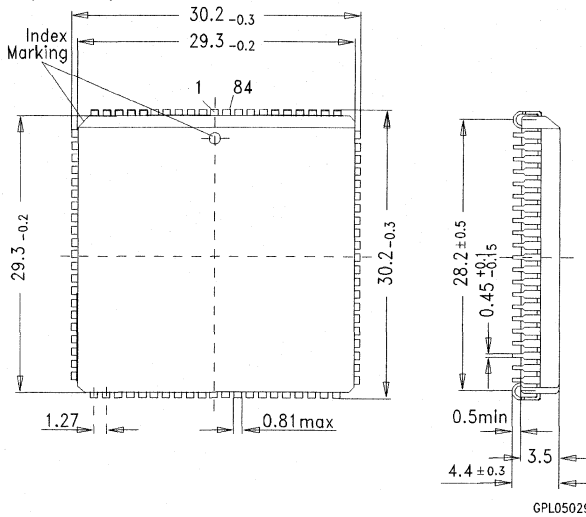
## P-LCC-68 Kunststoff-Gehäuse / Plastic package (Plastic leaded chip carrier)



5099

# Gehäusebauformen für ICs Package Outlines for ICs

## P-LCC-84 Kunststoff-Gehäuse / Plastic package (Plastic leaded chip carrier)



5029

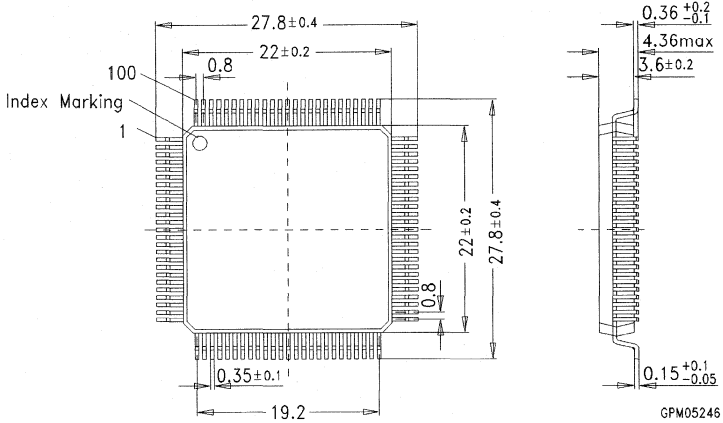
# Gehäusebauformen für ICs

## Package Outlines for ICs

### P-MQFP-100

#### Kunststoff-Gehäuse / Plastic package

(Plastic metric quad flat package)

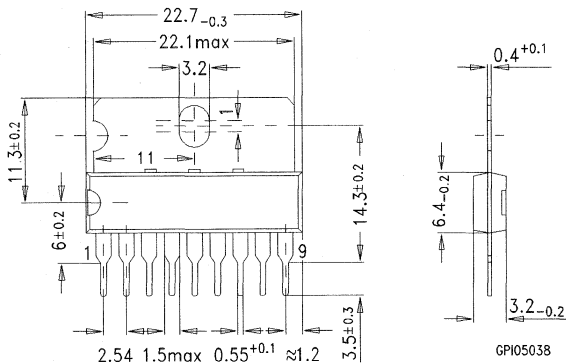


5246

### P-SIP-9

#### Kunststoff-Gehäuse / Plastic package

(Plastic single in-line package)



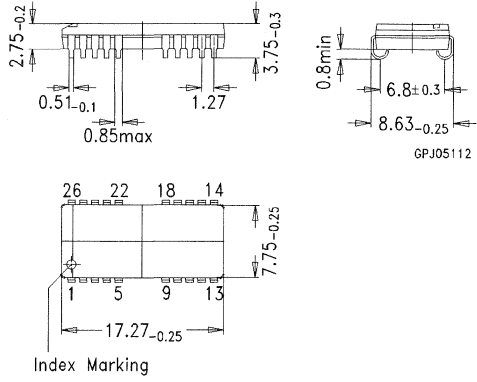
5038

12

# Gehäusebauformen für ICs

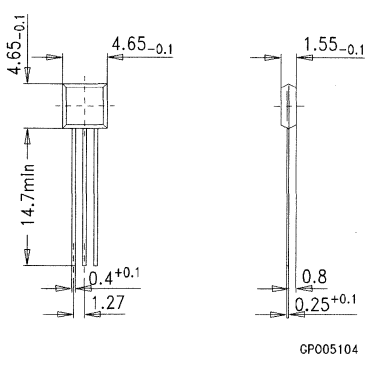
## Package Outlines for ICs

**P-SOJ-26 / -20-300 (SMD)**  
**Kunststoff-Gehäuse / Plastic package**  
 (Plastic small outline j-leaded)



5112

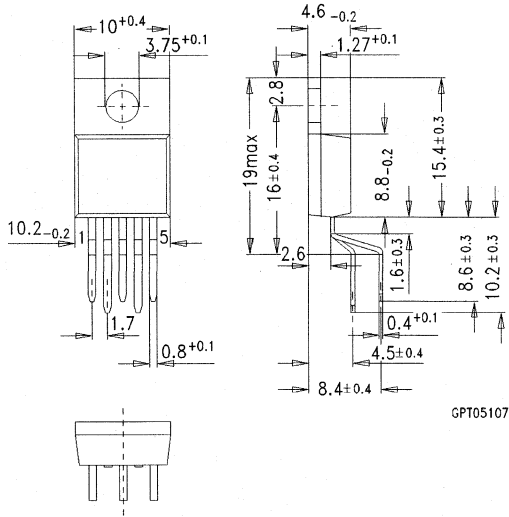
**P-SSO-3**  
**Kunststoff-Gehäuse / Plastic package**  
 (Plastic single small outline)



5104

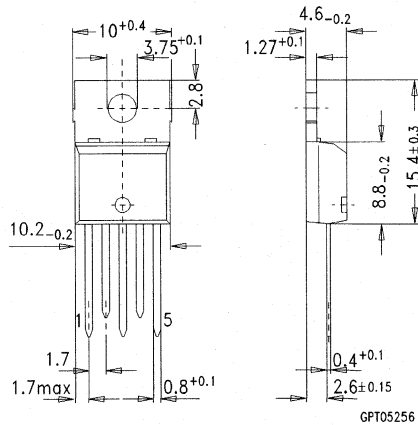
# Gehäusebauformen für ICs Package Outlines for ICs

**P-TO220-5-H**  
Kunststoff-Gehäuse / Plastic package  
(Plastic transistor single outline)



5107

**P-TO220-5-S**  
Kunststoff-Gehäuse / Plastic package  
(Plastic transistor single outline)

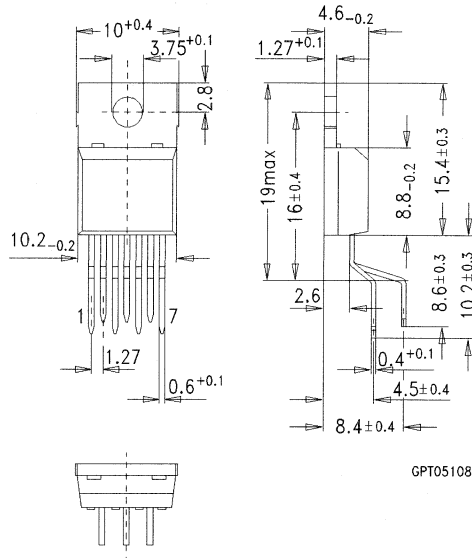


5256

12

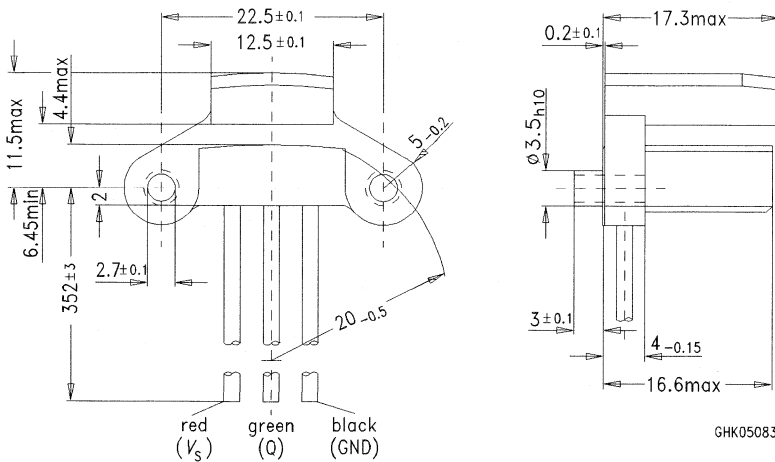
# Gehäusebauformen für ICs Package Outlines for ICs

## P-TO220-7-H Kunststoff-Gehäuse / Plastic package (Plastic transistor single outline)



5108

## Magnetgabelschranke - Sondergehäuse

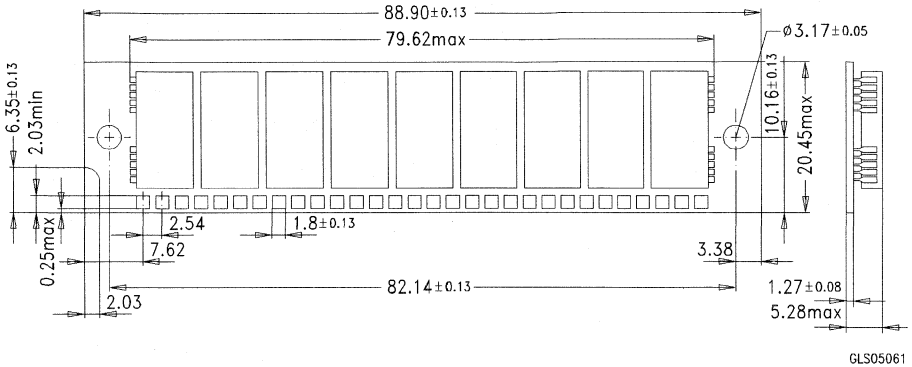


5083



# Gehäusebauformen für ICs Package Outlines for ICs

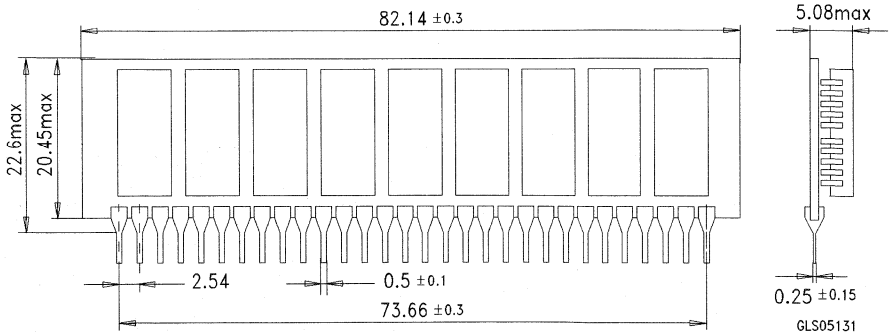
**L-SIM-30-800 (socket type)**  
**Modul-Gehäuse / Module package**  
 (Single in-line memory module)



GLS05061

5061

**L-SIM-30-800 (pin type)**  
**Modul-Gehäuse / Module package**  
 (Single in-line memory module)

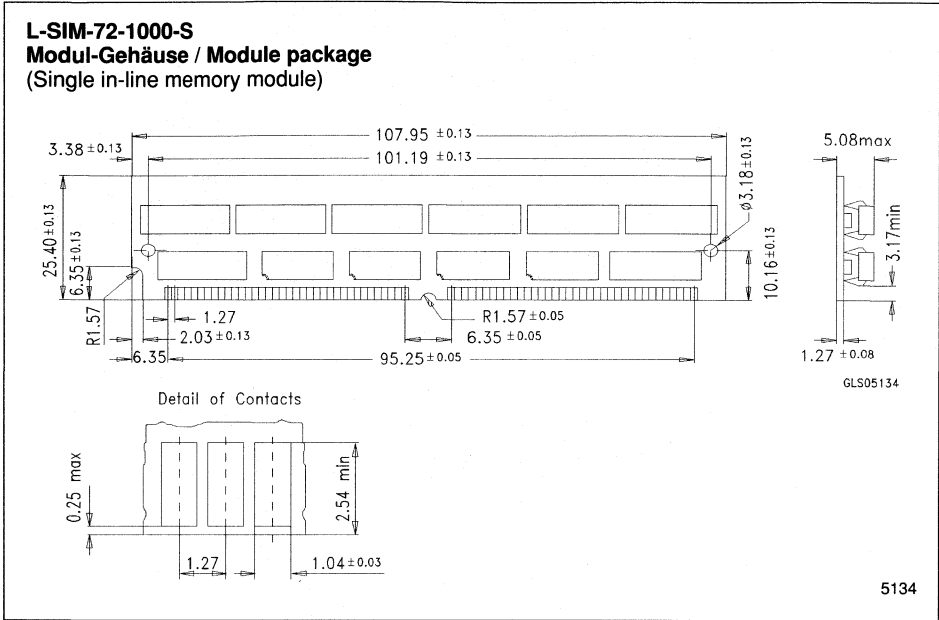


GLS05131

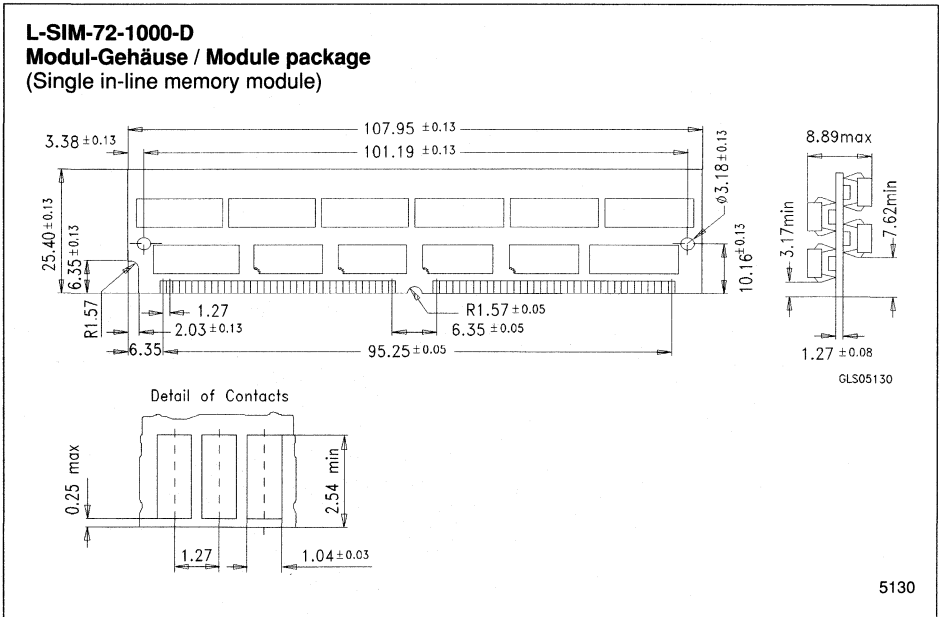
5131

12

# Gehäusebauformen für ICs Package Outlines for ICs



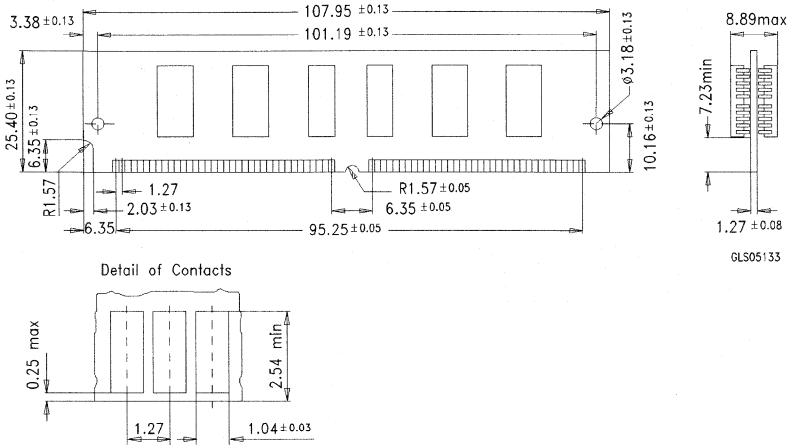
5134



5130

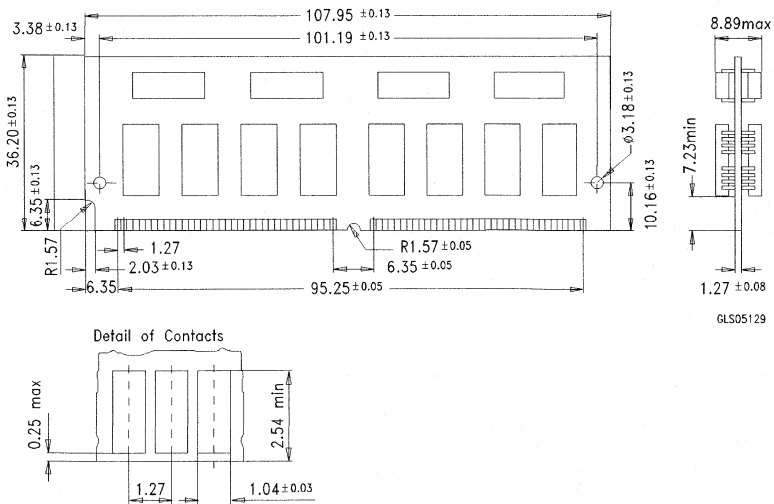
# Gehäusebauformen für ICs Package Outlines for ICs

## L-SIM-72-1000-D Modul-Gehäuse / Module package (Single in-line memory module)



5133

## L-SIM-72-1000-D Modul-Gehäuse / Module package (Single in-line memory module)



5129

12





## Hinweis für Ihre Druckschriften-Bestellung

Dem SDC-Katalog liegt eine Druckschriften-Bestellkarte bei.

Vergessen Sie bitte nicht, Ihre Adresse bzw. Lieferanschrift und die Druckschriften-Bestellnummer deutlich anzugeben.

Die angegebenen Literatur-Preise sind Siemens interne Abgabepreise und gelten für Bestellungen ab 01. 10. 1991 in DM ab Lieferort, ausschließlich Mehrwertsteuer, Verpackung, Versand und Versicherung. Änderungen der angegebenen Preise behalten wir uns vor. Rechnungsstellung erfolgt nach Lieferung.

Betriebsangehörige bestellen bitte mit dem Bestellzettel H38-S2009 (Inland) bzw. H38-S2021 (Ausland). Bestellungen über DV-Bestellverfahren richten Sie bitte an den BZ-Empfänger G3876 in Fürth.

### Sprachenschlüssel

e	englisch	-X-X-7600
d/e	deutsch/englisch	-X-X-7400

### Inhalte der Druckschriften-Arten

#### Lieferprogramm (LM)

Überblick der lieferbaren Halbleiter. Technische Angaben beschränken sich auf das Notwendigste.

#### Datenblatt (DA)

Es enthält alle für den Anwender des Halbleiters erforderlichen Angaben.

#### Datenbuch (DB)

Sammlung der zu den Produktfamilien gehörenden Datenblätter, zusätzlich allgemeine Hinweise (Verarbeitung, Lagerung, Qualität, Anwendung).

#### Produktschrift (PS)

Ausführliche Beschreibung zur Funktion und Anwendung der Halbleiter, z.T. mit Auszügen aus dem Datenblatt.

#### Themenschrift (TS)

Anwendungsorientierte Themen, z.B.  
— Digitales Fernsehen  
— Schaltnetzteile  
— Anwendungsbeispiele  
— Qualität und Zuverlässigkeit  
— User's Manua

## How to order Literature

Attached to the SDC Catalog is an ordering card for literature.

Make sure that you have clearly stated your address and the ordering number(s) of the literature in question.

Our literature prices are Siemens in-house prices and are valid for orders as of October 1, 1991. They are quoted in DM ex place of shipment exclusive of VAT, packing, shipment, and insurance. The prices are subject to change without notice. Your literature order will be invoiced after delivery.

Siemens employees are requested to use the ordering form H38-S2021 or to order directly via DP to receiver no. G3876 in Fürth.

### Language Code

e	English	-X-X-7600
d/e	German/English	-X-X-7400

### Contents of Technical Publications

#### Short Form Catalog (LM)

Overview of semiconductors in production program. Technical details are confined to essentials.

#### Data Sheet (DA)

Contains all details necessary for the user of the semiconductor.

#### Data Book (DB)

Collection of Data Sheets belonging to the product families, including general notes (processing, storage, quality, application).

#### Product Information (PS)

Detailed description of operation and application of semiconductors, sometimes with extracts from the Data Sheet.

#### Special Subject Brochure (TS)

Application-oriented subjects, e.g.  
— Digital television  
— Combination logic circuit components  
— Examples of applications  
— Quality and reliability  
— User's Manua

## Allgemeines / General

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
<b>Bereich Halbleiter / Semiconductor Group</b>			
Bereich Halbleiter	10.90	52	B191-H6554
Semiconductor Group	10.90	52	B191-H6554-X-X-7600
Produktübersicht / Product Guide	10.90	60	B192-H6366-X-X-7400
<b>Datenbuch / Data Book</b>			
Gehäuse-Information / Package Informations	11.91	204	B192-H6529-X-X-7400
<b>Lieferprogramme / Short form Catalogs</b>			
Integrierte Schaltungen, Speicher-Bausteine und Mikrocomputer-Bausteine / Integrated Components, Memory Components and Microcomputer Comp.	10.90	72	B192-B6337-X-X-7400
Optohalbleiter und Sensoren Optoelectronic Semiconductors and Sensors	10.90	112	B143-B6269-X-X-7400
Einzelhalbleiter Small-Signal Semiconductors	05.90	80	B132-B6240-X-X-7400
SIPMOS-Halbleiter SIPMOS Semiconductors	03.92	40	B152-H6534-X-X-7400
<b>Themenschrift / Special-Subject Brochure</b>			
Kundenspez. ICs – Beratung, Design, Entwicklung	10.90	8	B191-B6295
<b>SDC – Preis- und Lagerliste / SDC – Preferred Products</b>			
Semiconductor Distribution Center Halbleiter/Semiconductors Preis- und Lagerliste / Preferred Products	04.92	444	B192-H6549-X-X-7400
<b>Halbleiter / Semiconductor</b>			
Technische Erläuterungen und Kenndaten für Studierende Technical information and characteristic data for students	04.90	272	A19100-L531-F303-1
	09.90	252	A19100-L531-F334-X-7600
<b>Schule für Mikroelektronik / School of Microelectronics</b>			
Schulung Mikrocomputer	02.92	96	B192-H6537
Kurse zu Telecom, LWL-Komponenten, SMD, LH	02.92	50	B192-H6538

# Integrierte Schaltungen / Integrated Circuits

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Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
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## Unterhaltungselektronik / Entertainment Electronics

### Datenbücher / Data Books

ICs für die Unterhaltungselektronik ICs for Entertainment Electronics	90/91	783	B111-B6041-X-X-7400
Flicker-Free Television	91/92	264	B111-H6461-X-X-7400

### Datenblätter / Data Sheets

Picture-in-Picture System	05.91	80	B111-H6391-X-X-7600
VPT-System	08.89	98	B111-B6124-X-X-7600
ICs 868352-Bit Dyn. Sequential Access Memory TV-SAM – SDA 9251X	07.91	28	B111-H6460-X-X-7600
Triple 8-Bit Analog-to-Digital Converter SDA 9205-2	01.92	32	B111-H6514-X-X-7600
Tuner & PLL	09.91	108	B111-H6464-X-X-7600

### Produktschrift / Product Information

Bildspeichersysteme in Fernsehempfängern	04.90	6	B111-B6280
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## Autoelektronik / Automotive Electronics

### Datenbuch / Data Book

ICs für Industrie- und Autoelektronik Industrial and Automotive ICs	91/92	932	B114-B6270-X-X-7400
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### Datenblätter / Data Sheets

Integrated Hall Circuits	02.92	44	B112-H6540-X-X-7600
Intelligent Low-Side and High-Side Switches TLE 4211; 4214; 4215; 4216; 4220; 4224	02.92	68	B112-H6539-X-X-7600
Driver for Automot. Relays TLE 4303F; TLE 4304-2	06.91	12	B112-H6476-X-X-7600

### Produktschriften / Product Information

ICs für die Automobilelektronik ICs for Automotive Electronics	04.91	4	B112-H6442-X-X-7400
Integr. Hall Circuits for Automotive Electronics Integr. Hall-Schaltungen für die Automobilelektronik	11.91	24	B112-H6530-X-X-7400



# Integrierte Schaltungen / Integrated Circuits

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
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## Industrieelektronik / Industrial Electronics

### Datenbücher / Data Books

ICs für Industrie- und Autoelektronik Industrial and Automotive ICs	91/92	932	B114-B6270-X-X-7400
ICs for Radio Equipment		132	B115-B6528-X-X-7600

### Datenblätter / Data Sheets

ICs for CMOS Microprocessor-Compatible A/D Converters	02.92	62	B114-H6521-X-X-7600
12-Bit A/D Converters with 4-Channel Multiplexer SDA 0812A/1812D	05.90	36	B114-B6260-X-X-7600
SLB 0587 Dimmer IC for Halogen Lamps	07.91	24	B114-H6490-X-X-7600
ICs for Chip Cards SLE 4404 Non-Volatile Intelligent Memory with PIN Security Logic	04.91	16	B114-H6404-X-X-7600
TCA 505 B IC for Inductive Two-Wire Proximity Switches with Short-Circuit Protection	09.91	20	B114-H6492-X-X-7600
TCA 605 IC for Inductive Two-Wire Proximity Switches with Short-Circuit Protection	04.91	22	B114-H6414-X-X-7600

### Produktschriften / Product Information

ICs für Induktive Näherungsschalter ICs for Inductive Proximity Switches	10.90	28	B114-B6331-X-X-7400
Schaltnetzteil IC und Power Factor Controller Switched-Mode Power Supply ICs and Power Factor Controllers	07.91	12	B114-H6435-X-X-7400

### Themenschriften / Special-Subject Brochures

Aktive Oberwellenfilterung für Netzgleichrichter höherer Ausgangsleistung Active Harmonic Filtering for Line Rectifiers of Higher Output Power	10.86	6	B1-B3608
	01.87	6	B3-B3608-X-X-7600
Anwendungsbeispiele / Application Notes			
Schaltnetzteil IC und Power Factor Controller Switched-Mode Power Supply ICs and Power Factor Controllers	06.91	104	B114-H6478
	06.91	104	B114-H6478-X-X-7600
Microprocessor-Compatible A/D Converters in CMOS Technology	09.91	24	B114-H6475-X-X-7600

# Integrierte Schaltungen / Integrated Circuits

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
TDA 4918/4919 – Eine neue Generation von Schaltnetz-Bausteinen	04.89	16	B114-B6085
TDA 4918/4919 – A new Generation of Control ICs for Switched-Mode Power Supplies	08.89	16	B114-B6085-X-X-7600
TDA 4814 – Integrierte Steuerschaltung für sinusförmige Netzstromaufnahme	01.88	6	B1-B3607
TDA 4814 – Integrated Control Circuit for Sinusoidal Line Current Consumption	09.90	6	B1-B3607-X-X-7600
Integrierte Schaltnetzteil-Steuerschaltungen TDA 4700, TDA 4718, TDA 4716, TDA 4714, Funktion und Anwendung	07.84	8	B1-B3116
Thyristor-Stromrichter mit der integrierten Phasenanschnittsteuerung TCA 785	05.86	8	B1-B3439
Thyristor Current Rectifier with Integrated Phase Control IC TCA 785	08.86	8	B1-B3439-X-X-7600
Demonstration Board for 12-bit CMOS A/D Converters	09.91	4	B114-H6511-X-X-7600

## Informationstechnik / Communications

### Datenbuch / Data Book

Analoge Endgeräte / Analog Telephone Sets 06.91 184 B115-H6432-X-X-7400

### Benutzer-Handbücher / User's Manuals

HSCX Evaluation Kit 03.90 34 B115-B6257-X-X-7600

ARCOFI® – PSB 2160  
Audio Ringing Codec Filter 07.91 80 B115-H6412-X-X-7600

ARCOFI® - SP PSB 2165  
Audio Ringing Codec Filter  
Featuring Speakerphone Function 01.92 108 B115-H6479-X-X-7600

ISAC® – S PEB 2085  
ISDN Subscriber Access Controller 02.92 276 B115-H6485-X-X-7600

ITAC® – PSB 2110  
ISDN Terminal Adapte Circuit 02.92 172 B115-H6518-X-X-7600

Analog Telephone Evaluations Boards 10.91 40 B115-H6463-X-X-7600

### Datenblätter / Data Sheets

Speech Circuits PSB 4500/4501;PSB 4505/A;  
PSB 4506/A; Hands-Free Add-On Circuit PSB 45030 04.91 92 B115-H6407-X-X-7600

Tone Ringer Circuits  
PSB 6520-2; PSB 6521-2; PSB 6523-T; PSB 6620 05.91 24 B115-H6438-X-X-7600

HSCX – High Level Serial Communications Contr. Ext.  
SAB 82525/82526 / SAF 82525/82526 12.91 108 B115-H6520-X-X-7600

HSCC – High Level Serial Communications Controller  
SAB 82520 / SAF 82520 01.91 55 B115-H6364-X-X-7600

PMB 2200; GSM Transmitter Circuit 05.90 14 B115-B6230-X-X-7600

# Integrierte Schaltungen / Integrated Circuits

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
PMB 2400; GSM Receiver Circuit	10.90	17	B115-H6356-X-X-7600
PMB 2400 Delta Sheet V1.2	01.91	4	B115-H6415-X-X-7600
<b>Produktschriften / Product Information</b>			
ISDN PC Development System – Overview	07.89	7	B115-B6116-X-X-7600
ICs for Communications – Product Overview	08.90	132	B115-B6249-X-X-7600
<b>Themenschriften / Special-Subject Brochures</b>			
PEB 2050 – PBC, Peripheral Board Controller	06.89	48	B115-B6023-X-X-7600
PEB 2052 – PIC, PCM Interface Controller	06.89	24	B115-B6035-X-X-7600
CMOS-PLL Component for use in Mobile RA	03.88	6	B1-B3860-X-X-7600
ISDN Total Commitment to Communications	10.90	20	B115-H6347-X-X-7600
Development Support for Analog Telephone Sets	03.90	8	B115-B6159-X-X-7600
Digital Switching and Conferencing ICs	11.90	12	B115-H6361-X-X-7600
PRI – Primary Rate Interface	10.90	12	B115-B6326-X-X-7600
ISDN – Solutions for ISDN Terminals	02.90	16	B115-B6169-X-X-7600
ISDN PC Development System – Beginner's Guide	01.89	40	B115-B6003-X-X-7600
IOM® – 2 Interface Reference Guide	04.91	52	B115-H6397-X-X-7600
Telefonieren mit Komfort-Chips für Freisprechttelefone	09.90	4	B115-H6350
PC based Development Systems for Telecom and Datacom Design Overview	06.91	20	B115-H6416-X-X-7600
Microsystems in digital communication Innovation through partnership between systems development and microelectronics	09.91	6	B115-H6515-X-X-7600
Telephoning with Ease: Handsfree	04.91	6	B115-H6445-X-X-7600
Serial Communication ICs	08.91	24	B115-H6484-X-X-7600

# Speicher-Bausteine / Memory Components

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
<b>Datenkatalog / Data Catalog</b>			
Memory Components	90/91	264	B166-B6290-X-X-7600
<b>Datenblätter / Data Sheets</b>			
HYB 511000B-60/-70/-80, HYB 511000BL-60/-70 CMOS, 1 M × 1-bit dyn. RAM	10.90	28	B166-B6336-X-X-7600
HYB 514100A-60/-70/-80 4 M × 1-bit dyn. RAM	06.91	20	B166-H6426-X-X-7600
HYB 514256B-60/-70/-80, HYB 514256BL-60/-70 CMOS, 256 K × 4-bit dyn. RAM	10.90	24	B166-B6335-X-X-7600
HYB 514400A-60/-70/-80 1 M × 4-bit dyn. RAM	05.91	24	B166-H6547-X-X-7600
HYM 91000S/L-60/-70/-80, HYM 91000 SL/LL-60/-70 1 M × 9-bit dyn. RAM Module	01.91	18	B166-H6360-X-X-7600
HYM 94000S-80/-10 4 M × 9-bit dyn. RAM Module	01.90	16	B166-B6193-X-X-7600
HYM 361020S-80/-10 1 M × 36-bit dyn. RAM Module	09.90	20	B166-B6315-X-X-7600
HYM 362020S-80/-10 2 M × 36-bit dyn. RAM Module	09.90	20	B166-B6314-X-X-7600
HYM 362500S-80 256 K × 36-bit dyn. RAM Module	09.90	16	B166-B6317-X-X-7600
HYM 365120S-80 512 K × 36-bit dyn. RAM Module	09.90	16	B166-B6316-X-X-7600

# Mikrocomputer-Bausteine / Microcomputer Components

Titel  
Title

Ausgabe Seiten Bestell-Nr.  
Edition Pages Ordering No.

## Allgemeines / General

### Datenkataloge / Data Catalogs

Microcontrollers	90/91	544	B158-B6213-X-X-7600
Microprocessors and Support Components	90/91	808	B158-B6256-X-X-7600
PC Peripherals and System Components	90/91	964	B158-B6255-X-X-7600

### Themenschriften / Special-Subject Brochures

Microcontrollers (Poster)	1989	1	B158-B6194-X-X-7600
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## 16-Bit Ein-Chip Mikrocontroller / 16-Bit Single-Chip Microcontroller

### Benutzer-Handbuch / User's Manual

SAB 80C166/83C166, CMOS	06.90	456	B158-B6247-X-X-7600
Addendum to User's Manual SAB 80C166/83C166	09.90	24	B158-H6345-X-X-7600

### Datenblatt / Data Sheet

SAB 80C166/83C166, CMOS	03.90	60	B158-B6226-X-X-7600
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### Produktschrift / Product Information

SAB 80C166/83C166 – Single-Chip Microcontroller	01.91	40	B158-H6384-X-X-7600
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### Themenschriften / Special-Subject Brochures

SAB 80C166 – auf Schnelligkeit getrimmt	12.89	6	B158-B6206
SAB 80C166/83C166 – Kurzinformation	04.90	12	B158-B6186
SAB 80C166/83C166 – Short Information	02.90	12	B158-B6186-X-X-7600

## 8-Bit Ein-Chip Mikrocontroller / 8-Bit Single-Chip Microcontrollers

### Benutzer-Handbücher / User's Manuals

SAB 80512/80532	02.88	204	B2-B3808-X-X-7600
SAB 80515/80C515 Family	12.90	304	B158-H6367-X-X-7600
SAB 80C517/80C537, CMOS	07.90	352	B258-B6075-X-X-7600

### Datenblätter / Data Sheets

SAB 80512/80532, incl. Ext. Temperature Range	01.90	24	B158-B6211-X-X-7600
SAB 80515/80535	10.88	36	B2-B3353-X-X-7600
SAB 80515/80535, Ext. Temperature Range	02.88	34	B2-B3846-X-X-7600
SAB 80515K	04.88	36	B2-B3701-X-X-7600

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# Mikrocomputer-Bausteine / Microcomputer Components

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
SAB 80C515/80C535, CMOS, incl. Ext. Temp. Range	01.90	52	B158-B6157-X-X-7600
SAB 80C515A/83C515A-5, CMOS	11.91	60	B158-H6452-X-X-7600
SAB 80C517/80C537, CMOS, incl. Ext. Temp. Range	04.91	56	B158-H6398-X-X-7600
SAB 80C517A/83C517A-5, CMOS	04.91	72	B158-H6403-X-X-7600
SAB 8051A/8031A-Familie	03.92	20	B158-H6502-X-X-7600
SAB 8052/8032-Familie	03.92	20	B158-H6466-X-X-7600
SAB 80C52/80C32, CMOS, incl. Ext. Temp. Range	04.91	24	B158-B6382-X-X-7600
SAB 83515-4, CMOS, incl. Ext. Temp. Range	03.90	40	B158-B6246-X-X-7600
EMOD-C517 – Evaluation Module (for SAB 80C517/80C537)	02.90	8	B158-B6228-X-X-7600
<b>Produktschriften / Product Information</b>			
SAB 8051x – 8-bit Mikrocontroller-Familie	01.90	16	B258-B6150
The SAB 8051x 8-bit Microcontroller Family	01.90	16	B258-B6150-X-X-7600
<b>Themenschriften / Special-Subject Brochures</b>			
SAB 8051 – Pocket Guide	10.91	18	B158-H6497-X-X-7600
Externer Speicherzugriff mit 8 Pointern (mit SAB 80C517)	07.89	4	B258-B6135
EPC 535/532 – Experimental Kit (for SAB 80C515/80535)	03.89	8	B258-B6107-X-X-7600
Peripheriebausteine integriert Detailapplikationen zum SAB 80515	05.87	6	B2-B3677
SAB 80C515A/83C515A-5 und/and SAB 80C517A/83C517A-5	12.91	16	B158-H6519-X-X-7400
Die 8051-Mikrocontroller-Familie; Hard- und Softwareeigenschaften; Entwicklungs- unterstützung; Applikationsbeispiele und -pro- gramme; Spezifikationen	1988	228	A19100-L531-F186
Die 8051-Mikrocontroller-Familie Teil 2 Bausteine und Applikationen	1991	409	A19100-L531-F374
Applikationen zur 8051-Mikrocontroller-Familie Anwendungen der Hardware-Komponenten	1988	228	A19100-L531-F228
MC-Tools für den PC XT/AT mit dem Mikrocontroller SAB 80C535	1990	256	A19100-L531-F351

# Mikrocomputer-Bausteine / Microcomputer Components

Titel  
Title

Ausgabe Seiten Bestell-Nr.  
Edition Pages Ordering No.

## 64-Bit Mikroprozessor / 64-Bit Microprocessor

### Benutzer-Handbuch / User's Manual

SAB-R4000 Microprocessor (MIPS)	09.91	588	B158-H6499-X-X-7600
Addendum/Errata to User's Manual SAB-R4000	01.92	16	B158-H6545-X-X-7600

### Datenblatt / Data Sheet

SAB-R4000-RISC Microprocessor	04.92	146	B158-H6370-X-X-7600
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### Themenschriften / Special-Subject Brochures

R4000 / R3000A MIPS RISC Architecture	09.91	548	B158-H6498-X-X-7600
Introduction to the MIPS R4000 Microprocessor	09.91	68	B158-H6500-X-X-7600

## 32-Bit Mikroprozessoren / 32-Bit Microprocessors

### Datenblätter / Data Sheets

SAB-R3000A – RISC Microprocessor	02.92	92	B158-H6480-X-X-7600
SAB-R3010A – Floating-Point Coprocessor	02.92	56	B158-H6481-X-X-7600

### 32-bit System Components

SAB-R3223 Read-Write Buffer	02.92	28	B158-H6392-X-X-7600
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### Themenschriften / Special-Subject Brochures

RISC Prozessors	12.89	6	B158-B6142-V1
RISC Processors	12.89	6	B158-B6142-V1-X-7600
Flexible System-Designs mit dem SAB-R3000 Flexible System Design using the SAB-R3000	03.91	20	B158-H6390-X-X-7400
Big-/Little-Endian und der SAB-R3000 Big/Little Endian and the SAB-R3000	10.91	24	B158-H6472-X-X-7400
MIPS/RISC Architecture R2000/R3000(A)	1990	344	B158-H6359-X-X-7600

## 8-/16-Bit Mikroprozessoren / 8-/16-Bit Microprocessors

### Datenblätter / Data Sheets

SAB 8085AH – 8-bit Microprocessor (3/5 MHz)	08.85	28	B2-B3094-X-X-7600
SAB 8086 – 16-bit Microprocessor (5/8/10 MHz)	07.88	40	B2-B3428-X-X-7600
SAB 8088 – 8-bit Microprocessor (5/8/10 MHz)	08.88	40	B2-B3603-X-X-7600
SAB 80186 – 16-bit Microprocessor (8/10 MHz)	02.90	56	B158-B6220-X-X-7600
SAB 80188 – 8-bit Microprocessor (8/10 MHz)	05.90	64	B158-B6296-X-X-7600
SAB 80286 – 16-bit Microprocessor (8/10/12.5 MHz)	05.90	72	B158-B6275-X-X-7600

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# Mikrocomputer-Bausteine / Microcomputer Components

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.	
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## Themenschriften / Special-Subject Brochures

Die innovativen 80286/80386 Architekturen, Teil 1: Der 80286	1986	296	A19100-L531-G292	54,—
Die innovativen 80286/80386 Architekturen, Teil 2: Der 80386	1988	532	A19100-L531-G293	60,—

## Support-Bausteine / Support Components

### Datenblätter / Data Sheets

SAB 82284 – Clock Generator for SAB 80286 Family <sup>1)</sup>	05.87	16	B2-B3440-X-X-7600	2,50
SAB 82288 – Bus Controller for SAB 80286 Family <sup>1)</sup>	05.90	36	B158-B6282-X-X-7600	5,—
SAB 82289 – Bus Arbiter for SAB 80286 Processor Family <sup>1)</sup>	02.88	36	B2-B3566-X-X-7600	5,—
SAB 8282A/8283A – Octal Latch	01.85	8	B2-B3102-X-X-7600	2,50
SAB 8288A Bus Controller for SAB 8086 Processor Family <sup>2)</sup>	01.85	12	B2-B3103-X-X-7600	2,50
SAB 8289 – Bus Arbiter for SAB 8086/8088 <sup>2)</sup>	10.83	12	B/3010-101	2,50

## PC-Peripherie-Bausteine / PC Peripheral Components

### Datenblätter / Data Sheets

SAB 82C171 – CMOS, Color Palette	12.89	16	B258-B6036-X-X-7600	2,50
SAB 82C176 – CMOS, Color Palette	10.89	20	B258-B6181-X-X-7600	2,50
SAB 82C206 – CMOS, Integrated Periph. Controller	04.89	52	B2-B3870-X-X-7600	5,—
SAB 82C211 – CMOS, CPU/Bus Controller of Siemens PC-AT™ Chipset	03.90	44	B158-B6177-X-X-7600	5,—
SAB 82C212 – CMOS, Page/Interleave Memory Controller of Siemens PC-AT™ Chipset	03.90	48	B158-B6176-X-X-7600	5,—
SAB 82C215 – CMOS, Data/Address Buffer <sup>3)</sup>	02.90	20	B158-B6174-X-X-7600	2,50
SAB 82C552/82C551, CMOS, Advanced Peripheral Interface Controller with FIFOs	09.90	48	B158-B6330-X-X-7600	5,—

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1) for 16-bit Microcomputer Systems

2) for 16-/32-bit Microcomputer Systems

3) of Siemens PC-AT™ Chipset



# Mikrocomputer-Bausteine / Microcomputer Components

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
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## System-Bausteine / System Components

### Benutzer-Handbuch / User's Manual

SAB 82258A/82C258A ADMA, Advanced DMA Controller <sup>2)</sup>	09.90	260	B158-B6305-X-X-7600
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### Datenblätter / Data Sheets

SAB 16C550A – Universal Asynchronous Receiver/Transmitter with FIFOs	04.90	40	B158-B6252-X-X-7600
SAB 7201A – Multi-Protocol Serial Communications Controller	05.86	36	B2-B3398-X-X-7600
SAB 82257 – High Performance DMA Controller <sup>1)</sup>	09.90	68	B158-B6341-X-X-7600
SAB 82C257 – Advanced DMA Controller <sup>1)</sup>	05.91	72	B158-H6399-X-X-7600
SAB 82258A – ADMA, Advanced DMA Controller <sup>2)</sup>	03.90	76	B158-B6261-X-X-7600
SAB 82C258A – ADMA, Advanced DMA Controller <sup>2)</sup>	09.90	92	B158-B6340-X-X-7600
SAB 8237A/8237A-5 – Programmable DMA Controller	03.85	20	B2-B3221-X-X-7600
SAB 82C50/16C450, CMOS Universal Asynchronous Receiver/Transmitter	07.89	30	B2-B3952-X-X-7600
SAB 82C250 – CMOS, Peripheral Interface Controller	04.89	36	B258-B6029-X-X-7600
SAB 82511 – Token Bus Modem	09.89	20	B258-B6151-X-X-7600
SAB 82C55A-2 CMOS, Programmable Peripheral Interface	04.88	28	B2-B3765-X-X-7600
SAB 82556 – USIC, Universal System Interface Contr.	12.89	108	B258-B6175-X-X-7600
SAB 8256A/8256A-2 MUART, Programmable Multifunction Controller	04.88	28	B258-B2471-X-X-7600
SAB 8259A/8259A-2, Progr. Interrupt Controller	09.89	12	B2-B3351-X-X-7600
SAB 82C59A-2, CMOS, Progr. Interrupt Controller	02.88	12	B2-B3774-X-X-7600

### Produktschriften / Product Information

SAB 82258A/SAB 82C258A – ADMA, Advanced DMA Controller for 16/32-bit Microcomputer Systems	03.90	44	B158-B6274-X-X-7600
SAB 82511 – TBM, Token Bus Modem	09.87	20	B2-B3796-X-X-7600

1) for 8-/16-bit Microcomputer Systems

2) for 16-/32-bit Microcomputer Systems

## Semicustom Schaltungen / Semicustom ICs

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
<b>Datenblätter / Data Sheets</b>			
S360 B114 – Universell programmierbarer Zähler mit Flankenauswerteschaltung	10.89	24	B134-B6182
S360 B114 – Universal Programmable Counter with Signal Edge Evaluation Circuit	10.89	24	B134-B6182-X-X-7600
<b>Produktschriften / Product Information</b>			
ADVANCELL CMOS Gate Arrays, Sea-of-Gates, Zelldesigns	01.91	12	B134-H6371
ADVANCELL CMOS Gate Arrays, Sea-of-Gates, Cell Design ICs	01.91	12	B134-H6371-X-X-7600
SCxD4 Series, SCxC1 Series – Gate Array Families	06.91	24	B134-H6393-X-X-7600
Bipolar Arrays – Gate Arrays/Lineare Arrays	10.88	12	B1-B3975-X-X-7600
<b>Themenschriften / Special-Subject Brochures</b>			
ADVANCELL – SCoE Family	02.91	2	B134-H6339-V2-X-7600
SCxC1 Series (Sea-of-Gates, Gate Arrays)	02.91	4	B134-H6408-X-X-7600
SCxD4 Series (Sea-of-Gates, Gate Arrays)	01.90	4	B168-B6196-X-X-7600
SCxE6 Sub-Micron ASICs	10.91	4	B134-B6531-X-X-7600
SCxD4, SCxC1 Series	06.91	24	B134-H6393-X-X-7600
Kundenspezifische ICs (Beratung, Design, Entwicklung)	10.90	8	B191-B6295
CMOS Semicustom ICs Standard Package Catalogue	12.90	40	B134-B6311-X-X-7600
Bipolar Gate Arrays (SH 100 E)	01.92	8	B168-H6542-X-X-7600

# Einzelhalbleiter / Small-Signal Semiconductors

Titel  
Title

Ausgabe Seiten Bestell-Nr.  
Edition Pages Ordering No.

## Datenbücher / Data Books

HF-Transistoren und Dioden, Datenbuch I RF Transistors and Diodes, Data Book I	12.91	1184	B132-H6406-X-X-7400
NF-Transistoren und Dioden, Datenbuch II AF Transistors and Diodes, Data Book II	03.92	1200	B132-H6450-X-X-7400
Transistors for Amplifier and Switching Applications	88/89	160	B3-B3789-X-X-7600

## Themenschriften / Special-Subject Brochures

Qualitätssicherung, Qualität und Zuverlässigkeit Quality Assurance, Quality and Reliability	07.91	34	B132-H6483-X-X-7400
GaAs-Bauelemente für die Nachrichtentechnik (Poster) GaAs Components for the Communications of the Future (Poster)	1987	1	B3-B3715
	1981	1	B3-B3715-X-X-7600

# Optohalbleiter / Opto Semiconductors

Titel  
Title

Ausgabe Seiten Bestell-Nr.  
Edition Pages Ordering No.

## Allgemeines / General

### Datenbuch / Data Book

Optoelectronics 1990 864 B330-B6007-X-X-7600

### Themenschriften / Special-Subject Brochures

Gurtung Optoelektronischer Bauelemente  
IEC-Norm 286.2 und 286.3 12.90 16 B143-B6338  
Packaging of Optoelectronic Components on  
Continuous Tapes IEC Standards 286.2 and 286.3 09.91 16 B143-B6338-X-X-7600

### Poster / Poster

Optohalbleiter von Siemens 1990 1 B143-H6375  
Opto Semiconductors from Siemens basic terms 1990 1 B143-H6375-X-X-7600

## Lumineszenzdioden, LED-Anzeigen / LEDs, Displays

### Datenblätter / Data Sheets

Lumineszenzdioden 07.90 250 B143-B6248  
SMT-TOPLED 10.90 20 B143-H6508-X-X-7400  
DLX1414, DLX2416, DLX3416  
LED Intelligent Displays, DOMINO-Series 05.88 20 B3-B3902-X-X-7600  
SMT-TOPLED, Technical Article 10.90 116 B143-B6349-X-X-7600  
LED-7-Segment-Anzeigen/Display  
LED-Leuchflächen/Light bars 07.91 104 B143-H6405-X-X-7400

### Themenschriften / Special-Subject Brochures

Blue-Light Emitting Silicon-Carbide Diodes  
Materials, Technology, Characteristics 01.85 4 B3-B3314-X-X-7600  
Ausleuchtung von Flächen mit ARGUS-LEDs  
Back-Lighting – Using ARGUS-LEDs 05.87 4 B3-B3822  
05.87 4 B3-B3822-X-X-7600  
Lumineszenzdioden –  
Qualität und Zuverlässigkeit 01.91 24 B143-H6344  
Light Emitting Diodes Quality and Reliability 06.91 24 B143-H6344-X-X-7600

## Detektoren, Infrarot-Emitter (IRED) / Detectors, Infrared Emitter (IRED)

### Datenbuch / Data Book

Si-Foto-Detektoren und IR-Lumineszenzdioden 91/92 592 B143-B6306

# Optohalbleiter / Opto Semiconductors

Titel  
Title

Ausgabe Seiten Bestell-Nr.  
Edition Pages Ordering No.

## Optokoppler, Lichtschranken / Opto Couplers, Light Switches

### Datenbuch / Data Book

Optokoppler 1990 420 B349-B6039

### Datenblatt / Data Sheet

1300 nm Fiber Optic Semiconductor Devices 10.90 52 B155-H6348-X-X-7600

### Themenschriften / Special-Subject Brochures

Optohalbleiter – kurz erklärt 01.90 6 B143-B6225  
Opto Semiconductors – briefly explained 01.90 6 B143-B6225-X-X-7600  
SITAC Used for Automatic Voltage;  
Voltage Switchover from 110 to 220 V 04.87 2 B3-B3709-X-X-7600

## Glasfaserbauelemente und Laser / Fibre-Optic Components and Lasers

### Themenschriften / Special-Subject Brochures

GaAlAs Halbleiter Laser für hohe Leistungen 11.88 6 B3-B3987  
High-Power GaAlAs Semiconductor Laser 02.89 6 B3-B3987-X-X-7600  
Einfache Ansteuerschaltung für Laserarray mit  
Leistungs-Operationsverstärker 07.89 2 B355-B6139  
Simple drive circuit for laser array using 08.89 2 B355-B6139-X-X-7600  
FREDFET Power Half-Bridge –  
Short Circuit Proof through Light-Link Components 07.87 4 B3-B3756-X-X-7600  
High Power Semiconductor Lasers 04.91 6 B155-H6440-X-X-7600  
Optoelektronik für LWL-Anwendungen (SD) 04.91 4 B155-H6437  
Optoelectronics for fiber-optic applications (SD) 04.91 4 B155-H6437-X-X-7600  
Packaging of Optoelectronic Components on  
Continuous Tapes IEC Standards 286.2 and 286.3 09.91 16 B143-B6338-X-X-7600

# Halbleiter-Sensoren / Semiconductors Sensors

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
<b>Datenbücher / Data Books</b>			
Magnetic Sensors	89/90	176	B359-B6033-X-X-7600
Silizium-Temperatur- und Drucksensoren/ Silicon Temperature and Pressure Sensors	90/91	160	B159-B6322-X-X-7400
<b>Datenblätter / Data Sheets</b>			
Hall Position Sensors	01.87	20	B3-B3647-X-X-7600
Silizium-Drucksensoren	03.87	24	B3-B3679
Silicon Pressure Sensors	03.87	24	B3-B3679-X-X-7600
Temperatur Sensoren	11.88	20	B3-B3991
<b>Lieferprogramm / Short Form Catalog</b>			
Halbleiter-Sensoren/Semiconductor Sensors	91/92	12	B159-H6489-X-X-7400
<b>Themenschriften / Special-Subject Brochures</b>			
Hall-Effekt-Positionssensoren auf ionen-implantiertem GaAs	11.80	4	B/2405
Magnetfeldempfindliche Halbleiter-Positions- sensoren, Anwendung, Auswahl und Beispiele	10.85	12	B3-B3399
Magnetic-Field-Sensitive Semiconductor Position Sensors, Selected Types and Applications	02.86	12	B3-B3399-X-X-7600
Berührungslose Positionsmessung mit Hallsensoren	05.86	4	B3-B3501
Non-Contacting Position Detection with Hall Sensors	07.86	4	B3-B3501-X-X-7600
Leistungsmessung mit Hallgeneratoren an Ver- brauchern mit pulsweiten-modulierter Spannung	07.86	4	B3-B3529
Hall Generators Measure Power in Loads Fed from Pulse-Width Modulated Sources	07.86	4	B3-B3529-X-X-7600
Silicon Pressure Sensors for the Range 2 kPa to 40 MPa	09.85	8	B3-B3400-X-X-7600
Halbleiter-Thermistoren: preiswerte Präzision	09.89	4	B359-B6180
Aufbautechniken für Halbleiter- Magnetfeldsensoren	03.90	8	B159-B6259
KSY 14 – der superflache, vielseitige Hallsensor	11.90	6	B159-H6376
KSY 14 – the Ultra-flat Versatile Hall Sensor	11.90	6	B159-H6376-X-X-7600

# SIPMOS-Halbleiter / SIPMOS Semiconductors

Titel Title	Ausgabe Edition	Seiten Pages	Bestell-Nr. Ordering No.
<b>Datenbücher / Data Books</b>			
SIPMOS Halbleiter/SIPMOS Semiconductors	90/91	1192	B152-B6294-X-X-7400
Power Modules SIMOPAC/IGBT	09.91	296	B152-H6413-X-X-7600
<b>Datenblätter / Data Sheets</b>			
Smart SIPMOS – TEMPFET and PROFET	05.90	188	B152-H6389-X-X-7600
IGBT Semiconductors	12.91	32	B152-H6536-X-X-7600
<b>Produktschriften / Product Information</b>			
SIPMOS-Kleinsignaltransistoren	11.89	44	B352-B6155-X-X-7400
SIPMOS Small-Signal Transistors			
Smart SIPMOS – TEMPFET and PROFET	10.91	36	B152-H6467-X-X-7400
Leistungshalbleiter, SIPMOS und IGBT			
Power Semiconductors SIPMOS and IGBT	03.91	56	B152-H6417-X-X-7400
Power Modules SIMOPAC and IGBT	11.91	6	B152-H6513-X-X-7600
Diskette 5 <sup>1</sup> / <sub>4</sub> " : SIPMOS-Halbleiter			
Typenvergleichsliste	05.91	–	B152-H6444
Diskette 5 <sup>1</sup> / <sub>4</sub> " : SIPMOS Semiconductors			
Cross Reference List	05.91	–	B152-H6444-X-X-7600
Diskette 3 <sup>1</sup> / <sub>2</sub> " : SIPMOS-Halbleiter			
Typenvergleichsliste	05.91	–	B152-H6436
Diskette 3 <sup>1</sup> / <sub>2</sub> " : SIPMOS Semiconductors			
Cross Reference List	05.91	–	B152-H6436-X-X-7600
<b>Themenschriften / Special-Subject Brochures</b>			
Active Harmonic Filtering for Line Rectifier	09.90	6	B3-B3608-X-X-7600
SIPMOS von Siemens (Poster)	06.90	1	B152-B6231
SIPMOS-Leistungstransistoren			
SIPMOS-Power Transistors	11.91	4	B152-H6493-X-X-7600
Anwendungsbeispiele für SIPMOS-Transistoren <sup>1)</sup>	1991	156	B152-H6428
Application Notes for SIPMOS Transistors <sup>2)</sup>	1991	78	B152-H6428-X-X-7600

Anmerkungen siehe nächste Seite.  
Notes see next page.

# SIPMOS-Halbleiter / SIPMOS Semiconductors

Titel  
Title

Ausgabe Seiten Bestell-Nr.  
Edition Pages Ordering No.

## 1) Inhalt

- Durchflußwandler-SNT mit mehreren Ausgangsspannungen (5 V/10 A,  $\pm 12$  V/2 A, TDA 4718 und SIPMOS)
- Schaltnetzteil mit neuer integrierter Schaltung TDA 4918 liefert 250 W
- Integrierte Steuerschaltung für freischwingende Sperrwandlernetzteile mit MOSFET als Leistungsschalter
- Tiefsetzsteller mit SIPMOS und TDA 4716 A
- DC/DC-Wandler von 12 V auf  $\pm 25$  V; 180 W mit SIPMOS BUZ 71A
- Schaltnetzteile für Eingangsspannungs-Weitbereich mit der integrierten Schaltung TDA 4919
- 20-kHz-Gegentaktnetzteil (SNT) mit IGBT BUP 304 und SNT-IC TDA 4918 für eine 36 V/400 W Halogenlampe
- 3-Phasenumrichter, kurzschlußsicher mit FREDFET-Transistoren und Pulsweitenmodulator SLE 4520 (Motorsteuerung)  $\pm 80$  V/ $\pm 5,0$  A Doppel-(Push-Pull)-Sperrwandler mit IGBT BUP 304 und Gegentakt-SNT IC TDA 4918
- Aktives Oberschwingfilter mit konstanter Betriebsfrequenz und 600 W Ausgangsleistung
- 220 W Schaltnetzteil mit Eintaktdurchflußwandler Eingang: AC-Netz 220 V  $\pm 20$  %; Ausgang: 5 V/22 A; 12 V/8 A;  $-12$  V/1 A
- 1000 W SNT (30 V/33 A) mit IGBT BUP 304 und SNT-IC TDA 4918
- Schaltnetzteil in Current-Mode-Technik mit der integrierten Schaltung TDA 4919

## 2) Contents

- Active harmonics filter with constant operating frequency and 600 W output power
- Switched-mode power supply with input voltage broadband using the TDA 4919 IC
- $\pm 80$  V/ $\pm 5.0$  A double (push-pull) flyback converter using the BUP 304 IGBT and the TDA 4918 push-pull SMPS IC
- Feed forward converter SMPS with several output voltages
- DC/DC converter from 12 V to  $\pm 25$  V/180 W using SIPMOS transistors BUZ 71A
- Buck converters using SIPMOS transistors and TDA 4716 A
- Switched-mode power supply with new IC gives TDA 4716 A
- TDA 4918 and TDA 4919 – new generation of control ICs for switched-mode power supplies



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**Typenverzeichnis**  
**Bestellnummernverzeichnis**

**Summary of Types**  
**Summary of Ordering Codes**

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# Typenverzeichnis, alphanumerisch geordnet

## Summary of Types in Alphanumerical Order

Typ Type	Bestellnummer Ordering Code	Seite Page	Typ Type	Bestellnummer Ordering Code	Seite Page
Flächenleuchte Illuminated surface liegend/horizontal	Q62902-B167-F222	167	BAS 78 D	Q62702-A0913	73
	Q62902-B168-F222	167	BAS 79 A	Q62702-A0914	73
	Q62902-B169-F222	167	BAS 79 B	Q62702-A0915	73
	Q62902-B170-F222	167	BAS 79 C	Q62702-A0916	73
	Q62902-B171-F222	167	BAS 79 D	Q62702-A0917	73
	Q62902-B172-F222	167	BAT 14-099 R	Q62702-A65	102
Flächenleuchte Illuminated surface stehend/vertikal	Q62902-B173-F222	167	BAT 15-099 R	Q62702-A67	102
	Q62902-B174-F222	167	BAT 17	Q62702-A504	102
	Q62902-B175-F222	167	BAT 17-04	Q62702-A775	102
	Q62902-B176-F222	167	BAT 17-05	Q62702-A776	102
	Q62902-B177-F222	167	BAT 17-06	Q62702-A777	102
	Q62902-B178-F222	167			
4N 25	Q68000-A5018	267	BAT 62	Q62702-A971	102
4N 26	Q68000-A5017	267	BAT 64	Q62702-A879	74
4N 27	Q68000-A5707	267	BAT 64-04	Q62702-A961	74
4N 35	Q68000-A7302	267	BAT 64-05	Q62702-A962	74
4N 36	Q68000-A7303	267	BAT 64-06	Q62702-A963	74
4N 37	Q68000-A7304	267	BAT 64-07	Q62702-A964	74
6N 135	Q68000-A7961	274	BAT 68	Q62702-A926	102
6N 136	Q68000-A5646	274	BAT 68-04	Q62702-A0004	102
6N 138	Q68000-A6410	267	BAT 68-05	Q62702-A0015	102
6N 139	Q68000-A6411	267	BAT 68-06	Q62702-A0019	102
			BAT 68-07	Q62702-A0044	102
BAL 74	Q62702-A718	73	BAV 70	Q68000-A6622	73
BAR 12-1	Q62702-A651	103	BAV 99	Q68000-A549	73
BAR 14-1	Q62702-A772	103	BAW 101	Q62702-A712	73
BAR 15-1	Q62702-A731	103	BAW 56	Q62702-A688	73
BAR 16-1	Q62702-A773	103			
BAR 17	Q62702-A858	103	BBY 51	Q62702-B631	103
BAR 60	Q62702-A786	103			
BAR 61	Q62702-A120	103	BC 167 A	Q62702-C74	78
BAR 74	Q62702-A704	73	BC 167 B	Q62702-C75	78
BAS 16	Q62702-A739	73	BC 237 A	Q62702-C276	78
BAS 19	Q62702-A95	73	BC 237 B	Q62702-C277	78
BAS 20	Q62702-A113	73	BC 238 B	Q62702-C279	78
BAS 21	Q62702-A79	73	BC 238 C	Q62702-C280	78
BAS 28	Q62702-A77	73	BC 239 C	Q62702-C282	78
BAS 40	Q62702-D339	74	BC 257 A	Q62702-C184	79
BAS 40-02	Q62702-A629	102	BC 257 B	Q62702-C206	79
BAS 40-04	Q62702-D980	74	BC 307 A	Q62702-C283	79
BAS 40-05	Q62702-D979	74	BC 307 B	Q62702-C324	79
BAS 40-06	Q62702-D978	74	BC 308 B	Q62702-C286	79
BAS 40-07	Q62702-A697	74	BC 308 C	Q62702-C393	79
BAS 70	Q62702-A118	74	BC 327-16	Q62702-C311-V3	79
BAS 70-02	Q62702-A624	102	BC 327-25	Q62702-C311-V4	79
BAS 70-04	Q62702-A730	74	BC 327-40	Q62702-C311-V2	79
BAS 70-05	Q62702-A711	74	BC 328-25	Q62702-C312-V4	79
BAS 70-06	Q62702-A774	74	BC 328-40	Q62702-C312-V2	79
BAS 70-07	Q62702-A846	74	BC 337-16	Q62702-C313-V3	78
BAS 78 A	Q62702-A0910	73	BC 337-2	Q62702-C313-V1	78
BAS 78 B	Q62702-A0911	73	BC 337-40	Q62702-C313-V2	78
BAS 78 C	Q62702-A0912	73	BC 338-25	Q62702-C314-V2	78
			BC 338-40	Q62702-C314-V3	78

## Typenverzeichnis, alphanumerisch geordnet

### Summary of Types in Alphanumerical Order

Typ Type	Bestellnummer Ordering Code	Seite Page	Typ Type	Bestellnummer Ordering Code	Seite Page
BC 368	Q62702-C747	78	BC 858 B	Q62702-C1698	82
BC 369	Q62702-C748	79	BC 858 C	Q62702-C1507	82
BC 414 C	Q62702-C376-V2	78	BC 875	Q62702-C853	88
BC 415 C	Q62702-C377-V3	79	BC 876	Q62702-C943	88
BC 416 C	Q62702-C378-V3	79	BC 877	Q62702-C854	88
BC 516	Q62702-C944	88	BC 878	Q62702-C942	88
BC 517	Q62702-C825	88	BC 879	Q62702-C855	88
BC 546 B	Q62702-C687-V2	78	BC 880	Q62702-C941	88
BC 547 B	Q62702-C688-V2	78	BCP 28	Q62702-C2134	94
BC 548 B	Q62702-C689-V2	78	BCP 29	Q62702-C2136	94
BC 548 C	Q62702-C689-V3	78	BCP 48	Q62702-C2135	94
BC 549 C	Q62702-C690-V2	78	BCP 49	Q62702-C2137	94
BC 550 C	Q62702-C691-V2	78	BCP 51	Q62702-C2107	86
BC 556 B	Q62702-C692-V2	79	BCP 51-10	Q62702-C2109	86
BC 557 B	Q62702-C693-V2	79	BCP 51-16	Q62702-C2110	86
BC 558 B	Q62702-C694-V2	79	BCP 52	Q62702-C2146	86
BC 558 C	Q62702-C694-V3	79	BCP 52-10	Q62702-C2112	86
BC 559 C	Q62702-C695-V3	79	BCP 52-16	Q62702-C2113	86
BC 560 B	Q62702-C696-V2	79	BCP 53	Q62702-C2147	86
BC 560 C	Q62702-C696-V3	79	BCP 53-10	Q62702-C2115	86
BC 635	Q68000-A3360	78	BCP 53-16	Q62702-C2116	86
BC 636	Q68000-A3365	79	BCP 54	Q62702-C2117	86
BC 637	Q68000-A2285	78	BCP 54-10	Q62702-C2119	86
BC 638	Q68000-A3366	79	BCP 54-16	Q62702-C2120	86
BC 639	Q68000-A3361	78	BCP 55	Q62702-C2148	86
BC 640	Q68000-A3367	79	BCP 55-10	Q62702-C2122	86
BC 807-16	Q62702-C1735	82	BCP 55-16	Q62702-C2123	86
BC 807-25	Q62702-C1689	82	BCP 56	Q62702-C2149	86
BC 807-40	Q62702-C1721	82	BCP 56-10	Q62702-C2125	86
BC 808-16	Q62702-C1736	82	BCP 56-16	Q62702-C2106	86
BC 808-25	Q62702-C1504	82	BCP 68	Q62702-C2126	86
BC 808-40	Q62702-C1692	82	BCP 69	Q62702-C2130	86
BC 817-16	Q62702-C1732	81	BCV 26	Q62702-C1493	90
BC 817-25	Q62702-C1690	81	BCV 27	Q62702-C1474	90
BC 817-40	Q62702-C1738	81	BCV 46	Q62702-C1501	90
BC 818-16	Q62702-C1739	81	BCV 47	Q62702-C1501	90
BC 818-25	Q62702-C1740	81	BCV 48	Q62702-C1854	92
BC 818-40	Q62702-C1505	81	BCV 49	Q62702-C1832	92
BC 846 A	Q62702-C1772	81	BCW 60A	Q62702-C1517	81
BC 846 B	Q62702-C1746	81	BCW 60B	Q62702-C1497	81
BC 847 A	Q62702-C1884	81	BCW 60C	Q62702-C1476	81
BC 847 B	Q62702-C1687	81	BCW 60D	Q62702-C1477	81
BC 847 C	Q62702-C1715	81	BCW 61A	Q62702-C452	82
BC 848 A	Q62702-C1741	81	BCW 61B	Q62702-C1585	82
BC 848 B	Q62702-C1704	81	BCW 61C	Q62702-C1478	82
BC 848 C	Q62702-C1506	81	BCW 61D	Q62702-C1556	82
BC 856 A	Q62702-C1771	82	BCW 65A	Q62702-C1516	81
BC 856 B	Q62702-C1886	82	BCW 65B	Q62702-C1612	81
BC 857 A	Q62702-C1850	82	BCW 65C	Q62702-C1479	81
BC 857 B	Q62702-C1688	82	BCW 66F	Q62702-C1892	81
BC 857 C	Q62702-C1851	82	BCW 66G	Q62702-C1526	81
BC 858 A	Q62702-C1742	82	BCW 66H	Q62702-C1632	81

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BCW 67A	Q62702-C1560	83	BFP 280	Q62702-F1300	114
BCW 67B	Q62702-C1480	83	BFP 81	Q62702-F1122	114
BCW 67C	Q62702-C1681	83	BFP 93A	Q62702-F1144	114
BCW 68F	Q62702-C1893	83	BFQ 17P	Q62702-F983	107
BCW 68G	Q62702-C1322	83	BFQ 181	Q62702-F1295	107
BCW 68H	Q62702-C1555	83	BFQ 193	Q62702-F1312	107
BCX 41	Q62702-C1659	81	BFQ 19S	Q62702-F1088	107
BCX 42	Q62702-C1485	83	BFQ 29P	Q62702-F659	110
BCX 51	Q62702-C1847	83	BFQ 645	Q62702-F1283	107
BCX 52	Q62702-C1743	83	BFQ 69	Q62702-F780	112
BCX 53	Q62702-C905	83	BFQ 70	Q62702-F774	107
BCX 54	Q62702-C1745	82	BFQ 71	Q62702-F775	107
BCX 55	Q62702-C1729	82	BFQ 72	Q62702-F776	107
BCX 56	Q62702-C1614	82	BFQ 73S	Q62702-F1104	107
BCX 68	Q62702-C1572	82	BFQ 74	Q62702-F778	107
BCX 69	Q62702-C1714	83	BFQ 81	Q62702-F1049	110
BCX 70G	Q62702-C1539	81	BFQ 82	Q62702-F1189	107
BCX 70H	Q62702-C1481	81	BFR 15A	Q62702-F460	107
BCX 70J	Q62702-C1552	81	BFR 180	Q62702-F1296	110
BCX 70K	Q62702-C1571	81	BFR 181	Q62702-F1314	110
BCX 71G	Q62702-C1482	83	BFR 182	Q62702-F1315	110
BCX 71H	Q62702-C1586	83	BFR 183	Q62702-F1316	110
BCX 71J	Q62702-C1554	83	BFR 193	Q62702-F1267	110
BCX 71K	Q62702-C1654	83	BFR 194	Q62702-F1346	110
BF 720	Q62702-F1238	100	BFR 280	Q62702-F1298	110
BF 721	Q62702-F1239	100	BFR 34A	Q62702-F346-S1	112
BF 722	Q62702-F1306	100	BFR 35AP	Q62702-F938	110
BF 723	Q62702-F1309	100	BFR 90	Q62702-F560	112
BFG 135A	Q62702-F1322	116	BFR 91	Q62702-F559	112
BFG 193	Q62702-F1291	116	BFR 91A	Q62702-F735	112
BFG 194	Q62702-F1321	116	BFR 92P	Q62702-F1050	110
BFG 196	Q62702-F1292	116	BFR 93A	Q62702-F1086	110
BFG 19S	Q62702-F1359	116	BFR 93P	Q62702-F1051	110
BFG 235	Q62702-F1432	116	BFR 96	Q62702-F516	112
BFN 16	Q62702-F885	96	BFR 96S	Q62702-A5689	112
BFN 17	Q62702-F884	96	BFS 17P	Q62702-F940	110
BFN 26	Q62702-F976	96	BFS 55A	Q62702-F454	107
BFN 27	Q62702-F977	96	BFT 65	Q62702-F451	112
BFN 36	Q62702-F1246	100	BFT 66	Q62702-F456	107
BFN 37	Q62702-F1304	100	BFT 92	Q62702-F1062	110
BFN 38	Q62702-F1303	100	BFT 93	Q62702-F1063	110
BFN 39	Q62702-F1305	100	BFT 97	Q62702-F514	112
BFP 180	Q62702-F1297	114	BFT 98	Q62702-F523	116
BFP 181	Q62702-F1317	114	BFT 98T	Q62702-F877	112
BFP 182	Q62702-F1318	114	BFT 99	Q62702-F524	116
BFP 183	Q62702-F1319	114	BFW 92	Q62702-F321	112
BFP 193	Q62702-F1282	114	BFX 59	Q62702-F422-E5	107
BFP 194	Q62702-F1347	116	BFX 59F	Q62702-F369-E4	107
BFP 196	Q62702-F1320	114	BFX 59R	Q62702-F370-E2	107
BFP 22	Q62702-F621	96	BFX 60	Q60206-X60	107
BFP 23	Q62702-F622	96	BFY 90	Q62702-F297	107

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BP 103	Q62702-P75	235	BPX 90 F	Q62702-P928	220
BP 103 B	Q62702-P1189	235	BPX 90	Q62702-P47	220
BP 103 B-2	Q62702-P85-S2	235	BPX 91 B	Q62702-P48-S	220
BP 103 B-3	Q62702-P85-S3	235	BPX 92	Q62702-P49	220
BP 103 B-4	Q62702-P85-S4	235	BPY 11 P IV	Q60215-Y111-S4	217
BP 103-2	Q62702-P79-S1	235	BPY 11 P V	Q60215-Y111-S5	217
BP 103-3	Q62702-P79-S2	235	BPY 12 H I	Q62702-P1029	220
BP 103-4	Q62702-P79-S4	235	BPY 12	Q62702-P9	220
BP 103-5	Q62702-P781	235	BPY 47 P	Q680215-Y66	217
BP 103-6	Q62702-P768	235	BPY 48 P	Q60215-Y65	217
BP 104 BS	Q62702-P917	220	BPY 62-4	Q60215-Y1113	235
BP 104	Q62702-P84	220	BPY 62-5	Q62702-P1113	235
BPW 21	Q62702-P885	220	BPY 62-6	Q62702-P1114	235
BPW 32	Q62702-P74	220	BPY 63 P	Q60215-Y63-S1	217
BPW 33	Q62702-P76	220	BPY 64 P	Q60215-Y67	217
BPW 34 B	Q62702-P945	220	BRT 11H	C67079-A1000-A6	329
BPW 34 F	Q62702-P929	220	BRT 12H	C67079-A1001-A6	329
BPW 34 FA	Q62702-P1129	220	BRT 13H	C67079-A1002-A6	329
BPW 34	Q62702-P73	220	BRT 21H	C67079-A1020-A6	329
BPX 38	Q62702-P15	235	BRT 22H	C67079-A1021-A6	329
BPX 38-2	Q62702-P15-S2	235	BRT 23H	C67079-A1022-A6	329
BPX 38-3	Q62702-P15-S3	235	BS 107	Q67000-S060	323
BPX 38-4	Q62702-P15-S4	235	BS 170	Q67000-S061	323
BPX 38-5	Q62702-P15-S5	235	BSM 100GB 100 D	C67076-A2103-A2	336
BPX 38-6	Q62702-P1111	235	BSM 101AR	C67076-S1018-A2	335
BPX 43	Q62702-P16	235	BSM 111AR	C67076-S1013-A2	335
BPX 43-2	Q62702-P16-S2	235	BSM 120GB 100 D	C67076-A2107-A2	340
BPX 43-3	Q62702-P16-S3	235	BSM 121AR	C67076-S1014-A2	335
BPX 43-4	Q62702-P16-S4	235	BSM 141	C67076-A1010-A2	335
BPX 43-5	Q62702-P16-S5	235	BSM 150GB 100 D	C67076-A2102-A2	336
BPX 43-6	Q62702-P1112	235	BSM 150GB 120 D	C67076-A2108-A2	340
BPX 48	Q62702-P17-S1	220	BSM 151	C67076-A1004-A2	335
BPX 60	Q62702-P54	220	BSM 151F	C67076-A1050-A2	335
BPX 61	Q62705-P25	220	BSM 15GD 100 D	C67076-A2500-A2	336
BPX 62	Q60215-Y62	235	BSM 15GD 120 D	C67076-A2504-A2	340
BPX 63	Q62702-P55	220	BSM 181	C67076-A1001-A2	335
BPX 65	Q62702-P27	220	BSM 181F	C67076-A1052-A2	335
BPX 66	Q62702-P80	220	BSM 181R	C67076-A1016-A2	335
BPX 79	Q62702-P51	217	BSM 191	C67076-A1009-A2	335
BPX 80	Q62702-P28	242	BSM 191F	C67076-A1053-A2	335
BPX 81	Q62702-P20	235	BSM 200GA 100 D	C67076-A2001-A2	336
BPX 81-2	Q62702-P43-S2	235	BSM 200GA 120 D	C67076-A2006-A2	340
BPX 81-3	Q62702-P43-S3	235	BSM 204A	C67076-S1102-A2	335
BPX 81-4	Q62702-P43-S4	235	BSM 214A	C67076-S1100-A2	335
BPX 82	Q62702-P21	242	BSM 224A	C67076-S1101-A2	335
BPX 83	Q62702-P25	242	BSM 244F	C67076-A1155-A3	335
BPX 84	Q62702-P30	242	BSM 254F	C67076-A1150-A2	335
BPX 85	Q62702-P31	242	BSM 25GB 100 D	C67076-A2101-A2	336
BPX 86	Q62702-P22	242	BSM 25GB 120 D	C67076-A2109-A2	340
BPX 87	Q62702-P32	242	BSM 25GD 100 D	C67076-A2501-A2	336
BPX 88	Q62702-P33	242	BSM 25GD 120 D	C67076-A2505-A2	340
BPX 89	Q62702-P26	242			

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BSM 284F	C67076-A1152-A2	335	BSS 89	Q62702-S455	324
BSM 294F	C67076-A1151-A2	335	BSS 91	Q62702-S457	324
BSM 300GA 100 D	C67076-A2000-A2	336	BSS 92	Q62702-S458	325
BSM 300GA 120 D	C67076-A2007-A2	340	BSS 95	Q62702-S461	324
BSM 50GB 100 D	C67076-A2100-A2	336	BSS 97	Q62702-S463	323
BSM 50GB 120 D	C67076-A2105-A2	340	BSS 98	Q62702-S464	323
BSM 75GB 100 D	C67076-A2104-A2	336	BTS 100	C67078-A5007-A2	330
BSM 75GB 120 D	C67076-A2106-A2	340	BTS 110	C67078-A5008-A2	330
BSP 125	Q62702-S654	324	BTS 112A	C67078-S5014-A3	330
BSP 129	Q67000-S073	325	BTS 113A	C67078-S5015-A3	330
BSP 135	Q62702-S655	325	BTS 114	C67078-A5000-A3	330
BSP 149	Q67000-S071	325	BTS 115	C67078-A5004-A4	330
BSP 17	Q67000-S220	323	BTS 120	C67078-A5009-A2	330
BSP 295	Q67000-S066	323	BTS 121A	C67078-S5010-A2	330
BSP 296	Q67000-S067	323	BTS 129	C67078-A5013-A2	330
BSP 297	Q67000-S068	323	BTS 130	C67078-A5001-A3	330
BSP 315	Q67000-S075	325	BTS 131	C67078-A5002-A4	330
BSP 316	Q67000-S092	325	BTS 132	C67078-A5003-A4	330
BSP 317	Q67000-S094	325	BTS 140A	C67078-S5011-A2	330
BSP 318	Q67000-S127	323	BTS 240A	C67078-S5100-A3	330
BSP 324	Q67000-S215	324	BTS 410D	C67078-S5305-A3	333
BSP 50	Q62702-P1163	94	BTS 410E	C67078-S5305-A4	333
BSP 51	Q62702-P1164	94	BTS 410F	C67078-S5305-A5	333
BSP 52	Q62702-P1165	94	BTS 410G	C67078-S5305-A6	333
BSP 60	Q62702-P1166	94	BTS 412A	C67078-A5300-A5	333
BSP 61	Q62702-P1167	94	BTS 412B	C67078-S5300-A9	333
BSP 62	Q62702-P1168	94	BTS 413A	C67078-A5307-A2	333
BSP 88	Q67000-S070	324	BTS 432D	C67078-S5303-A3	333
BSP 89	Q62702-S652	324	BTS 432E	C67078-S5303-A4	333
BSP 92	Q62702-S653	325	BTS 432F	C67078-S5303-A5	333
BSS 100	Q62702-S483	323	BUP 101	C67060-A1000-A2	321
BSS 101	Q62702-S484	324	BUP 200	C67078-A4400-A2	321
BSS 110	Q62702-S489	325	BUP 202	C67078-A4401-A2	321
BSS 119	Q62702-S631	323	BUP 203	C67078-A4402-A2	321
BSS 123	Q62702-S512	323	BUP 304	C67078-A4200-A2	321
BSS 124	Q67002-S614	324	BUP 307	C67078-A4201-A2	321
BSS 125	Q62702-S505	324	BUZ 1	C67078-S1331-A2	317
BSS 129	Q62702-S510	325	BUZ 10	C67078-S1300-A2	317
BSS 131	Q62702-S565	324	BUZ 10L	C67078-S1329-A2	317
BSS 135	Q62702-S601	325	BUZ 11	C67078-S1301-A2	317
BSS 138	Q62702-S566	323	BUZ 11A	C67078-S1301-A3	317
BSS 139	Q62702-S612	325	BUZ 11AL	C67078-S1330-A3	317
BSS 149	Q62702-S623	325	BUZ 11S2	C67078-S1301-A5	317
BSS 192	Q62702-S634	325	BUZ 12A	C67078-S1331-A3	317
BSS 229	Q62702-S567	325	BUZ 12AL	C67078-S1332-A3	317
BSS 295	Q62702-S603	323	BUZ 15	C67078-S1001-A2	317
BSS 296	Q62702-S615	323	BUZ 171	C67078-A1450-A2	319
BSS 297	Q62702-S616	323	BUZ 172	C67078-A1451-A2	319
BSS 395	Q62702-S604	323	BUZ 173	C67078-A1452-A2	319
BSS 84	Q62702-S568	325	BUZ 20	C67078-S1302-A2	317
BSS 87	Q62702-S506	324	BUZ 205	C67078-A1401-A2	318
BSS 88	Q62702-S454	324			

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BUZ 21	C67078-S1308-A2	317	BUZ 71S2	C67078-S1316-A9	317
BUZ 210	C67078-A1102-A2	318	BUZ 72	C67078-S1313-A2	317
BUZ 215	C67078-A1400-A2	318	BUZ 72A	C67078-S1313-A3	317
BUZ 22	C67078-S1333-A2	317	BUZ 72L	C67078-S1327-A2	317
BUZ 24	C67078-S1003-A2	317	BUZ 73	C67078-S1317-A2	317
BUZ 307	C67078-A3100-A2	319	BUZ 73A	C67078-S1317-A3	317
BUZ 308	C67078-A3109-A2	319	BUZ 74	C67078-S1314-A2	318
BUZ 30A	C67078-S1303-A3	317	BUZ 74A	C67078-S1314-A3	318
BUZ 31	C67078-S1304-A2	317	BUZ 76	C67078-S1315-A2	318
BUZ 310	C67078-A3101-A2	319	BUZ 76A	C67078-S1315-A3	318
BUZ 311	C67078-A3102-A2	319	BUZ 77A	C67078-S1320-A3	318
BUZ 32	C67078-S1310-A2	317	BUZ 77B	C67078-S1320-A5	318
BUZ 323	C67078-S3127-A2	318	BUZ 78	C67078-S1318-A2	319
BUZ 325	C67078-S3118-A2	318	BUZ 80	C67078-A1309-A2	319
BUZ 326	C67078-S3112-A2	318	BUZ 80A	C67078-A1309-A3	319
BUZ 330	C67078-S3105-A2	318	BUZ 84	C67078-A1013-A2	319
BUZ 331	C67078-S3114-A2	318	BUZ 84A	C67078-A1013-A3	319
BUZ 332A	C67078-S3123-A4	318	BUZ 90	C67078-S1321-A2	318
BUZ 338	C67078-S3126-A2	318	BUZ 90A	C67078-S1321-A3	318
BUZ 341	C67078-S3128-A2	317	BUZ 91A	C67078-S1342-A2	318
BUZ 344	C67078-S3132-A2	317	BUZ 92	C67078-S1343-A2	318
BUZ 345	C67078-S3121-A2	317	BUZ 93	C67078-S1346-A2	318
BUZ 346	C67078-S3120-A2	317	BUZ 94	C67078-A1019-A2	318
BUZ 349	C67078-S3113-A2	317	BYP 101	C67047-A2072-A2	321
BUZ 350	C67078-S3117-A2	317	BYP 102	C67047-A2071-A2	321
BUZ 355	C67078-A3107-A2	319	BYP 103	C67047-A2066-A2	321
BUZ 356	C67078-A3108-A2	319	CF 739	Q62702-F1215	121
BUZ 357	C67078-S3110-A2	319	CF 750	Q62702-F1436	121
BUZ 358	C67078-S3111-A2	319	CFY 19-18	Q62703-F14	120
BUZ 36	C67078-S1018-A2	317	CFY 19-22	Q62703-F8	120
BUZ 382	C67078-A3207-A2	318	CFY 25-17	Q62703-F106	120
BUZ 384	C67078-A3209-A2	318	CFY 25-20	Q62703-F107	120
BUZ 385	C67078-A3210-A2	318	CFY 25-23	Q62703-F108	120
BUZ 40B	C67078-S1305-A2	318	CFY 30	Q62703-F97	120
BUZ 41A	C67078-A1306-A3	318	CFY 35-20	Q62702-F1393	120
BUZ 42	C67078-A1311-A2	318	CFY 65-12	Q62703-F101	120
BUZ 45	C67078-A1008-A2	318	CFY 65-14	Q62703-F102	120
BUZ 45A	C67078-A1008-A3	318	CFY 75-13	Q62702-F1376	120
BUZ 45B	C67078-A1008-A4	318	CGY 21	Q68000-A5953	121
BUZ 50A	C67078-A1307-A3	319	CGY 40	Q68000-A4444	121
BUZ 50B	C67078-A1307-A4	319	CGY 50	Q68000-A8370	121
BUZ 50C	C67078-A1307-A5	319	CNY 17 F-1 Opt. 1	Q62703-N49-X1	262
BUZ 53A	C67078-A1009-A3	319	CNY 17 F-1 Opt. 1+6	Q62703-N49-X16	262
BUZ 54	C67078-S1010-A2	319	CNY 17 F-1 Opt. 1+7	Q62703-N49-X17	263
BUZ 54A	C67078-S1010-A3	319	CNY 17 F-2 Opt. 1	Q62703-N21-X1	262
BUZ 60	C67078-S1312-A2	318	CNY 17 F-2 Opt. 1+6	Q62703-N21-X16	262
BUZ 61A	C67078-S1341-A2	318	CNY 17 F-2 Opt. 1+7	Q62703-N21-X17	263
BUZ 64	C67078-S1017-A2	318	CNY 17 F-3 Opt. 1	Q62703-N50-X1	262
BUZ 70	C67078-S1334-A2	317	CNY 17 F-3 Opt. 1+6	Q62703-N50-X16	262
BUZ 71	C67078-S1316-A2	317	CNY 17 F-3 Opt. 1+7	Q62703-N50-X17	263
BUZ 71A	C67078-S1316-A3	317			
BUZ 71L	C67078-S1326-A2	317			



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CNY 17 F-4 Opt. 1	Q62703-N54-X1	262	DL-440 M	Q68000-A5996	157
CNY 17 F-4 Opt. 1+6	Q62703-N54-X16	262	DLG 1414	Q68000-A8093	176
CNY 17-1 Opt. 1	Q62703-N86-X1	262	DLG 2416	Q68000-A8096	176
CNY 17-1 Opt. 1+6	Q62703-N86-X16	262	DLG 3416	Q68000-A8099	176
CNY 17-1 Opt. 1+7	Q62703-N86-X17	262	DLG 4137	Q68000-A4299	174
CNY 17-1 Opt. 6	Q62703-N86-X6	255	DLG 7137	Q68000-A7159	174
CNY 17-1 Opt. 7	Q62703-N86-X7	255	DLO 1414	Q68000-A8092	176
CNY 17-1	Q62703-N86	255	DLO 2416	Q68000-A8095	176
CNY 17-2 Opt. 1	Q62703-N87-X1	262	DLO 3416	Q68000-A8098	176
CNY 17-2 Opt. 1+6	Q62703-N87-X16	262	DLO 4135	Q68000-A4297	174
CNY 17-2 Opt. 1+7	Q62703-N87-X17	262	DLO 7135	Q68000-A7157	174
CNY 17-2 Opt. 6	Q62703-N87-X6	255	DLR 1414	Q68000-A8091	176
CNY 17-2 Opt. 7	Q62703-N87-X7	255	DLR 2416	Q68000-A8094	176
CNY 17-2	Q62703-N87	255	DLR 3416	Q68000-A8097	176
CNY 17-3 Opt. 1	Q62703-N88-X1	262	EMOD-C517	Q67120-C486	64
CNY 17-3 Opt. 1+6	Q62703-N88-X16	262	EPC 535	Q67120-C300	64
CNY 17-3 Opt. 1+7	Q62703-N88-X17	262	FP 312L100	Q65312-L100-U	296
CNY 17-3 Opt. 6	Q62703-N88-X6	255	FP 410 L (4 x 80) FM	Q65110-L80F	296
CNY 17-3 Opt. 7	Q62703-N88-X7	255	FP 412 D250	Q65412-D250	296
CNY 17-3	Q62703-N88	255	FP 412 L100	Q65412-L100	296
CNY 17-4 Opt. 1	Q62703-N89-X1	262	FP 414 L300	Q65414-L300	296
CNY 17-4 Opt. 1+6	Q62703-N89-X16	262	FP110D 155	Q65110-D155-D	291
CNY 17-4 Opt. 1+7	Q62703-N89-X17	262	FP110L 60	Q65110-L60-D	291
CNY 17-4 Opt. 6	Q62703-N89-X6	255	FP111L 100	Q65110-L100-D	291
CNY 17-4 Opt. 7	Q62703-N89-X7	255	FP201L100	Q65210-L101	291
CNY 17-4	Q62703-N89	255	FP210D250-2	Q65210-D250-W1	291
CNY 17F-1 Opt. 6	Q62703-N49-X6	255	FP210D250-22	Q65210-D250-W5	291
CNY 17F-1 Opt. 7	Q62703-N49-X7	256	FP210L100-2	Q65210-L100-W2	291
CNY 17F-1	Q62703-N49	255	FP210L100-22	Q65210-L100-W4	291
CNY 17F-2 Opt. 6	Q62703-N21-X6	255	FP211D155-2	Q65211-D155-2	291
CNY 17F-2 Opt. 7	Q62703-N21-X7	256	FP212D250-22	Q65212-D2504	291
CNY 17F-2	Q62703-N21	255	FP212L100-22	Q65212-L1004	291
CNY 17F-3 Opt. 6	Q62703-N50-X6	255	FP213D105	Q65213-D105	291
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CPT 20050	C67076-Z1708-A1	348	FST 1090	C67047-Z1019-A1	345
CPT 30050	C67047-Z1706-A1	348	FST 16050	C67047-Z1702-A1	348
CPT 50050	C67076-Z1707-A1	348	FST 19050	C67047-Z1703-A1	348
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DL 1416 B	Q68000-A4354	168	FST 2090	C67047-Z1021-A1	348
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DL 1814	Q68000-A7156	168	FST 3045	C67047-Z1022-A1	348
DL 2416 T	Q68000-A5577	168	FST 3060	C67047-Z1023-A1	348
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FZH 205	Q67000-H637	30	HDSP 2001 LP	Q68000-A8304	193
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FZH 235	Q67000-H643	30	HDSP 2003 LP	Q68000-A8133	193
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FZH 255 B	Q67000-H818	30	HDSP 2111 S	Q68000-A8561	186
FZH 265 B	Q67000-H820	30	HDSP 2112 S	Q68000-A8562	186
FZH 275	Q67000-H822	31	HDSP 2113 S	Q68000-A8563	186
FZH 285 B	Q67000-H824	31	HDSP 2114 S	Q68000-A8564	186
FZH 295 B	Q67000-H826	31	HDSP 2300 LP	Q68000-A8402	193
FZH 305	Q67000-H1587	31	HDSP 2301 LP	Q68000-A8403	193
FZJ 105	Q67000-J124	31	HDSP 2302 LP	Q68000-A8404	193
FZJ 115	Q67000-J125	31	HDSP 2303 LP	Q68000-A8405	193
FZJ 125	Q67000-J386	32	HDSP 3901	Q68000-A8517	154
FZJ 135	Q67000-J389	32	HDSP 7301	Q68000-A8510	151
FZJ 145 A	Q67000-J647	32	HDSP 7501	Q68000-A8511	151
FZJ 155 A	Q67000-J685	32	HDSP 7511	Q68000-A8513	151
FZJ 165	Q67000-J562	32	HDSP 7801	Q68000-A8512	151
FZK 105	Q67000-K7	33	HDSP A101	Q68000-A8514	151
FZL 105	Q67000-L69	33	HDSP N101	Q68000-A8515	154
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FZL 145 S	Q67000-L176	33	HLMP 2350	Q68000-A4312	163
FZL 4145 D	Q67000-H8437	48	HLMP 2400	Q68000-A7785	163
FZL 4146 G	Q67000-H8743	48	HLMP 2450	Q68000-A4507	163
GBG 1000	Q68000-A5970	157	HLMP 2500	Q68000-A7779	163
GBG 4850	Q68000-A4404	157	HLMP 2550	Q68000-A2436	163
HD 1075 G	Q68000-A6346	151	HLMP 2600	Q68000-A1627	163
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HD 1077 R	Q68000-A5759	151	HLMP 2720	Q68000-A4508	163
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HD 1107 O	Q68000-A5772	151	HLMP 2855	Q68000-A7780	163
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HYB 514256BJ-60	Q67100-Q533	59	ILQ 2	Q68000-A4358	276
HYB 514256BJ-70	Q67100-Q436	59	ILQ 30	Q68000-A4379	276
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HYM 91000L-70	Q67100-Q497	60	ISD 2012	Q68000-A8136	194
HYM 91000S-60	Q67100-Q470	60	ISD 2013	Q68000-A8137	194
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IL 410	Q68000-A8476	274	KPY 33R	Q62705-K151	309
IL 420	Q68000-A8477	274	KPY 41R	Q62705-K159	309
IL 5	Q68000-A5931	267	KPY 42A	Q62705-K204	309
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ILCT 6	Q62703-N48	276	KPY 43A	Q62705-K162	309
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KPY 52A	Q62705-K211	312	LD 260	Q62703-Q78	209
KPY 52R	Q62705-K175	312	LD 261	Q62703-Q395	200
KPY 53A	Q62705-K177	312	LD 261-4	Q62703-Q66	200
KPY 53R	Q62705-K176	312	LD 261-5	Q62703-Q67	200
KPY 54A	Q62705-K179	312	LD 261-6	Q62703-Q236	200
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KSY 10	Q62705-K38	304	LD 271-H	Q62703-Q256	200
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KSY 14	Q62705-K227	304	LD 271-LH	Q62703-Q838	200
KTY 10	Q62705-K107	306	LD 273	Q62703-Q694	200
KTY 10-5	Q62705-K110	306	LD 274	Q62703-Q1031	200
KTY 10-6	Q62705-K132	306	LD 274-1	Q62703-Q1818	200
KTY 10-7	Q62705-K111	306	LD 274-2	Q62703-Q1819	200
KTY 11	Q62705-K244	306	LD 274-3	Q62703-Q1820	200
KTY 11-5	Q62705-K245	306	LD 275	Q62703-Q728	200
KTY 11-6	Q62705-K246	306	LD 275-1	Q62703-Q1919	200
KTY 11-7	Q62705-K247	306	LD 275-2	Q62703-Q1918	200
KTY 13	Q62705-K248	306	LD 275-3	Q62703-Q1917	200
KTY 13-5	Q62705-K249	306	LG 3330-KN	Q62703-Q1698	129
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KTY 16-6	Q62705-K128	306	LG 3341-JM	Q62703-Q2153	129
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LG B480-G	Q62703-Q1870	139	LR 5460-FJ	Q62703-Q1395	135
LG B480-GK	Q62703-Q2026	139	LR 5480-CF	Q62703-Q1986	137
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LG T670-JL	Q62703-Q2505	143	LR Z184-CO	Q62703-Q1498	146
LG T670-K	Q62703-Q2378	143	LR Z185-CO	Q62703-Q1499	146
LG T672-MO	Q62703-Q2333	144	LS 3340-JM	Q62703-Q1701	129
LG T679-CO	Q62703-Q2385	144	LS 3340-LP	Q62703-Q1703	129
LG U260-EO	Q62703-Q1494	141	LS 3340-M	Q62703-Q1704	129
LG Z181-CO	Q62703-Q1506	146	LS 3341-KN	Q62703-Q2145	129
LG Z182-CO	Q62703-Q1507	146	LS 3341-MQ	Q62703-Q2148	129
LG Z183-CO	Q62703-Q1508	146	LS 3360-HL	Q62703-Q1320	129
LG Z184-CO	Q62703-Q1509	146	LS 3360-K	Q62703-Q1321	129
LG Z185-CO	Q62703-Q1510	146	LS 3360-KN	Q62703-Q1323	129
LH 3343-PO	Q62703-Q2230	137	LS 3369-EH	Q62703-Q1748	141
LH 3344-QO	Q62703-Q2231	137	LS 3380-GK	Q62703-Q1348	130
LH 3363-KO	Q62703-Q2232	137	LS 3380-J	Q62703-Q1349	130
LH 3364-LO	Q62703-Q2233	137	LS 3380-JM	Q62703-Q1351	130
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LH 5463-KO	Q62703-Q2243	137	LS 5360-KN	Q62703-Q1383	134
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LO T670-HK	Q62703-Q2310	143	LS 5421-Q	Q62703-Q1442	135
LO T670-J	Q62703-Q2475	143	LS 5421-QT	Q62703-Q1995	135
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LO T672-MO	Q62703-Q2330	144	LS 5460-KN	Q62703-Q1399	135
LP K382-PO	Q62703-Q2123	131	LS 5469-EH	Q62703-Q1751	141
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LS B480-GK	Q62703-Q1469	139	LY 5469-EH	Q62703-Q1752	141
LS B480-H	Q62703-Q1468	139	LY 5480-GK	Q62703-Q1416	139
LS K380-LP	Q62703-Q1768	131	LY 5480-JM	Q62703-Q1419	139
LS K380-P	Q62703-Q1003	131	LY 5480-K	Q62703-Q1418	139
LS K382-RO	Q62703-Q1956	131	LY B480-EH	Q62703-Q1470	139
LS K389-FO	Q62703-Q1771	131	LY B480-GK	Q62703-Q2007	139
LS S260-DO	Q62703-Q1640	143	LY B480-H	Q62703-Q2006	139
LS T670-HK	Q62703-Q2309	143	LY K380-LP	Q62703-Q1769	131
LS T670-J	Q62703-Q2357	143	LY K380-N	Q62703-Q0575	131
LS T670-JL	Q62703-Q2502	143	LY K382-RO	Q62703-Q1958	131
LS T670-K	Q62703-Q2358	143	LY K389-FO	Q62703-Q1772	131
LS T672-MO	Q62703-Q2331	144	LY S260-DO	Q62703-Q1657	143
LS T679-CO	Q62703-Q2383	144	LY T670-HK	Q62703-Q2311	143
LS U260-EO	Q62703-Q1492	141	LY T670-J	Q62703-Q2376	143
LSG K370-LO	Q62703-Q2298	132	LY T670-JL	Q62703-Q2504	143
LSG K372-RO	Q62703-Q2299	132	LY T670-K	Q62703-Q2375	143
LSP K370-KO	Q62703-Q2379	132	LY T672-MO	Q62703-Q2332	144
LSP K372-PO	Q62703-Q2380	132	LY T679-CO	Q62703-Q2384	144
LSP T670-GO	Q62703-Q2456	143	LY U260-EO	Q62703-Q1493	141
LU 5351-JM	Q62703-Q2047	139	LY Z181-CO	Q62703-Q1505	146
LU B371-GK	Q62703-Q2049	139	MS 1045	C67047-Z1012-A1	345
LU S250-DO	Q62703-Q1642	143	MS 106	C67047-Z1001-A1	345
LV S260-DO	Q62703-Q2067	143	MS 1060	C67047-Z1013-A1	345
LW S260-DO	Q62703-Q1038	143	MS 109	C67047-Z1002-A1	345
LY 3340-HL	Q62703-Q1789	129	MS 1090	C67047-Z1014-A1	345
LY 3340-KN	Q62703-Q1792	129	MS 1635	C67047-Z1015-A1	345
LY 3340-L	Q62703-Q1791	129	MS 1645	C67047-Z1016-A1	345
LY 3341-JM	Q62703-Q2149	129	MS 1690	C67047-Z1017-A1	345
LY 3341-LP	Q62703-Q2152	129	MS 306	C67047-Z1004-A1	345
LY 3360-HL	Q62703-Q1324	129	MS 309	C67047-Z1005-A1	345
LY 3360-JM	Q62703-Q1998	129	MS 345	C67047-Z1003-A1	345
LY 3360-K	Q62703-Q1325	129	MS 506	C67047-Z1007-A1	345
LY 3369-EH	Q62703-Q1749	141	MS 509	C67047-Z1008-A1	345
LY 3380-FJ	Q62703-Q1352	130	MS 545	C67047-Z1006-A1	345
LY 3380-HL	Q62703-Q1355	130	MS 809	C67047-Z1011-A2	345
LY 3380-J	Q62703-Q1354	130	MS 845	C67047-Z1010-A1	345
LY 5360-GK	Q62703-Q2000	134	MSP 145	C67047-1000-A1	345
LY 5360-HL	Q62703-Q1387	134	MSP 345	C67047-Z1034-A1	345
LY 5360-K	Q62703-Q2001	134	MSP 545	C67047-Z1035-A1	345
LY 5380-EH	Q62703-Q2002	134	MSP 835	C67047-Z1009-A1	345
LY 5380-GK	Q62703-Q2003	134	MSP 845	C67047-Z1036-A1	345
LY 5380-H	Q62703-Q1457	134	OBG 1000	Q68000-A5968	157
LY 5420-LP	Q62703-Q1432	133	OBG 4830	Q68000-A4408	157
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LY 5420-P	Q62703-Q1434	133	PD 2436	Q68000-A8366	180
LY 5421-MQ	Q62703-Q1444	135	PD 2437	Q68000-A3562	180
LY 5421-PS	Q62703-Q1447	135	PD 3535	Q68000-A7964	180
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PD 4437	Q68000-A8369	180	PSB 8510-1	Q67100-H6109	56
PDSP 2110	Q68000-A8474	184	PSB 8510-6	Q67100-H6223	56
PDSP 2111	Q68000-A8503	184	PSB 8510-6T	Q67100-H6225	56
PDSP 2112	Q68000-A8504	184	RBG 1000	Q68000-A5967	157
PDSP 2113	Q68000-A8505	184	RBG 4820	Q68000-A4408	157
PDSP 2114	Q68000-A8533	184	RHY 10	Q61708-Y10	302
PEB 2045-N-V1.3	Q67100-H8602	55	RHY 11	Q61708-Y11	302
PEB 2045-P-V1.3	Q67100-H8322	55	S360 B 110	Q67000-H7508	70
PEB 2046-N-V1.3	Q67100-H6104	55	S360 B 114	Q67000-Y555-V702	70
PEB 2046-P-V1.3	Q67100-H6105	55	SAB 0600	Q67000-H1948	51
PEB 2047-N-V2.1	Q67100-H6238	55	SAB 0601	Q67000-H2312	51
PEB 2050-N-VB1	Q67100-H8392	55	SAB 0602	Q67000-H2313	51
PEB 2050-P-VB1	Q67100-H3032	55	SAB 2793B-P	Q67120-Y82	67
PEB 2055-N	Q67100-H6035	55	SAB 2797B-P	Q67120-Y84	67
PEB 2055-N-VA3	Q67100-H6035	54	SAB 7201A-P	Q67120-P143	67
PEB 2055-P-VA3	Q67100-H6036	54	SAB 80186-1-N	Q67120-C306	65
PEB 2060-N-V4.4	Q67100-H8393	55	SAB 80186-N	Q67120-C250	65
PEB 2060-P-V4.4	Q67100-Z170	55	SAB 80188-1-N	Q67120-C299	65
PEB 2070-N-V2.4	Q67100-H6099	54	SAB 80188-N	Q67120-C252	65
PEB 2070-P-V2.4	Q67100-H6100	54	SAB 80286-12-N	Q67120-C381	65
PEB 2075-N-V1.3	Q67100-H6189	54	SAB 80286-1-N	Q67120-C269	65
PEB 2080-N-VB1	Q67100-H8395	54	SAB 8031 A-N	Q67120-C271	63
PEB 2085-N-V2.3	Q67100-H8601	54	SAB 8031A-12-P-T40/85	Q67120-C230	64
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PEB 2110-P-V2.2	Q67100-H6294	54	SAB 8031A-20-P	Q67120-C466	63
PEB 2235-N-V4.1	Q67100-H6208	55	SAB 8031A-P	Q67120-C183	63
PEB 2235-P-V4.1	Q67100-H6207	55	SAB 8032B-16-N	Q67120-C425	63
PEB 2245-N-V2.1	Q67100-H6238	55	SAB 8032B-16-P	Q67120-C421	63
PEB 2260-N-V2.0	Q67100-H6191	55	SAB 8032B-20-P	Q67120-C471	63
PMB 2200 T	Q67000-A6025-C701	53	SAB 8032B-N	Q67120-C423	63
PMB 2400 T	Q67000-A6024 X201A1	53	SAB 8032B-P	Q67120-C419	63
PSB 2120-P-VB4	Q67100-H8645	54	SAB 8032B-P-T40/85	Q67120-C427	64
PSB 2121-P-VA4	Q67100-H8646	54	SAB 80535-N	Q67120-C241	63
PSB 2121-T-VA4	Q67100-H6032	54	SAB 80535-N-T40/85	Q67120-C240	64
PSB 2160-N-V2.2	Q67100-H6031	54	SAB 8085AH.2-P	Q67120-C124	65
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PSB 4500-T	Q67000-A8147	56	SAB 8086-2-P	Q67120-C142	65
PSB 4501	Q67000-A8148	56	SAB 8088-1-P	Q67120-C249	65
PSB 4501-T	Q67000-A8149	56	SAB 8088-2-P	Q67120-C213	65
PSB 45030	Q67000-A6020	56	SAB 80C166-S	Q67120-C493	64
PSB 45030-T	Q67000-A6015	56	SAB 80C166-S16	Q67120-C777	64
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SAB 80C515A-N-18	Q67120-C581	63	SAB 82C258A-1-N	Q67120-P312	67
SAB 80C515A-N18-T3	Q67120-C784	64	SAB 82C258A-20-N	Q67120-P323	67
SAB 80C517A-N-18	Q67120-C583	63	SAB-R 3000A-25-AE	Q67120-C590	65
SAB 80C517A-N18-T	Q67120-C769	64	SAB-R 3000A-33-AE	Q67120-C498	65
SAB 80C535-16-N	Q67120-C509	63	SAB-R 3010A-25-A	Q67120-C593	65
SAB 80C535-16-N-T40/85	Q67120-C562	64	SAB-R 3010A-33-A	Q67120-C499	65
SAB 80C535-N	Q67120-C508	63	SAE 0530	Q67000-H8403	51
SAB 80C535-N-T40/85	Q67120-C510	64	SAE 0531	Q67000-H8431	51
SAB 80C537-16-N	Q67120-C722	63	SAE 0532 G	Q67000-H8432	51
SAB 80C537-16-N	Q67120-C772	63	SAE 0700	Q67000-A2445	51
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SAB 80C537-N	Q67120-C452	63	SAE 81C52 P	Q67100-H8003	44
SAB 80C537-N-T40/85	Q67120-C484	64	SAE 81C54 P	Q67100-H8486	44
SAB 8155-2-P	Q67120-Q86	67	SAE 81C80 A	Q67100-H8706	44
SAB 8155-P	Q67120-Q42	67	SBR 3050	C67047-Z1027-A1	345
SAB 82257-N	Q67120-P176	67	SBR 8050	C67047-Z1028-A1	345
SAB 82258A-1-A	Q67120-P247	67	SBV 525	Q64099-V525	302
SAB 82258A-1-N	Q67120-P245	67	SBV 603	Q64099-V615	302
SAB 82258A-1-R	Q67120-P249	67	SBV 604	Q64099-V616	302
SAB 82258A-A	Q67120-P248	67	SBV 613	Q64099-V617	302
SAB 82258A-N	Q67120-P246	67	SBV 620	Q64099-V620	302
SAB 82258A-R	Q67120-P250	67	SCD 55100	Q68000-A8635	190
SAB 82284-1-P	Q67020-Y167	66	SCD 55101	Q68000-A8636	190
SAB 82284-P	Q67020-Y162	66	SCD 55102	Q68000-A8637	190
SAB 82288-1-P	Q67120-Y69	66	SCD 55103	Q68000-A8638	190
SAB 82288-P	Q67120-Y75	66	SCD 55104	Q68000-A8639	190
SAB 82289-P	Q67120-Y77	66	SCD 5580	Q68000-A8630	190
SAB 8237A-5-P	Q67120-Y72	67	SCD 5581	Q68000-A8631	190
SAB 82511-1-NE	Q67020-P58	68	SCD 5582	Q68000-A8632	190
SAB 82511-5-NE	Q67020-P57	68	SCD 5583	Q68000-A8633	190
SAB 82520-N	Q67100-H8400	55	SCD 5584	Q68000-A8634	190
SAB 82520-P	Q67100-H8014	55	SDA 0808 B	Q67000-A8129	50
SAB 82525-N	Q67100-H8590	55	SDA 0810 B	Q67000-A8144	50
SAB 82526-N	Q67100-H6111	55	SDA 0812 A	Q67000-A8233	50
SAB 82532-N	Q67100-H6128	55	SDA 1810 D	Q67000-H8730	50
SAB 82556-N	Q67120-P287	68	SDA 1812 D	Q67000-A8291	50
SAB 8256A-2-P	Q67120-Y59	67	SDA 2506-3	Q67100-H5059	40
SAB 8256A-P	Q67120-Y43	67	SDA 2516-2	Q67100-H5002	40
SAB 8259A-2-P	Q67120-P81	68	SDA 2526-2	Q67100-5001	40
SAB 8259A-P	Q67120-P46	68	SDA 2546	Q67100-H8616	40
SAB 8282A-P	Q67020-Y149	66	SDA 2586	Q67100-H8617	40
SAB 8283A-P	Q67020-Y150	66	SDA 3302	Q67000-H5005	40
SAB 8284B-1-P	Q67020-Y152	66	SDA 5200 N	Q67000-A2242	50
SAB 8284B-P	Q67020-Y151	66	SDA 5200 S	Q67000-A2243	50
SAB 8286A-P	Q67020-Y153	66	SDA 5231-2	Q67000-A5006	41
SAB 8287A-P	Q67020-Y154	66	SDA 5243-2	Q67100-H5031	41
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SFH 202 A	Q62702-P71	280	SFH 309-3	Q62702-P997	239
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SFH 2030	Q62702-P955	227	SFH 309-6	Q62702-P1000	239
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SFH 204	Q62702-P89	220	SFH 317 F	Q62702-P960	239
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SFH 217 F	Q62702-P947	227	SFH 320 F-2	Q62702-P392	239
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SFH 235	Q62702-P273	227	SFH 402	Q62702-P98	200
SFH 244 S	Q62702-P212	220	SFH 402-2	Q62702-P789	200
SFH 250 V	Q62702-P263	283	SFH 402-3	Q62702-P790	200
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SFH 263	Q62702-P1081	227	SFH 405-2	Q62702-P856	200
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SFH 416-S	Q62702-P1140	205	SFH 601-1 Opt. 7	Q68000-A7318-X7	256
SFH 420-N	Q62702-P1132	205	SFH 601-1	Q68000-A7318	256
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SFH 421-N	Q62703-Q2406	205	SFH 601-2 Opt. 1+6	Q68000-A7319-X16	262
SFH 421-P	Q62703-Q2407	205	SFH 601-2 Opt. 1+7	Q68000-A7319-X16	262
SFH 450 V	Q62702-P265	283	SFH 601-2 Opt. 6	Q68000-A7319-X6	256
SFH 450	Q62702-P1034	280	SFH 601-2 Opt. 7	Q68000-A7319-X7	256
SFH 452 V	Q62702-P281	283	SFH 601-2	Q68000-A7319	256
SFH 452	Q62702-P280	280	SFH 601-3 Opt. 1	Q68000-A7320-X1	262
SFH 462-K E7800	Q62702-P332	209	SFH 601-3 Opt. 1+6	Q68000-A7320-X16	262
SFH 462-L E7800	Q62702-P1116	209	SFH 601-3 Opt. 1+7	Q68000-A7320-X17	262
SFH 480	Q62703-Q1087	212	SFH 601-3 Opt. 7	Q68000-A7320-X7	256
SFH 480-1	Q62703-Q1661	212	SFH 601-3	Q68000-A7320	256
SFH 480-2	Q62703-Q1662	212	SFH 601-3	Q68000-A7320-X6	256
SFH 481	Q62703-Q1088	212	SFH 601-4 Opt. 1	Q68000-A7321-X1	262
SFH 481-1	Q62703-Q1664	212	SFH 601-4 Opt. 1+6	Q68000-A7321-X16	262
SFH 481-2	Q62703-Q1665	212	SFH 601-4 Opt. 1+7	Q68000-A7321-X17	262
SFH 481-3	Q62703-Q1666	212	SFH 601-4 Opt. 6	Q68000-A7321-X6	256
SFH 482	Q62703-Q1089	212	SFH 601-4 Opt. 7	Q68000-A7321-X7	256
SFH 482-1	Q62703-Q1667	212	SFH 601-4	Q68000-A7321	256
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SFH 484-1	Q62703-Q1755	212	SFH 6106-2T	-Q68000-A7776-T	272
SFH 484-2	Q62703-Q1756	212	SFH 6106-3T	Q68000-A7777-T	272
SFH 485	Q62703-Q1093	212	SFH 6106-4T	Q68000-A7778-T	272
SFH 485 P	Q62703-Q516	212	SFH 611-1	Q62703-N82	258
SFH 485 P-1	Q62703-Q1758	212	SFH 611-2	Q62703-N83	258
SFH 485 P-2	Q62703-Q754	212	SFH 611-3	Q62703-N84	258
SFH 485-1	Q62703-Q1546	212	SFH 6116-1T	Q68000-A8622-T	272
SFH 485-2	Q62703-Q1547	212	SFH 6116-2T	Q68000-A8623-T	272
SFH 487	Q62703-Q1095	212	SFH 6116-3T	Q68000-A8624-T	272
SFH 487 P	Q62703-Q517	212	SFH 6116-4T	Q68000-A8625-T	272
SFH 487 P-1	Q62703-Q1762	212	SFH 6135 Opt. 1	Q62703-N135-X1	263
SFH 487 P-2	Q62703-Q1763	212	SFH 6135 Opt. 1+6	Q62703-N135-X16	263
SFH 487-1	Q62703-Q2173	212	SFH 6135 Opt. 1+7	Q62703-N135-X17	263
SFH 487-2	Q62703-Q2174	212	SFH 6135	Q62703-N135	274
SFH 501	Q62702-P110	242	SFH 6136 Opt. 1	Q62703-N133-X1	263
SFH 505 A	Q62702-P373	242	SFH 6136 Opt. 1+6	Q62703-N133-X16	263
SFH 551 V	Q62702-P287	285	SFH 6136 Opt. 1+7	Q62703-N133-X17	263
SFH 551	Q62702-P1161	285	SFH 6136	Q62703-N133	274
SFH 600-0	Q68000-A7313	256	SFH 615-1	Q62703-N109	258
SFH 600-1	Q68000-A7314	256	SFH 615-2	Q62703-N110	258
SFH 600-2	Q68000-A7315	256	SFH 615-3	Q62703-N111	258
SFH 601-1 Opt. 1	Q68000-A7318-X1	262	SFH 6156-1T	Q68000-A8626-T	272
SFH 601-1 Opt. 1+6	Q68000-A7318-X16	262	SFH 6156-2T	Q68000-A8627-T	272

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Typ Type	Bestellnummer Ordering Code	Seite Page	Typ Type	Bestellnummer Ordering Code	Seite Page
SFH 6156-3T	Q68000-A8628-T	272	TAA 2765 A	Q67000-A1031	46
SFH 6156-4T	Q68000-A8629-T	272	TAA 762 A	Q67000-A2271	45
SFH 617G-1 Opt. 1	Q62703-N127-X1	263	TAA 765 A	Q67000-A524	45
SFH 617G-1	Q62703-N127	258	TAA 765 G	Q67000-A599	45
SFH 617G-2 Opt. 1	Q62703-N128-X1	263	TAE 1453 A	Q67000-A2017	45
SFH 617G-2	Q62703-N128	258	TAE 1453 G	Q67000-A2106	45
SFH 617G-3 Opt. 1	Q62703-N129-X1	263	TAE 2453 A	Q67000-A2107	46
SFH 617G-3	Q62703-N129	258	TAE 2453 G	Q67000-A2108	46
SFH 618-1	Q62703-N121	258	TAE 4453 A	Q67000-A2109	47
SFH 618-2	Q62703-N124	258	TAE 4453 G	Q67000-A2152	47
SFH 618-3	Q62703-N125	258	TAF 1453 A	Q67000-A2269	45
SFH 620-1	Q62703-N115	258	TAF 2453 A	Q67000-A2210	46
SFH 620-2	Q62703-N116	258	TAF 4453 A	Q67000-A2212	47
SFH 620-3	Q62703-N117	258	Encoder Wheel	Q62902-B166	252
SFH 628-2	Q68000-A8654	258	TBA 120 T	Q67000-A919	40
SFH 628-3	Q68000-A8655	258	TBA 229-2	Q67000-A8037	40
SFH 750 V	Q62702-P266	283	TBB 200 G	Q67100-H8216	53
SFH 750	Q62702-P1031	280	TBB 200	Q67100-H8215	53
SFH 751	Q62702-P1032	280	TBB 202 G	Q67000-H8218	53
SFH 752 V	Q62702-P284	283	TBB 202	Q67000-H8217	53
SFH 752	Q62702-P210	280	TBB 204 G	Q67000-A8213	53
SFH 900	Q62702-P1187	252	TBB 206 G	Q67000-H6723	53
SFH 900-1	Q62702-P935	252	TBB 206	Q67000-H8722	53
SFH 900-2	Q62702-P141	252	TBB 212 AG	Q67000-A8761	53
SFH 900-3	Q62702-P1088	252	TBB 212 A	Q67000-A8760	53
SFH 900-4	Q62702-P1087	252	TBB 278 B	Q67100-H8759	51
SFH 905	Q62702-P1188	252	TBC 2332 B	Q67000-A2500	46
SFH 905-1	Q62702-P1117	252	TBE 2335 B	Q67000-A1165	46
SFH 905-2	Q62702-P1118	252	TBE 4335 A	Q67000-A1167	47
SFH 910	Q62702-P866	252	TCA 105 G	Q67000-A988	48
SH 133 C0 116	Q67000-H2878	70	TCA 105	Q67000-A527	48
SH 133 C0 116-SO	Q67000-H3070	70	TCA 105 B	Q67000-A587	48
SH 133 C01	Q67000-H7036	70	TCA 1365 B	Q67000-A8190	48
SL 5500	Q68000-A5141	267	TCA 1560 B	Q67000-A8208	51
SL 5501	Q68000-A6398	267	TCA 1561 B	Q67000-A8209	51
SLB 0586 A	Q67100-H8721	52	TCA 205 A	Q67000-A1034	52
SLB 0587	Q67100-A8310	52	TCA 2365	Q67000-A1876	48
SLB 05876	Q67100-A8315	52	TCA 2465 A	Q67000-A8110	48
SLB 0586 G	Q67100-H8720	52	TCA 2465	Q67000-A8109	48
SLE 4520	Q67100-H8271	51	TCA 305 A	Q67000-A2291	52
SLG 2016	Q68000-A8642	188	TCA 305 G	Q67000-A2305	52
SLR 2016	Q68000-A8640	188	TCA 312 A	Q67000-A2048	45
SLO 2016	Q68000-A8641	188	TCA 315 A	Q67000-A561	45
SLY 2016	Q68000-A8643	188	TCA 315 G	Q67000-A1005	45
SN 7000	Q67000-S062	323	TCA 322 A	Q67000-A2501	48
SN 7002	Q67000-S063	323	TCA 325 A	Q67000-A562	48
SP 06 10L	Q67000-S065	325	TCA 325 G	Q67000-A1012	48
SP 06 10T	Q67000-S208	325	TCA 332 A	Q67000-A2272	45
Connector Set	Q62901-B80	306	TCA 335 A	Q67000-A563	45
TAA 2762 A	Q67000-A2499	46	TCA 335 G	Q67000-A1018	45
			TCA 345 A	Q67000-A564	48

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Typ Type	Bestellnummer Ordering Code	Seite Page	Typ Type	Bestellnummer Ordering Code	Seite Page
TCA 355 B	Q67000-A2443	52	TLE 4205	Q67000-A9025	43
TCA 355 G	Q67000-A2444	52	TLE 4211	Q67000-A8118	43
TCA 365 B	Q67000-A8189	48	TLE 4214	Q67000-A8183	43
TCA 3727 G	Q67000-A8335	51	TLE 4215	Q67000-A8184	43
TCA 3727	Q67000-A8302	51	TLE 4216	Q67000-8237	43
TCA 505 B	Q67000-A8344	52	TLE 4220	Q67000-A9010	43
TCA 505 BG	Q67000-A8341	52	TLE 4258	Q67000-A8238	44
TCA 605 G	Q67000-A8292	52	TLE 4260 S	Q67000-A9044	44
TCA 671 G	Q67000-A2366	49	TLE 4260	Q67000-A8187	44
TCA 671	Q67000-T1	49	TLE 4261 G	Q67000-A9059	44
TCA 785	Q67000-A2321	50	TLE 4261	Q67000-A9003	44
TCA 871 G	Q67000-A2367	49	TLE 4262 G	Q67000-A9068	44
TCA 871	Q67000-T2	49	TLE 4263 G	Q67000-A9095	44
TCA 955	Q67000-A983	51	TLE 4901 F	Q67000-A2518	43
TCA 965	Q67000-A982	48	TLE 4902 F	Q67000-A8048	43
TCA 971 G	Q67000-A8075	49	TLE 4903 F	Q67000-A8047	43
TCA 971	Q67000-T11	49	TLE 4910 G	Q67000-A9009	43
TCA 991 G	Q67000-A8076	49	TLE 4920 G	Q67000-A9000	43
TCA 991	Q67000-T12	49	TP 60 P	Q62607-S60	217
TDA 4210-3	Q67000-A8008	42	TP 61 P	Q62607-S61	217
TDA 4601	Q67000-A2379	41	Watertight Plug	Q62902-B146	296
TDA 4605-2	Q67000-A5020	41	YBG 1000	Q68000-A5969	157
TDA 4700 A	Q67000-Y594	49	YBG 4840	Q68000-A4409	157
TDA 4714 C	Q67000-A8312	49			
TDA 4716 C	Q67000-A8313	49			
TDA 4718 A	Q67000-Y639	49			
TDA 4718	Q67000-Y638	49			
TDA 4814 A	Q67000-A8163	49			
TDA 4816 G	Q67000-A8290	49			
TDA 4817 G	Q67000-8299	49			
TDA 4817	Q67000-8298	49			
TDA 4918 A	Q67000-A8021	49			
TDA 4918 G	Q67000-A8142	49			
TDA 4919 A	Q67000-A8143	49			
TDA 4919 G	Q67000-A8018	49			
TDA 4935	Q67000-A2538	41			
TDA 5930	Q67000-A8169	40			
TDA 6200	Q67000-A2461	41			
TDA 6600-2	Q67000-A8210	41			
TDA 6610-2	Q67000-A5026	41			
TDA 6611	Q67000-A8260	41			
TLE 3101	Q67000-A2337	50			
TLE 3102	Q67000-A2338	50			
TLE 3103	Q67000-A2339	50			
TLE 3104	Q67000-A2312	50			
TLE 4201 A1	Q67000-A8080	43			
TLE 4201 S1	Q67000-A2285	43			
TLE 4202	Q67000-A8007	43			
TLE 4202 B	Q67000-A8225	43			
TLE 4203	Q67000-A8121	43			
TLE 4203 S	Q67000-A9101	43			

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C67047-A2066-A2	BYP 103	321	C67076-A2007-A2	BSM 300GA 120 D	340
C67047-A2071-A2	BYP 102	321	C67076-A2100-A2	BSM 50GB 100 D	336
C67047-A2072-A2	BYP 101	321	C67076-A2101-A2	BSM 25GB 100 D	336
C67047-Z1000-A1	MS 145	345	C67076-A2102-A2	BSM 150GB 100 D	336
C67047-Z1001-A1	MS 106	345	C67076-A2103-A2	BSM 100GB 100 D	336
C67047-Z1002-A1	MS 109	345	C67076-A2104-A2	BSM 75GB 100 D	336
C67047-Z1003-A1	MS 345	345	C67076-A2105-A2	BSM 50GB 120 D	340
C67047-Z1004-A1	MS 306	345	C67076-A2106-A2	BSM 75GB 120 D	340
C67047-Z1005-A1	MS 309	345	C67076-A2107-A2	BSM 100GB 120 D	340
C67047-Z1006-A1	MS 545	345	C67076-A2108-A2	BSM 150GB 120 D	340
C67047-Z1007-A1	MS 506	345	C67076-A2109-A2	BSM 25GB 120 D	340
C67047-Z1008-A1	MS 509	345	C67076-A2500-A2	BSM 15GD 100 D	336
C67047-Z1010-A1	MS 845	345	C67076-A2501-A2	BSM 25GD 100D	336
C67047-Z1011-A1	MS 809	345	C67076-A2504-A2	BSM 15GD 120 D	340
C67047-Z1012-A1	MS 1045	345	C67076-A2505-A2	BSM 25GD 120D	340
C67047-Z1013-A1	MS 1060	345	C67076-S1013-A2	BSM 111AR	335
C67047-Z1014-A1	MS 1090	345	C67076-S1014-A2	BSM 121AR	335
C67047-Z1015-A1	MS 1635	345	C67076-S1018-A2	BSM 101AR	335
C67047-Z1016-A1	MS 1645	345	C67076-S1100-A2	BSM 214A	335
C67047-Z1017-A1	MS 1690	345	C67076-S1101-A2	BSM 224A	335
C67047-Z1018-A1	FST 1045	345	C67076-S1102-A2	BSM 204A	335
C67047-Z1019-A1	FST 1090	345	C67076-Z1701-A1	FST 6050	348
C67047-Z1020-A1	FST 2045	348	C67076-Z1702-A1	FST 16050	348
C67047-Z1021-A1	FST 2090	348	C67076-Z1703-A1	FST 19050	348
C67047-Z1022-A1	FST 3045	348	C67076-Z1704-A1	FST 30050	348
C67047-Z1023-A1	FST 3060	348	C67076-Z1705-A1	CPT 12050	348
C67047-Z1024-A1	FST 3090	348	C67076-Z1706-A1	CPT 30050	348
C67047-Z1025-A1	FST 5050	348	C67076-Z1707-A1	CPT 50050	348
C67047-Z1026-A1	FST 5090	348	C67076-Z1708-A1	CPT 20050	348
C67047-Z1027-A1	SBR 3050	345	C67078-A1008-A2	BUZ 45	318
C67047-Z1028-A1	SBR 8050	345	C67078-A1008-A3	BUZ 45A	318
C67047-Z1035-A1	MSP 545	345	C67078-A1008-A4	BUZ 45B	318
C67047-Z1036-A1	MSP 845	345	C67078-A1009-A3	BUZ 53A	319
C67048-A4402-A2	BUP 203	321	C67078-A1013-A2	BUZ 84	319
C67060-A1000-A2	BUP 101	321	C67078-A1013-A3	BUZ 84A	319
C67076-A1001-A2	BSM 181	335	C67078-A1019-A2	BUZ 94	318
C67076-A1004-A2	BSM 151	335	C67078-A1102-A2	BUZ 210	318
C67076-A1009-A2	BSM 191	335	C67078-A1306-A3	BUZ 41A	318
C67076-A1010-A2	BSM 141	335	C67078-A1307-A3	BUZ 50A	319
C67076-A1016-A2	BSM 181R	335	C67078-A1307-A4	BUZ 50B	319
C67076-A1050-A2	BSM 151F	335	C67078-A1307-A5	BUZ 50C	319
C67076-A1052-A2	BSM 181F	335	C67078-A1309-A3	BUZ 80A	319
C67076-A1053-A2	BSM 191F	335	C67078-A1311-A2	BUZ 42	318
C67076-A1150-A2	BSM 254F	335	C67078-A1400-A2	BUZ 215	318
C67076-A1151-A2	BSM 294F	335	C67078-A1401-A2	BUZ 205	318
C67076-A1152-A2	BSM 284F	335	C67078-A1450-A2	BUZ 171	319
C67076-A1155-A3	BSM 244F	335	C67078-A1451-A2	BUZ 172	319
C67076-A2000-A2	BSM 300GA 100 D	336	C67078-A1452-A2	BUZ 173	319
C67076-A2001-A2	BSM 200GA 100 D	336	C67078-A3100-A2	BUZ 307	319
C67076-A2006-A2	BSM 200GA 120 D	340	C67078-A3101-A2	BUZ 310	319

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C67078-A3102-A2	BUZ 311	319	C67078-S1318-A2	BUZ 78	319
C67078-A3107-A2	BUZ 355	319	C67078-S1320-A3	BUZ 77A	318
C67078-A3108-A2	BUZ 356	319	C67078-S1320-A5	BUZ 77B	318
C67078-A3109-A2	BUZ 308	319	C67078-S1321-A2	BUZ 90	318
C67078-A3207-A2	BUZ 382	318	C67078-S1321-A3	BUZ 90A	318
C67078-A3209-A2	BUZ 384	318	C67078-S1326-A2	BUZ 71L	317
C67078-A3210-A2	BUZ 385	318	C67078-S1327-A2	BUZ 72L	317
C67078-A4200-A2	BUP 304	321	C67078-S1329-A2	BUZ 10L	317
C67078-A4201-A2	BUP 307	321	C67078-S1330-A3	BUZ 11AL	317
C67078-A4400-A2	BUP 200	321	C67078-S1331-A2	BUZ 12	317
C67078-A4401-A2	BUP 202	321	C67078-S1331-A3	BUZ 12A	317
C67078-A5000-A3	BTS 114	330	C67078-S1332-A3	BUZ 12AL	317
C67078-A5001-A3	BTS 130	330	C67078-S1333-A2	BUZ 22	317
C67078-A5002-A4	BTS 131	330	C67078-S1334-A2	BUZ 70	317
C67078-A5003-A4	BTS 132	330	C67078-S1341-A2	BUZ 61A	318
C67078-A5004-A4	BTS 115	330	C67078-S1342-A2	BUZ 91A	318
C67078-A5008-A2	BTS 110	330	C67078-S1343-A2	BUZ 92	318
C67078-A5009-A2	BTS 120	330	C67078-S1346-A2	BUZ 93	318
C67078-A5013-A2	BTS 129	330	C67078-S3105-A2	BUZ 330	318
C67078-A5300-A5	BTS 412A	333	C67078-S3110-A2	BUZ 357	319
C67078-A5307-A2	BTS 413A	333	C67078-S3111-A2	BUZ 358	319
C67078-S1001-A2	BUZ 15	317	C67078-S3112-A2	BUZ 326	318
C67078-S1003-A2	BUZ 24	317	C67078-S3113-A2	BUZ 349	317
C67078-S1010-A2	BUZ 54	319	C67078-S3114-A2	BUZ 331	318
C67078-S1010-A3	BUZ 54A	319	C67078-S3117-A2	BUZ 350	317
C67078-S1017-A2	BUZ 64	318	C67078-S3118-A2	BUZ 325	318
C67078-S1018-A2	BUZ 36	317	C67078-S3120-A2	BUZ 346	317
C67078-S1300-A2	BUZ 10	317	C67078-S3121-A2	BUZ 345	317
C67078-S1301-A2	BUZ 11	317	C67078-S3123-A4	BUZ 332A	318
C67078-S1301-A3	BUZ 11A	317	C67078-S3126-A2	BUZ 338	318
C67078-S1301-A5	BUZ 11S2	317	C67078-S3127-A2	BUZ 323	318
C67078-S1302-A2	BUZ 20	317	C67078-S3128-A2	BUZ 341	317
C67078-S1303-A3	BUZ 30A	317	C67078-S3132-A2	BUZ 344	317
C67078-S1304-A2	BUZ 31	317	C67078-S5010-A5	BTS 121A	330
C67078-S1305-A2	BUZ 40B	318	C67078-S5011-A2	BTS 140A	330
C67078-S1308-A2	BUZ 21	317	C67078-S5014-A3	BTS 112A	330
C67078-S1309-A2	BUZ 80	319	C67078-S5015-A3	BTS 113A	330
C67078-S1310-A2	BUZ 32	317	C67078-S5100-A3	BTS 240A	330
C67078-S1312-A2	BUZ 60	318	C67078-S5300-A9	BTS 412B	333
C67078-S1313-A2	BUZ 72	317	C67078-S5303-A3	BTS 432D	333
C67078-S1313-A3	BUZ 72A	317	C67078-S5303-A4	BTS 432E	333
C67078-S1314-A2	BUZ 74	318	C67078-S5303-A5	BTS 432F	333
C67078-S1314-A3	BUZ 74A	318	C67078-S5305-A3	BTS 410D	333
C67078-S1315-A2	BUZ 76	318	C67078-S5305-A4	BTS 410E	333
C67078-S1315-A3	BUZ 76A	318	C67078-S5305-A5	BTS 410F	333
C67078-S1316-A2	BUZ 71	317	C67078-S5305-A6	BTS 410G	333
C67078-S1316-A3	BUZ 71A	317	C67079-A1002-A6	BRT 13H	329
C67078-S1316-A9	BUZ 71S2	317	C67079-A1022-A6	BRT 23H	329
C67078-S1317-A2	BUZ 73	317	Q60206-X60	BFX 60	107
C67078-S1317-A3	BUZ 73A	317	Q60215-Y1113	BPY 62-4	235

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Q60215-Y111-S4	BPY 11 P IV	217	Q62702-A846	BAS 70-07	74
Q60215-Y111-S5	BPY 11 P V	217	Q62702-A858	BAR 17	103
Q60215-Y62	BPY 62	235	Q62702-A879	BAT 64	74
Q60215-Y63-S1	BPY 63 P	217	Q62702-A926	BAT 68	102
Q60215-Y65	BPY 48 P	217	Q62702-A95	BAS19	73
Q60215-Y67	BPY 64 P	217	Q62702-A961	BAT 64-04	74
Q61708-Y10	RHY 10	302	Q62702-A962	BAT 64-05	74
Q61708-Y11	RHY 11	302	Q62702-A963	BAT 64-06	74
Q620215-Y66	BPY 47 P	217	Q62702-A964	BAT 64-07	74
Q62607-S60	TP 60 P	217	Q62702-A971	BAT 62	102
Q62607-S61	TP 61 P	217	Q62702-B631	BBY 51	103
Q62702-A0004	BAT 68-04	102	Q62702-C1322	BCW 68G	83
Q62702-A0015	BAT 68-05	102	Q62702-C1474	BCV 27	90
Q62702-A0019	BAT 68-06	102	Q62702-C1476	BCW 60C	81
Q62702-A0044	BAT 68-07	102	Q62702-C1477	BCW 60D	81
Q62702-A0910	BAS 78 A	73	Q62702-C1478	BCW 61C	82
Q62702-A0911	BAS 78 B	73	Q62702-C1479	BCW 65C	81
Q62702-A0912	BAS 78 C	73	Q62702-C1480	BCW 67B	83
Q62702-A0913	BAS 78 D	73	Q62702-C1481	BCX 70H	81
Q62702-A0914	BAS 79 A	73	Q62702-C1482	BCX 71G	83
Q62702-A0915	BAS 79 B	73	Q62702-C1485	BCX 42	83
Q62702-A0916	BAS 79 C	73	Q62702-C1493	BCV 26	90
Q62702-A0917	BAS 79 D	73	Q62702-C1497	BCW 60B	81
Q62702-A113	BAS20	73	Q62702-C1501	BCV 46	90
Q62702-A118	BAS 70	74	Q62702-C1501	BCV 47	90
Q62702-A120	BAR 61	103	Q62702-C1504	BC 808-25	82
Q62702-A504	BAT 17	102	Q62702-C1505	BC 818-40	81
Q62702-A624	BAS 70-02	102	Q62702-C1506	BC 848 C	81
Q62702-A629	BAS 40-02	102	Q62702-C1507	BC 858 C	82
Q62702-A65	BAT 14-099 R	102	Q62702-C1516	BCW 65A	81
Q62702-A651	BAR 12-1	103	Q62702-C1517	BCW 60A	81
Q62702-A67	BAT 15-099 R	102	Q62702-C1526	BCW 66G	81
Q62702-A688	BAW 56	73	Q62702-C1539	BCX 70G	81
Q62702-A697	BAS 40-07	74	Q62702-C1552	BCX 70 J	81
Q62702-A704	BAR 74	73	Q62702-C1554	BCX 71J	83
Q62702-A711	BAS 70-05	74	Q62702-C1555	BCW 68H	83
Q62702-A712	BAW 101	73	Q62702-C1556	BCW 61D	82
Q62702-A718	BAL 74	73	Q62702-C1560	BCW 67A	83
Q62702-A730	BAS 70-04	74	Q62702-C1571	BCX 70K	81
Q62702-A731	BAR 15-1	103	Q62702-C1572	BCX 68	82
Q62702-A739	BAS 16	73	Q62702-C1585	BCW 61B	82
Q62702-A77	BAS 28	73	Q62702-C1586	BCX 71H	83
Q62702-A772	BAR 14-1	103	Q62702-C1612	BCW 65B	81
Q62702-A773	BAR 16-1	103	Q62702-C1614	BCX 56	82
Q62702-A774	BAS 70-06	74	Q62702-C1632	BCW 66H	81
Q62702-A775	BAT 17-04	102	Q62702-C1654	BCX 71K	83
Q62702-A776	BAT 17-05	102	Q62702-C1659	BCX 41	81
Q62702-A777	BAT 17-06	102	Q62702-C1681	BCW 67C	83
Q62702-A786	BAR 60	103	Q62702-C1687	BC 847 B	81
Q62702-A79	BAS 21	73	Q62702-C1688	BC 857 B	82

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Bestellnummer Ordering Code	Typ Type	Seite Page	Bestellnummer Ordering Code	Typ Type	Seite Page
Q62702-C1689	BC 807-25	82	Q62702-C2135	BCP 48	94
Q62702-C1690	BC 817-25	81	Q62702-C2136	BCP 29	94
Q62702-C1692	BC 808-40	82	Q62702-C2137	BCP 49	94
Q62702-C1698	BC 858 B	82	Q62702-C2146	BCP 52	86
Q62702-C1704	BC 848 B	81	Q62702-C2147	BCP 53	86
Q62702-C1714	BCX 69	83	Q62702-C2148	BCP 55	86
Q62702-C1715	BC 847 C	81	Q62702-C2149	BCP 56	86
Q62702-C1721	BC 807-40	82	Q62702-C276	BC 237 A	78
Q62702-C1729	BCX 55	82	Q62702-C277	BC 237 B	78
Q62702-C1732	BC 817-16	81	Q62702-C279	BC 238 B	78
Q62702-C1735	BC 807-16	82	Q62702-C280	BC 238 C	78
Q62702-C1736	BC 808-16	82	Q62702-C282	BC 239 C	78
Q62702-C1738	BC 817-40	81	Q62702-C283	BC 307 A	79
Q62702-C1739	BC 818-16	81	Q62702-C286	BC 308 B	79
Q62702-C1740	BC 818-25	81	Q62702-C311-V2	BC 327-40	79
Q62702-C1741	BC 848 A	81	Q62702-C311-V3	BC 327-16	79
Q62702-C1742	BC 858 A	82	Q62702-C311-V4	BC 327-25	79
Q62702-C1743	BCX 52	83	Q62702-C312-V2	BC 328-40	79
Q62702-C1745	BCX 54	82	Q62702-C312-V4	BC 328-25	79
Q62702-C1746	BC 846 B	81	Q62702-C313-V1	BC 337-25	78
Q62702-C1772	BC 846 A	81	Q62702-C313-V2	BC 337-40	78
Q62702-C1773	BC 856 A	82	Q62702-C313-V3	BC 337-16	78
Q62702-C1832	BCV 49	92	Q62702-C314-V2	BC 338-25	78
Q62702-C184	BC 257 A	79	Q62702-C314-V3	BC 338-40	78
Q62702-C1847	BCX 51	83	Q62702-C324	BC 307 B	79
Q62702-C1850	BC 857 A	82	Q62702-C376-V2	BC 414 C	78
Q62702-C1851	BC 857 C	82	Q62702-C377-V3	BC 415 C	79
Q62702-C1854	BCV 48	92	Q62702-C378-V3	BC 416 C	79
Q62702-C1884	BC 847 A	81	Q62702-C393	BC 308 C	79
Q62702-C1886	BC 856 B	82	Q62702-C452	BCW 61A	82
Q62702-C1892	BCW 66F	81	Q62702-C687-V2	BC 546 B	78
Q62702-C1893	BCW 68F	83	Q62702-C688-V2	BC 547 B	78
Q62702-C206	BC 257 B	79	Q62702-C689-V2	BC 548 B	78
Q62702-C2106	BCP 56-16	86	Q62702-C689-V3	BC 548 C	78
Q62702-C2107	BCP 51	86	Q62702-C690-V2	BC 549 C	78
Q62702-C2109	BCP 51-10	86	Q62702-C691-V2	BC 550 C	78
Q62702-C2110	BCP 51-16	86	Q62702-C692-V2	BC 556 B	79
Q62702-C2112	BCP 52-10	86	Q62702-C693-V2	BC 557 B	79
Q62702-C2113	BCP 52-16	86	Q62702-C694-V2	BC 558 B	79
Q62702-C2115	BCP 53-10	86	Q62702-C694-V3	BC 558 C	79
Q62702-C2116	BCP 53-16	86	Q62702-C695-V3	BC 559 C	79
Q62702-C2117	BCP 54	86	Q62702-C696-V2	BC 560 B	79
Q62702-C2119	BCP 54-10	86	Q62702-C696-V3	BC 560 C	79
Q62702-C2120	BCP 54-16	86	Q62702-C74	BC 167 A	78
Q62702-C2122	BCP 55-10	86	Q62702-C747	BC 368	78
Q62702-C2123	BCP 55-16	86	Q62702-C748	BC 369	79
Q62702-C2125	BCP 56-10	86	Q62702-C75	BC 167 B	78
Q62702-C2126	BCP 68	86	Q62702-C825	BC 517	88
Q62702-C2130	BCP 69	86	Q62702-C853	BC 875	88
Q62702-C2134	BCP 28	94	Q62702-C854	BC 877	88



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Bestellnummer Ordering Code	Typ Type	Seite Page	Bestellnummer Ordering Code	Typ Type	Seite Page
Q62702-C855	BC 879	88	Q62702-F1346	BFR 194	110
Q62702-C905	BCX 53	83	Q62702-F1347	BFP 194	116
Q62702-C941	BC 880	88	Q62702-F1359	BFG 19S	116
Q62702-C942	BC 878	88	Q62702-F1376	CFY 75-13	120
Q62702-C943	BC 876	88	Q62702-F1393	CFY 35-20	120
Q62702-C944	BC 516	88	Q62702-F1432	BFG 235	116
Q62702-D339	BAS 40	74	Q62702-F1436	CF 750	121
Q62702-D978	BAS 40-06	74	Q62702-F297	BFY 90	107
Q62702-D979	BAS 40-05	74	Q62702-F321	BFW 92	112
Q62702-D980	BAS 40-04	74	Q62702-F346-S1	BFR 34A	112
Q62702-F1049	BFQ 81	110	Q62702-F369-E4	BFX 59F	107
Q62702-F1050	BFR 92P	110	Q62702-F370-E2	BFX 59R	107
Q62702-F1051	BFR 93P	110	Q62702-F422-E5	BFX 59	107
Q62702-F1062	BFT 92	110	Q62702-F451	BFT 65	112
Q62702-F1063	BFT 93	110	Q62702-F454	BFS 55A	107
Q62702-F1086	BFR 93A	110	Q62702-F456	BFT 66	107
Q62702-F1088	BFQ 19S	107	Q62702-F460	BFR 15A	107
Q62702-F1104	BFQ 73S	107	Q62702-F514	BFT 97	112
Q62702-F1122	BFP 81	114	Q62702-F516	BFR 96	112
Q62702-F1144	BFP 93A	114	Q62702-F523	BFT 98	116
Q62702-F1189	BFQ 82	107	Q62702-F524	BFT 99	116
Q62702-F1215	CF 739	121	Q62702-F559	BFR 91	112
Q62702-F1238	BF 720	100	Q62702-F560	BFR 90	112
Q62702-F1239	BF 721	100	Q62702-F621	BFP 22	96
Q62702-F1246	BFN 36	100	Q62702-F622	BFP 23	96
Q62702-F1267	BFR 193	110	Q62702-F659	BFQ 29P	110
Q62702-F1282	BFP 193	114	Q62702-F735	BFR 91A	112
Q62702-F1283	BFQ 645	107	Q62702-F774	BFQ 70	107
Q62702-F1291	BFG 193	116	Q62702-F775	BFQ 71	107
Q62702-F1292	BFG 196	116	Q62702-F776	BFQ 72	107
Q62702-F1295	BFQ 181	107	Q62702-F778	BFQ 74	107
Q62702-F1296	BFR 180	110	Q62702-F780	BFQ 69	112
Q62702-F1297	BFP 180	114	Q62702-F877	BFT 98T	112
Q62702-F1298	BFR 280	110	Q62702-F884	BFN 17	96
Q62702-F1300	BFP 280	114	Q62702-F885	BFN 16	96
Q62702-F1303	BFN 38	100	Q62702-F938	BFR 35AP	110
Q62702-F1304	BFN 37	100	Q62702-F940	BFS 17P	110
Q62702-F1305	BFN 39	100	Q62702-F976	BFN 26	96
Q62702-F1306	BF 722	100	Q62702-F977	BFN 27	96
Q62702-F1309	BF 723	100	Q62702-F983	BFQ 17P	107
Q62702-F1312	BFQ 193	107	Q62702-K15	KOM 2084	245
Q62702-F1314	BFR 181	110	Q62702-K16	KOM 2085	245
Q62702-F1315	BFR 182	110	Q62702-K2	KOM 2033-A	245
Q62702-F1316	BFR 183	110	Q62702-K26	KOM 2033-B	245
Q62702-F1317	BFP 181	114	Q62702-K3	KOM 2045	245
Q62702-F1318	BFP 182	114	Q62702-K34	KOM 2100-BF	245
Q62702-F1319	BFP 183	114	Q62702-K35	KOM 2100-B	245
Q62702-F1320	BFP 196	114	Q62702-K36	KOM 2100-AF	245
Q62702-F1321	BFG 194	116	Q62702-K37	KOM 2100-A	245
Q62702-F1322	BFG 135A	116	Q62702-K38	KOM 2033-BF	245

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Q62702-K39	KOM 2033-AF	245	Q62702-P1187	SFH 900	252
Q62702-K4	KOM 2059	245	Q62702-P1188	SFH 905	252
Q62702-K8	KOM 2057-L	245	Q62702-P1189	BP 103 B	235
Q62702-P1000	SFH 309-6	239	Q62702-P128	SFH 206	227
Q62702-P1001	SFH 409-1	200	Q62702-P129	SFH 206 K	227
Q62702-P1002	SFH 409-2	200	Q62702-P141	SFH 900-2	252
Q62702-P1003	SFH 409-3	200	Q62702-P145	SFH 212	227
Q62702-P1012	SFH 250	283	Q62702-P15	BPX 38	235
Q62702-P102	SFH 205	227	Q62702-P15-S2	BPX 38-2	235
Q62702-P1029	BPY 12 H1	220	Q62702-P15-S3	BPX 38-3	235
Q62702-P1031	SFH 750	280	Q62702-P15-S4	BPX 38-4	235
Q62702-P1032	SFH 751	280	Q62702-P15-S5	BPX 38-5	235
Q62702-P1033	SFH 350	285	Q62702-P16	BPX 43	235
Q62702-P1034	SFH 450	280	Q62702-P16-S2	BPX 43-2	235
Q62702-P1038	SFH 291	227	Q62702-P16-S3	BPX 43-3	235
Q62702-P1051	SFH 225	227	Q62702-P16-S4	BPX 43-4	235
Q62702-P1052	SFH 231	227	Q62702-P16-S5	BPX 43-5	235
Q62702-P1053	SFH 232	227	Q62702-P174	SFH 309 F-2	239
Q62702-P1054	SFH 233	227	Q62702-P176	SFH 309 F-3	239
Q62702-P1081	SFH 263	227	Q62702-P178	SFH 309 F-4	239
Q62702-P1082	SFH 2031	280	Q62702-P17-S1	BPX 48	220
Q62702-P1087	SFH 900-4	252	Q62702-P180	SFH 309 F-5	239
Q62702-P1088	SFH 900-3	252	Q62702-P20	BPX 81	235
Q62702-P110	SFH 501	242	Q62702-P21	BPX 82	242
Q62702-P1111	BPX 38-6	235	Q62702-P210	SFH 752	280
Q62702-P1112	BPX 43-6	235	Q62702-P211	SFH 234 S	220
Q62702-P1113	BPY 62-5	235	Q62702-P212	SFH 244 S	220
Q62702-P1114	BPY 62-6	235	Q62702-P215	SFH 229	227
Q62702-P1115	SFH 2012 A	280	Q62702-P216	SFH 229 F	227
Q62702-P1116	SFH 462-L E7800	209	Q62702-P217	SFH 229 P	227
Q62702-P1117	SFH 905-1	252	Q62702-P218	SFH 229 PF	227
Q62702-P1118	SFH 905-2	252	Q62702-P219	SFH 317 F-2	239
Q62702-P1129	BPW 34 FA	220	Q62702-P22	BPX 86	242
Q62702-P1132	SFH 420-N	205	Q62702-P220	SFH 317 F-3	239
Q62702-P1133	SFH 420-P	205	Q62702-P221	SFH 317 F-4	239
Q62702-P1135	SFH 415-S	205	Q62702-P225	SFH 317-2	239
Q62702-P1136	SFH 415-T	205	Q62702-P226	SFH 317-3	239
Q62702-P1137	SFH 415-U	205	Q62702-P227	SFH 317-4	239
Q62702-P1138	SFH 416-Q	205	Q62702-P231	SFH 309 P-2	239
Q62702-P1139	SFH 416-R	205	Q62702-P232	SFH 309 P-3	239
Q62702-P1140	SFH 416-S	205	Q62702-P233	SFH 309 P-4	239
Q62702-P1154	SFH 414-T	209	Q62702-P235	SFH 309 PF-2	239
Q62702-P1155	SFH 414-U	205	Q62702-P236	SFH 309 PF-3	239
Q62702-P1161	SFH 551	285	Q62702-P237	SFH 309 PF-4	239
Q62702-P1163	BSP 50	94	Q62702-P245	SFH 309 P	239
Q62702-P1164	BSP 51	94	Q62702-P246	SFH 309 PF	239
Q62702-P1165	BSP 52	94	Q62702-P25	BPX 83	242
Q62702-P1166	BSP 60	94	Q62702-P26	BPX 89	242
Q62702-P1167	BSP 61	94	Q62702-P263	SFH 250 V	283
Q62702-P1168	BSP 62	94	Q62702-P264	SFH 350 V	285

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Q62702-P265	SFH 450 V	283	Q62702-P80	BPX 66	220
Q62702-P266	SFH 750 V	283	Q62702-P836	SFH 305	239
Q62702-P27	BPX 65	220	Q62702-P84	BP 104	220
Q62702-P270	SFH 221 S	220	Q62702-P848	SFH 305-2	239
Q62702-P273	SFH 235	227	Q62702-P849	SFH 305-3	239
Q62702-P28	BPX80	242	Q62702-P854	SFH 407-3	280
Q62702-P280	SFH 452	280	Q62702-P856	SFH 405-2	200
Q62702-P281	SFH 452 V	283	Q62702-P857	SFH 405-3	200
Q62702-P284	SFH 752 V	283	Q62702-P859	SFH 309	239
Q62702-P287	SFH 551 V	285	Q62702-P85-S2	BP 103 B-2	235
Q62702-P296	SFH 415	205	Q62702-P85-S3	BP 103 B-3	235
Q62702-P297	SFH 416	205	Q62702-P85-S4	BP 103 B-4	235
Q62702-P30	BPX 84	242	Q62702-P86	SFH 200	227
Q62702-P31	BPX 85	242	Q62702-P860	SFH 409	204
Q62702-P32	BPX 87	242	Q62702-P863	SFH 207 A	227
Q62702-P33	BPX 88	242	Q62702-P866	SFH 910	252
Q62702-P332	SFH 462-K E7800	209	Q62702-P885	BPW 21	220
Q62702-P373	SFH 505 A	242	Q62702-P89	SFH 204	220
Q62702-P388	SFH 320-1	239	Q62702-P890	SFH 414	205
Q62702-P389	SFH 320-2	239	Q62702-P896	SFH 205 Q2	227
Q62702-P390	SFH 320-3	239	Q62702-P9	BPY 12	220
Q62702-P391	SFH 320 F-1	239	Q62702-P91	SFH 202	280
Q62702-P392	SFH 320 F-2	239	Q62702-P917	BP 104 BS	220
Q62702-P393	SFH 320 F-3	239	Q62702-P928	BPX 90 F	220
Q62702-P43-S2	BPX 81-2	235	Q62702-P929	BPW 34 F	220
Q62702-P43-S3	BPX 81-3	235	Q62702-P935	SFH 900-1	252
Q62702-P43-S4	BPX 81-4	235	Q62702-P936	SFH 216	227
Q62702-P47	BPX 90	220	Q62702-P941	SFH 309 F	239
Q62702-P48-S	BPX 91 B	220	Q62702-P942	SFH 217	227
Q62702-P49	BPX 92	220	Q62702-P945	BPW 34 B	220
Q62702-P51	BPX 79	217	Q62702-P947	SFH 217 F	227
Q62702-P54	BPX 60	220	Q62702-P948	SFH 219	227
Q62702-P55	BPX 63	220	Q62702-P955	SFH 2030	227
Q62702-P595	SFH 100	227	Q62702-P956	SFH 2030 F	227
Q62702-P71	SFH 202 A	280	Q62702-P957	SFH 303	238
Q62702-P73	BPW34	220	Q62702-P959	SFH 317	239
Q62702-P74	BPW 32	220	Q62702-P960	SFH 317 F	239
Q62702-P75	PB 103	235	Q62702-P964	SFH 2012	280
Q62702-P76	BPW 33	220	Q62702-P997	SFH 309-3	239
Q62702-P768	BP 103-6	235	Q62702-P998	SFH 309-4	239
Q62702-P781	BP 103-5	235	Q62702-P999	SFH 309-5	239
Q62702-P783	SFH 400-2	200	Q62702-S45	BSS 92	325
Q62702-P784	SFH 400-3	200	Q62702-S454	BSS 88	324
Q62702-P786	SFH 401-2	200	Q62702-S455	BSS 89	324
Q62702-P787	SFH 401-3	200	Q62702-S457	BSS 91	324
Q62702-P789	SFH 402-2	200	Q62702-S461	BSS 95	324
Q62702-P790	SFH 402-3	200	Q62702-S463	BSS 97	323
Q62702-P79-S1	BP 103-2	235	Q62702-S464	BSS 98	323
Q62702-P79-S2	BP 103-3	235	Q62702-S483	BSS 100	323
Q62702-P79-S4	BP 103-4	235	Q62702-S484	BSS 101	324

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Q62702-S489	BSS 110	325	Q62703-N135-X1	SFH 6135 Opt. 1	263
Q62702-S505	BSS 125	324	Q62703-N135-X16	SFH 6135 Opt. 1+6	263
Q62702-S506	BSS 87	324	Q62703-N135-X17	SFH 6135 Opt. 1+7	263
Q62702-S510	BSS 129	325	Q62703-N21	CNY 17F-2	255
Q62702-S512	BSS 123	323	Q62703-N21-X1	CNY 17 F-2 Opt. 1	262
Q62702-S565	BSS 131	324	Q62703-N21-X16	CNY 17 F-2 Opt. 1+6	262
Q62702-S566	BSS 138	323	Q62703-N21-X17	CNY 17 F-2 Opt. 1+7	263
Q62702-S567	BSS 229	325	Q62703-N21-X6	CNY 17F-2 Opt. 6	255
Q62702-S568	BSS 84	325	Q62703-N21-X7	CNY 17F-2 Opt. 7	256
Q62702-S601	BSS 135	325	Q62703-N27-F114	IL 30	267
Q62702-S603	BSS 295	323	Q62703-N29-F114	IL 55	267
Q62702-S604	BSS 395	323	Q62703-N48-F114	ILCT 6	276
Q62702-S612	BSS 139	325	Q62703-N49	CNY 17F-1	255
Q62702-S615	BSS 296	323	Q62703-N49-X1	CNY 17 F-1 Opt. 1	262
Q62702-S616	BSS 297	323	Q62703-N49-X16	CNY 17 F-1 Opt. 1+6	262
Q62702-S623	BSS 149	325	Q62703-N49-X17	CNY 17 F-1 Opt. 1+7	263
Q62702-S631	BSS 119	323	Q62703-N49-X6	CNY 17F-1 Opt. 6	255
Q62702-S634	BSS 192	325	Q62703-N49-X7	CNY 17F-1 Opt. 7	256
Q62702-S652	BSP 89	324	Q62703-N50	CNY 17F-3	255
Q62702-S653	BSP 92	325	Q62703-N50-X1	CNY 17 F-3 Opt. 1	262
Q62702-S654	BSP 125	324	Q62703-N50-X16	CNY 17 F-3 Opt. 1+6	262
Q62702-S655	BSP 135	325	Q62703-N50-X17	CNY 17 F-3 Opt. 1+7	263
Q62703-F101	CFY 65-12	120	Q62703-N50-X6	CNY 17F-3 Opt. 6	255
Q62703-F102	CFY 65-14	120	Q62703-N50-X7	CNY 17F-3 Opt. 7	256
Q62703-F106	CFY 25-17	120	Q62703-N54	CNY 17F-4	255
Q62703-F107	CFY 25-20	120	Q62703-N54-X1	CNY 17 F-4 Opt. 1	262
Q62703-F108	CFY 25-23	120	Q62703-N54-X16	CNY 17 F-4 Opt. 1+6	262
Q62703-F14	CFY 19-18	120	Q62703-N54-X17	CNY 17 F-4 Opt. 1+7	263
Q62703-F8	CFY 19-22	120	Q62703-N54-X6	CNY 17F-4 Opt. 6	255
Q62703-F97	CFY 30	120	Q62703-N54-X7	CNY 17F-4 Opt. 7	256
Q62703-N109	SFH 615-1	258	Q62703-N75	SFH 610-1	258
Q62703-N110	SFH 615-2	258	Q62703-N76	SFH 610-2	258
Q62703-N111	SFH 615-3	258	Q62703-N77	SFH 610-3	258
Q62703-N115	SFH 620-1	258	Q62703-N80-F114	IL 250	267
Q62703-N116	SFH 620-2	258	Q62703-N82	SFH 611-1	258
Q62703-N117	SFH 620-3	258	Q62703-N83	SFH 611-2	258
Q62703-N121	SFH 618-1	258	Q62703-N84	SFH 611-3	258
Q62703-N124	SFH 618-2	258	Q62703-N86	CNY 17-1	255
Q62703-N125	SFH 618-3	258	Q62703-N86-X1	CNY 17-1 Opt. 1	262
Q62703-N127	SFH 617G-1	258	Q62703-N86-X16	CNY 17-1 Opt. 1+6	262
Q62703-N127-X1	SFH 617G-1 Opt. 1	263	Q62703-N86-X17	CNY 17-1 Opt. 1+7	262
Q62703-N128	SFH 617G-2	258	Q62703-N86-X6	CNY 17-1 Opt. 6	255
Q62703-N128-X1	SFH 617G-2 Opt. 1	263	Q62703-N86-X7	CNY 17-1 Opt. 7	255
Q62703-N129	SFH 617G-3	258	Q62703-N87	CNY 17-2	255
Q62703-N129-X1	SFH 617G-3 Opt. 1	263	Q62703-N87-X1	CNY 17-2 Opt. 1	262
Q62703-N133	SFH 6136	274	Q62703-N87-X16	CNY 17-2 Opt. 1+6	262
Q62703-N133-X1	SFH 6136 Opt. 1	263	Q62703-N87-X17	CNY 17-2 Opt. 1+7	262
Q62703-N133-X16	SFH 6136 Opt. 1+6	263	Q62703-N87-X6	CNY 17-2 Opt. 6	255
Q62703-N133-X17	SFH 6136 Opt. 1+7	263	Q62703-N87-X7	CNY 17-2 Opt. 7	255
Q62703-N135	SFH 6135	274	Q62703-N88	CNY 17-3	255

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Q62703-N88-X1	CNY 17-3 Opt. 1	262	Q62703-Q1383	LS 5360-KN	134
Q62703-N88-X16	CNY 17-3 Opt. 1+6	262	Q62703-Q1387	LY 5360-HL	134
Q62703-N88-X17	CNY 17-3 Opt. 1+7	262	Q62703-Q1391	LG 5360-GK	134
Q62703-N88-X6	CNY 17-3 Opt. 6	255	Q62703-Q1392	LR 5460-DG	135
Q62703-N88-X7	CNY 17-3 Opt. 7	255	Q62703-Q1393	LR 5460-F	135
Q62703-N89	CNY 17-4	255	Q62703-Q1395	LR 5460-FJ	135
Q62703-N89-X1	CNY 17-4 Opt. 1	262	Q62703-Q1396	LS 5460-HL	135
Q62703-N89-X16	CNY 17-4 Opt. 1+6	262	Q62703-Q1397	LS 5460-K	135
Q62703-N89-X17	CNY 17-4 Opt. 1+7	262	Q62703-Q1399	LS 5460-KN	135
Q62703-N89-X6	CNY 17-4 Opt. 6	255	Q62703-Q1402	LY 5460-K	135
Q62703-N89-X7	CNY 17-4 Opt. 7	255	Q62703-Q1403	LY 5460-JM	135
Q62703-P835	SFH 405	200	Q62703-Q1407	LG 5460-GK	135
Q62703-P97	SFH 401	200	Q62703-Q1408	LR 5480-DG	139
Q62703-P98	SFH 402	200	Q62703-Q1416	LY 5480-GK	139
Q62703-Q2123	LP K382-PO	131	Q62703-Q1418	LY 5480-K	139
Q62703-Q2334	LP T672-LO	144	Q62703-Q1419	LY 5480-JM	139
Q62703-Q2380	LSP K372	132	Q62703-Q1428	LS 5420-LP	133
Q62703-Q0575	LY K380-N	131	Q62703-Q1430	LS 5420-P	133
Q62703-Q1003	LS K380-P	131	Q62703-Q1431	LS 5420-NR	133
Q62703-Q1031	LD 274	200	Q62703-Q1432	LY 5420-LP	133
Q62703-Q1034	LG K380-P	131	Q62703-Q1434	LY 5420-P	133
Q62703-Q1038	LW S260-DO	143	Q62703-Q1435	LY 5420-NR	133
Q62703-Q1087	SFH 480	212	Q62703-Q1439	LG 5410-MQ	133
Q62703-Q1088	SFH 481	212	Q62703-Q1442	LS 5421-Q	135
Q62703-Q1089	SFH 482	212	Q62703-Q1444	LY 5421-MQ	135
Q62703-Q1092	SFH 484	212	Q62703-Q1447	LY 5421-PS	135
Q62703-Q1093	SFH 485	212	Q62703-Q1452	LS 5380-FJ	134
Q62703-Q1095	SFH 487	212	Q62703-Q1453	LS 5380-H	134
Q62703-Q1316	LR 3360-DG	129	Q62703-Q1454	LS 5380-J	134
Q62703-Q1317	LR 3360-F	129	Q62703-Q1455	LS 5380-HL	134
Q62703-Q1319	LR 3360-FJ	129	Q62703-Q1457	LY 5380-H	134
Q62703-Q1320	LS 3360-HL	129	Q62703-Q1463	LG 5380-FJ	134
Q62703-Q1321	LS 3360-K	129	Q62703-Q1464	LR B480-BD	139
Q62703-Q1323	LS 3360-KN	129	Q62703-Q1465	LR B480-C	139
Q62703-Q1324	LY 3360-HL	129	Q62703-Q1466	LS B480-EH	139
Q62703-Q1325	LY 3360-J	129	Q62703-Q1468	LS B480-H	139
Q62703-Q1331	LG 3360-GK	129	Q62703-Q1469	LS B480-GK	139
Q62703-Q1348	LS 3380-GK	130	Q62703-Q1470	LY B480-EH	139
Q62703-Q1349	LS 3380-J	130	Q62703-Q1477	LG B480-EH	139
Q62703-Q1351	LS 3380-JM	130	Q62703-Q148	LD 271	200
Q62703-Q1352	LY 3380-FJ	130	Q62703-Q1492	LS U260-EO	141
Q62703-Q1354	LY 3380-H	130	Q62703-Q1493	LY U260-EO	141
Q62703-Q1355	LY 3380-HL	130	Q62703-Q1494	LG U260-EO	141
Q62703-Q1356	LG 3380-EH	130	Q62703-Q1495	LR Z181-CO	146
Q62703-Q1359	LG 3380-GK	130	Q62703-Q1496	LR Z182-CO	146
Q62703-Q1376	LR 5360-DG	134	Q62703-Q1497	LR Z183-CO	146
Q62703-Q1377	LR 5360-F	134	Q62703-Q1498	LR Z184-CO	146
Q62703-Q1379	LR 5360-FJ	134	Q62703-Q1499	LR Z185-CO	146
Q62703-Q1380	LS 5360-HL	134	Q62703-Q1505	LY Z181-CO	146
Q62703-Q1381	LS 5360-K	134	Q62703-Q1506	LG Z181-CO	146

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Q62703-Q1507	LG Z182-CO	146	Q62703-Q1869	LG 5480-J	139
Q62703-Q1508	LG Z183-CO	146	Q62703-Q1870	LG B480-G	139
Q62703-Q1509	LG Z184-CO	146	Q62703-Q1875	LD 261-SE-7800	200
Q62703-Q151	LD 242	200	Q62703-Q1886	LS 3340-JO	129
Q62703-Q1510	LG Z185-CO	146	Q62703-Q1887	LO 3360-HL	129
Q62703-Q1546	SFH 485-1	212	Q62703-Q1888	LO K380-LP	131
Q62703-Q1547	SFH 485-2	212	Q62703-Q1917	LD 275-3	200
Q62703-Q1608	LG S260-DO	143	Q62703-Q1918	LD 275-2	200
Q62703-Q1640	LS S260-DO	143	Q62703-Q1919	LD 275-1	200
Q62703-Q1642	LU S250-DO	143	Q62703-Q1956	LS K382-RO	131
Q62703-Q1657	LY S260-DO	143	Q62703-Q1957	LO K382-RO	131
Q62703-Q1661	SFH 480-1	212	Q62703-Q1958	LY K382-RO	131
Q62703-Q1662	SFH 480-2	212	Q62703-Q1959	LG K382-RO	131
Q62703-Q1664	SFH 481-1	212	Q62703-Q198	LD 242-2	200
Q62703-Q1665	SFH 481-2	212	Q62703-Q1986	LR 5480-CF	139
Q62703-Q1666	SFH 481-3	212	Q62703-Q1987	LR 5480-F	139
Q62703-Q1667	SFH 482-1	212	Q62703-Q1989	LS 5480-GK	139
Q62703-Q1668	SFH 482-2	212	Q62703-Q199	LD 242-3	200
Q62703-Q1669	SFH 482-3	212	Q62703-Q1990	LS 5480-K	139
Q62703-Q1698	LG 3330-KN	129	Q62703-Q1992	LS 5480-JM	139
Q62703-Q1700	LG 3330-M	129	Q62703-Q1994	LS 5421-NR	135
Q62703-Q1701	LS 3340-JM	129	Q62703-Q1995	LS 5421-QT	135
Q62703-Q1703	LS 3340-LP	129	Q62703-Q1998	LY 3360-JM	129
Q62703-Q1704	LS 3340-M	129	Q62703-Q2000	LY 5360-GK	134
Q62703-Q1739	LG 5411-Q	135	Q62703-Q2001	LY 5360-K	134
Q62703-Q1748	LS 3369-EH	141	Q62703-Q2002	LY 5380-EH	134
Q62703-Q1749	LY 3369-EH	141	Q62703-Q2003	LY 5380-GK	134
Q62703-Q1750	LG 3369-EH	141	Q62703-Q2005	LY 5421-R	135
Q62703-Q1751	LS 5469-EH	141	Q62703-Q2006	LY B480-H	139
Q62703-Q1752	LY 5469-EH	141	Q62703-Q2007	LY B480-GK	139
Q62703-Q1753	LG 5469-EH	141	Q62703-Q2008	LG 3360-J	129
Q62703-Q1755	SFH 484-1	212	Q62703-Q2009	LG 3360-JM	129
Q62703-Q1756	SFH 484-2	212	Q62703-Q2011	LG 3330-LP	129
Q62703-Q1758	SFH 485 P-1	212	Q62703-Q2013	LG 5360-JM	134
Q62703-Q1762	SFH 487 P-1	212	Q62703-Q2015	LG 5460-JM	135
Q62703-Q1763	SFH 487 P-2	212	Q62703-Q2017	LG 5380-HL	134
Q62703-Q1768	LS K380-LP	131	Q62703-Q2020	LG 5410-Q	133
Q62703-Q1769	LY K380-LP	131	Q62703-Q2022	LG 5410-PS	133
Q62703-Q1770	LG K380-LP	131	Q62703-Q2023	LG 5411-MQ	135
Q62703-Q1771	LS K389-FO	131	Q62703-Q2024	LG 5411-PS	135
Q62703-Q1772	LY K389-FO	131	Q62703-Q2026	LG B480-GK	139
Q62703-Q1773	LG K389-FO	131	Q62703-Q203	LD 261-GE-7800	200
Q62703-Q1789	LS 3340-HL	129	Q62703-Q2032	LG 5380-H	134
Q62703-Q1791	LY 3340-L	129	Q62703-Q2047	LU 5351-JM	139
Q62703-Q1792	LY 3340-KN	129	Q62703-Q2049	LU B371-GK	139
Q62703-Q1818	LD 274-1	200	Q62703-Q2067	LV S260-DO	143
Q62703-Q1819	LD 274-2	200	Q62703-Q2145	LS 3341-KN	129
Q62703-Q1820	LD 274-3	200	Q62703-Q2148	LS 3341-MQ	129
Q62703-Q1866	LG 5360-J	134	Q62703-Q2149	LY 3341-JM	129
Q62703-Q1867	LG 5460-J	135	Q62703-Q2152	LY 3341-LP	129

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Q62703-Q2153	LG 3341-JP	129	Q62703-Q2504	LY T670-JL	143
Q62703-Q2156	LG 3341-LP	129	Q62703-Q2505	LG T670-JL	143
Q62703-Q2157	LD 242-LE-78000	200	Q62703-Q256	LD 271-H	200
Q62703-Q2158	LD 242-ME-7800	200	Q62703-Q395	LD 261	200
Q62703-Q2162	SFH 483-L E7800	212	Q62703-Q516	SFH 485 P	212
Q62703-Q2163	SFH 483-M E7800	212	Q62703-Q517	SFH 487 P	212
Q62703-Q2173	SFH 487-1	212	Q62703-Q66	LD 261-4	200
Q62703-Q2174	SFH 487-2	212	Q62703-Q67	LD 261-5	200
Q62703-Q2185	SFH 482-L E7800	212	Q62703-Q694	LD 273	200
Q62703-Q2186	SFH 482-M E7800	212	Q62703-Q70	LD 262	209
Q62703-Q2228	LO K380-LP	131	Q62703-Q71	LD 263	209
Q62703-Q2230	LH 3343-PO	137	Q62703-Q72	LD 264	209
Q62703-Q2231	LH 3344-QO	137	Q62703-Q728	LD 275	200
Q62703-Q2232	LH 3363-KO	137	Q62703-Q73	LD 265	209
Q62703-Q2233	LH 3364-LO	137	Q62703-Q74	LD 266	209
Q62703-Q2241	LH 5423-PO	137	Q62703-Q75	LD 267	209
Q62703-Q2242	LH 5424-QO	137	Q62703-Q754	SFH 485 P-2	212
Q62703-Q2243	LH 5463-KO	137	Q62703-Q76	LD 268	209
Q62703-Q2244	LH 5464-LO	137	Q62703-Q77	LD 269	209
Q62703-Q2298	LSG K370-LO	132	Q62703-Q78	LD 260	209
Q62703-Q2299	LSG K372-RO	132	Q62703-Q833	LD 271-L	200
Q62703-Q2309	LS T670-HK	143	Q62703-Q838	LD 271-H	200
Q62703-Q2310	LO T670-HK	143	Q62705-K107	KTY 10	306
Q62703-Q2311	LY T670-HK	143	Q62705-K110	KTY 10-5	306
Q62703-Q2312	LG T670-HK	143	Q62705-K111	KTY 10-7	306
Q62703-Q2318	LG 3380-J	130	Q62705-K128	KTY 16-6	306
Q62703-Q2329	LH 674-KO	143	Q62705-K132	KTY 10-6	306
Q62703-Q2330	LO T672-MO	144	Q62705-K150	KPY 32R	309
Q62703-Q2331	LS T672-MO	144	Q62705-K151	KPY 33R	309
Q62703-Q2332	LY T672-MO	144	Q62705-K159	KPY 41R	309
Q62703-Q2333	LG T672-MO	144	Q62705-K160	KPY 42R	309
Q62703-Q2335	LH T673-JO	143	Q62705-K161	KPY 43R	309
Q62703-Q2357	LS T670-J	143	Q62705-K162	KPY 43A	309
Q62703-Q2358	LS T670-K	143	Q62705-K163	KPY 44R	309
Q62703-Q236	LD 261-6	200	Q62705-K164	KPY 44A	309
Q62703-Q2375	LY T670-K	143	Q62705-K165	KPY 45R	309
Q62703-Q2376	LY T670-J	143	Q62705-K166	KPY 45A	309
Q62703-Q2377	LG T670-J	143	Q62705-K167	KPY 46R	309
Q62703-Q2378	LG T670-K	143	Q62705-K169	KPY 47R	309
Q62703-Q2379	LSP K370-KO	132	Q62705-K174	KPY 51R	312
Q62703-Q2383	LS T679-CO	144	Q62705-K175	KPY 52R	312
Q62703-Q2384	LY T679-CO	144	Q62705-K176	KPY 53R	312
Q62703-Q2385	LG T679-CO	144	Q62705-K177	KPY 53A	312
Q62703-Q2406	SFH 421-N	205	Q62705-K178	KPY 54R	312
Q62703-Q2407	SFH 421-P	205	Q62705-K179	KPY 54A	312
Q62703-Q2456	LP T670-GO	143	Q62705-K180	KPY 55R	312
Q62703-Q2475	LO T670-J	143	Q62705-K181	KPY 55A	312
Q62703-Q2476	LO T670-K	143	Q62705-K182	KPY 56R	312
Q62703-Q2502	LS T670-JL	143	Q62705-K183	KPY 56A	312
Q62703-Q2503	LO T670-JL	143	Q62705-K184	KPY 57R	312
			Q62705-K185	KPY 57A	312

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Q62705-K187	KPY 59A	312	Q64099-V615	SBV 603	302
Q62705-K204	KPY 42A	309	Q64099-V616	SBV 604	302
Q62705-K209	KSY 13	304	Q64099-V617	SBV 613	302
Q62705-K211	KPY 52A	312	Q64099-V620	SBV 620	302
Q62705-K227	KSY 14	304	Q65030-D250-E	FP30D 250E	291
Q62705-K244	KTY 11	306	Q65030-L100-E	FP30L 100E	291
Q62705-K245	KTY 11-5	306	Q65030-N60-E	FP30N 60E	291
Q62705-K246	KTY 11-6	306	Q65110-D155-D	FP110D 155	291
Q62705-K247	KTY 11-7	306	Q65110-L100-D	FP111L 100	291
Q62705-K248	KTY 13	306	Q65110-L60-D	FP110L 60	291
Q62705-K249	KTY 13-5	306	Q65110-L80F	FP 410 L (4 x 80) FM	296
Q62705-K250	KTY 13-6	306	Q65210-D250-W1	FP210D250-2	291
Q62705-K251	KTY 13-7	306	Q65210-D250-W5	FP210D250-22	291
Q62705-K253	KTY 20	306	Q65210-L100-W2	FP210L100-2	291
Q62705-K254	KTY 20-5	306	Q65210-L100-W4	FP210L100-22	291
Q62705-K255	KTY 20-6	306	Q65210-L101	FP201L100	291
Q62705-K256	KTY 20-7	306	Q65211-D155-2	FP211D155-2	291
Q62705-K257	KTY 21	306	Q65212-D2504	FP212D250-22	291
Q62705-K258	KTY 21-5	306	Q65212-L1004	FP212L100-22	291
Q62705-K259	KTY 21-6	306	Q65213-D105	FP213D105	291
Q62705-K260	KTY 21-7	306	Q65310-L100-U30	FP310L100-30	296
Q62705-K261	KTY 23	306	Q65310-L100-U75	FP310L100-75	296
Q62705-K262	KTY 23-5	306	Q65412-D250	FP 412 D 250	296
Q62705-K263	KTY 23-6	306	Q65412-L100	FP 412 L100	296
Q62705-K264	KTY 23-7	306	Q65414-L300	FP 414 L300	296
Q62705-K271	KTY 19-6M	306	Q67000-8298	TDA 4817	49
Q62705-K272	KTY 19-6Z	306	Q67000-8299	TDA 4817 G	49
Q62705-K38	KSY 10	304	Q67000-A1005	TCA 315 G	45
Q62705-P25	BPX 61	220	Q67000-A1012	TCA 325 G	48
Q62901-B79	IR-B2	208	Q67000-A1018	TCA 335 G	45
Q62901-B80	Connector Set	306	Q67000-A1031	TAA 2765 A	46
Q62902-B141-F222	Reflector	147	Q67000-A1034	TCA 205 A	52
Q62902-B146	Watertight Plug	296	Q67000-A1165	TBE 2335 B	46
Q62902-B152-F222	Endstackable clips	147	Q67000-A1167	TBE 4435 A	47
Q62902-B153-F222	Endstackable clips	147	Q67000-A1876	TCA 2365 B	48
Q62902-B154-F222	Reflector	147	Q67000-A2017	TAE 1453 A	45
Q62902-B155-F222	Rectangular mount. part	147	Q67000-A2048	TCA 312 A	45
Q62902-B156-F222	Rectangular mount. part	147	Q67000-A2106	TAE 1453 G	45
Q62902-B166	Encoder Wheel	252	Q67000-A2107	TAE 2453 A	46
Q62902-B167-F222		167	Q67000-A2108	TAE 2453 G	46
Q62902-B168-F222		167	Q67000-A2109	TAE 4453 A	47
Q62902-B169-F222	Flächenleuchte	167	Q67000-A2152	TAE 4453 G	47
Q62902-B170-F222	Illuminated surface	167	Q67000-A2210	TAF 2453 A	46
Q62902-B171-F222	liegend/horizontal	167	Q67000-A2212	TAF 4453 A	47
Q62902-B172-F222		167	Q67000-A2242	SDA 5200 N	50
Q62902-B173-F222		167	Q67000-A2243	SDA 5200 S	50
Q62902-B174-F222	Flächenleuchte	167	Q67000-A2269	TAF 1453 A	45
Q62902-B175-F222	Illuminated surface	167	Q67000-A2271	TAA 762 A	45
Q62902-B176-F222	stehend/vertikal	167	Q67000-A2272	TCA 332 A	45
Q62902-B177-F222		167			
Q62902-B178-F222		167			



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Q67000-A2291	TCA 305 A	52	Q67000-A8094	PSB 6521-2	56
Q67000-A2305	TCA 305 G	52	Q67000-A8110	TCA 2465 A	48
Q67000-A2312	TLE 3104	50	Q67000-A8109	TCA 2465	48
Q67000-A2321	TCA 785	50	Q67000-A8118	TLE 4211	43
Q67000-A2337	TLE 3101	50	Q67000-A8121	TLE 4203	43
Q67000-A2338	TLE 3102	50	Q67000-A8129	SDA 0808 B	50
Q67000-A2339	TLE 3103	50	Q67000-A8142	TDA 4918 G	49
Q67000-A2366	TCA 671 G	49	Q67000-A8143	TDA 4919 A	49
Q67000-A2367	TCA 871 G	49	Q67000-A8144	SDA 0810 B	50
Q67000-A2379	TDA 4601	41	Q67000-A8146	PSB 4500	56
Q67000-A2443	TCA 355 G	52	Q67000-A8147	PSB 4500-T	56
Q67000-A2444	TCA 355 G	52	Q67000-A8148	PSB 4501	56
Q67000-A2445	SAE 0700	51	Q67000-A8149	PSB 4501-T	56
Q67000-A2461	TDA 6200	41	Q67000-A8163	TDA 4814 A	49
Q67000-A2498	PSB 6620	56	Q67000-A8169	TDA 5930	40
Q67000-A2499	TAA 2762 A	46	Q67000-A8183	TLE 4214	43
Q67000-A2500	TBC 2332 B	46	Q67000-A8184	TLE 4215	43
Q67000-A2501	TCA 322 A	48	Q67000-A8187	TLE 4260	44
Q67000-A2518	TLE 4901 F	43	Q67000-A8189	TCA 365 B	48
Q67000-A2538	TDA 4935	41	Q67000-A8190	TCA 1365 B	48
Q67000-A2566	SDA 8010	50	Q67000-A8760	TBB 212 A	53
Q67000-A5006	SDA 5231-2	41	Q67000-A8761	TBB 212 AG	53
Q67000-A5026	TDA 6610-2	41	Q67000-A8208	TCA 1560 B	51
Q67000-A524	TAA 765 A	45	Q67000-A8209	TCA 1561 B	51
Q67000-A527	TCA 105	48	Q67000-A8210	TDA 6600-2	41
Q67000-A561	TCA 315 A	45	Q67000-A8213	TBB 204 G	53
Q67000-A562	TCA 325 A	48	Q67000-A8225	TLE 4202 B	43
Q67000-A563	TCA 335 A	45	Q67000-A8233	SDA 0812 A	50
Q67000-A564	TCA 345 A	48	Q67000-A8237	TLE 4216	43
Q67000-A587	TCA 105 B	48	Q67000-A8238	TLE 4258	44
Q67000-A599	TAA 765 G	45	Q67000-A8260	TDA 6611	41
Q67000-A6015	PSB 45030-T-V1.2	56	Q67000-A8290	TDA 4816 G	49
Q67000-A6017	PSB 4506-V1.2	56	Q67000-A8291	SDA 1812 D	50
Q67000-A6019	PSB 4506-A-V1.2	56	Q67000-A8292	TCA 605 G	52
Q67000-A6020	PSB 45030-V1.2	56	Q67000-A8302	TCA 3727	51
Q67000-A6024-X201A1	PMB 2400 T	53	Q67000-A8312	TDA 4714 C	49
Q67000-A6025-C701	PMB 2200 T	53	Q67000-A8313	TDA 4716 C	49
Q67000-A6031	PSB 4506-AT-V1.2	56	Q67000-A8334	TCA 2465 G	48
Q67000-A8007	TLE 4202	42	Q67000-A8335	TCA 3727 G	51
Q67000-A8008	TDA 4210-3	42	Q67000-A8341	TCA 505 BG	52
Q67000-A8018	TDA 4919 G	49	Q67000-A8344	TCA 505 B	52
Q67000-A8021	TDA 4918 A	49	Q67000-A9000	TLE 4920 G	43
Q67000-A8037	TBA 229-2	40	Q67000-A9003	TLE 4261	44
Q67000-A8047	TLE 4903 F	43	Q67000-A9009	TLE 4910 G	43
Q67000-A8048	TLE 4902 F	43	Q67000-A9010	TLE 4220	43
Q67000-A8075	TCA 971 G	49	Q67000-A9025	TLE 4205	43
Q67000-A8076	TCA 991 G	49	Q67000-A9044	TLE 4260 S	44
Q67000-A5020	TDA 4605-2	41	Q67000-A9059	TLE 4261 G	44
Q67000-A8080	TLE 4201 A1	43	Q67000-A9068	TLE 4262 G	44

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Q67000-A9097	HKZ 121	43	Q67000-L176	FZL 135 S	33
Q67000-A9101	TLE 4203 S	43	Q67000-L69	FZL 105	33
Q67000-A919	TBA 120 T	40	Q67000-S060	BS 107	323
Q67000-A982	TCA 965	48	Q67000-S061	BS 170	323
Q67000-A983	TCA 955	51	Q67000-S062	SN 7000	323
Q67000-A988	TCA 105 G	48	Q67000-S063	SN 7002	323
Q67000-H1587	FZH 305	31	Q67000-S065	SP 06 10L	325
Q67000-H1948	SAB 0600	51	Q67000-S066	BSP 295	323
Q67000-H215	FZH 115 B	29	Q67000-S067	BSP 296	323
Q67000-H2312	SAB 0601	51	Q67000-S068	BSP 297	323
Q67000-H2313	SAB 0602	51	Q67000-S070	BSP 88	324
Q67000-H2431	FZH 215 S	30	Q67000-S071	BSP 149	325
Q67000-H256	FZH 145	29	Q67000-S073	BSP 129	325
Q67000-H260	FZH 155	29	Q67000-S075	BSP 315	325
Q67000-H2878	SH 133 C0 116	70	Q67000-S092	BSP 316	325
Q67000-H289	FZH 165 B	29	Q67000-S094	BSP 317	325
Q67000-H3070	SH 133 C0 116-SO	70	Q67000-S127	BSP 318	323
Q67000-H327	FZH 185	29	Q67000-S208	SP 06 10T	325
Q67000-H5005	SDA 3302	40	Q67000-S215	BSP 324	324
Q67000-H634	FZH 195	29	Q67000-S220	BSP 17	323
Q67000-H637	FZH 205	30	Q67000-T1	TCA 671	49
Q67000-H643	FZH 235	30	Q67000-T11	TCA 971	49
Q67000-H646	FZH 245 B	30	Q67000-T12	TCA 991	49
Q67000-H7036	SH 133 C01	70	Q67000-T2	TCA 871	49
Q67000-H7508	S360 B 110	70	Q67000-Y555-V702	S360 B 114	70
Q67000-H818	FZH 255 B	30	Q67000-Y594	TDA 4700 A	49
Q67000-H820	FZH 265 B	30	Q67000-Y638	TDA 4718	49
Q67000-H8217	TBB 202	53	Q67000-Y639	TDA 4718 A	49
Q67000-H8218	TBB 202 G	53	Q67002-S614	BSS 124	324
Q67000-H822	FZH 275	31	Q67020-P57	SAB 82511-5-NE	68
Q67000-H824	FZH 285 B	31	Q67020-P58	SAB 82511-1-NE	68
Q67000-H826	FZH 295 B	31	Q67020-Y149	SAB 8282A-P	66
Q67000-H8403	SAE 0530	51	Q67020-Y150	SAB 8283A-P	66
Q67000-H8431	SAE 0531	51	Q67020-Y151	SAB 8284B-P	66
Q67000-H8432	SAE 0532 G	51	Q67020-Y152	SAB 8284B-1-P	66
Q67000-H8437	FZL 4145 D	48	Q67020-Y153	SAB 8286A-P	66
Q67000-H8722	TBB 206	53	Q67020-Y154	SAB 8287A-P	66
Q67000-H8723	TBB 206 G	53	Q67020-Y155	SAB 8288A-P	66
Q67000-H8730	SDA 1810 D	50	Q67020-Y162	SAB 82284-P	66
Q67000-H8759	TBB 278 B	51	Q67020-Y167	SAB 82284-1-P	66
Q67000-J124	FZJ 105	31	Q67020-Y74	SAB 8289-P	66
Q67000-J125	FZJ 115	31	Q67020-Y85	SAB 8289-1-P	66
Q67000-J386	FZJ 125	32	Q67078-A5007-A2	BTS 100	330
Q67000-J389	FZJ 135	32	Q67079-A1000-A6	BRT 11H	329
Q67000-J562	FZJ 165	32	Q67079-A1001-A6	BRT 12H	329
Q67000-J647	FZJ 145 A	32	Q67079-A1020-A6	BRT 21H	329
Q67000-J685	FZJ 155 A	32	Q67079-A1021-A6	BRT 22H	329
Q67000-K7	FZK 105	33	Q67100-A8310	SLB 0587	52
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Q67100-H5001	SDA 2526-2	40	Q67100-H8645	PSB 2120-P-VB4	54
Q67100-H5002	SDA 2516-2	40	Q67100-H8646	PSB 2121-P-VA4	54
Q67100-H5059	SDA 2506-3	40	Q67100-H8706	SAE 81C80 A	44
Q67100-H5029	SDA 9205-2	42	Q67100-H8720	SLB 0586 G	52
Q67100-H5031	SDA 5243-2	41	Q67100-H8721	SLB 0586 A	52
Q67100-H5043	SDA 9088-2	42	Q67100-H8759	TBB 278 B	51
Q67100-H5045	SDA 9086-3	42	Q67100-Q427	HYB 511000B-70	59
Q67100-H5066	SDA 9087-2	42	Q67100-Q428	HYB 511000B-80	59
Q67100-H6031	PSB 2160-N-V2.2	54	Q67100-Q430	HYB 511000BJ-70	59
Q67100-H6032	PSB 2121-T-VA4	54	Q67100-Q433	HYB 514256B-70	59
Q67100-H6035	PEB 2055-N-VA3	54	Q67100-Q436	HYB 514256BJ-70	59
Q67100-H6036	PEB 2055-P-VA3	54	Q67100-Q445	HYM 91000S-70	60
Q67100-H6104	PEB 2046-N-VA3	55	Q67100-Q470	HYM 91000S-60	60
Q67100-H6105	PEB 2046-P-VA3	55	Q67100-Q497	HYM 91000L-70	60
Q67100-H6109	PSB 8510-1	56	Q67100-Q512	HYB 511000B-60	59
Q67100-H6111	SAB 82526-N	55	Q67100-Q515	HYB 511000BJ-60	59
Q67100-H6128	SAB 82532-N	55	Q67100-Q521	HYB 511000BZ-60	59
Q67100-H6191	PEB 2260-N-V2.0	55	Q67100-Q522	HYB 511000BZ-70	59
Q67100-H6189	PEB 2075-N-V1.3	54	Q67100-Q530	HYB 514256B-60	59
Q67100-H6207	PEB 2235-P-V4.1	55	Q67100-Q533	HYB 514256BJ-60	59
Q67100-H6208	PEB 2235-N-V4.1	55	Q67100-Q539	HYB 514256BZ-60	59
Q67100-H6209	PEB 2245-N-V1.2	55	Q67100-Q540	HYB 514256BZ-70	59
Q67100-H6212	PEB 2070-P-V2.4	54	Q67100-Q548	HYM 362500S-80	60
Q67100-H6213	PEB 2070-N-V2.4	54	Q67100-Q549	HYM 365120S-80	60
Q67100-H6223	PSB 8510-6	56	Q67100-Q558	HYM 361120GS-70	60
Q67100-H6225	PSB 8510-6T	56	Q67100-Q573	HYM 94500S-80	60
Q67100-H6238	PEB 2047-N-V2.1	55	Q67100-Q582	HYM 94500S-70	60
Q67100-H6294	PEB 2110-P-V2.2	54	Q67100-Q584	HYB 514100AJ-70	59
Q67100-H8003	SAE 81C52 P	44	Q67100-Q585	HYB 514100AJ-80	59
Q67100-H8004	SAE 81C52 G	44	Q67100-Q590	HYB 514400AJ-70	59
Q67100-H8014	SAB 82520-P	55	Q67100-Q591	HYB 514400AJ-80	59
Q67100-H8215	TBB 200	53	Q67100-Q624	HYM 361120GS-80	60
Q67100-H8216	TBB 200 G	53	Q67100-Q645	HYM 362120GS-70	60
Q67100-H8271	SLE 4520	51	Q67100-Q646	HYM 362120GS-80	60
Q67100-H8322	PEB 2045-P-VA3	55	Q67100-Z170	PEB 2060-P-V4.4	55
Q67100-H8392	PEB 2050-N-VB1	55	Q6710-H5063	SDA 9251 X	42
Q67100-H8393	PEB 2060-N-V4.4	55	Q67120-C122	SAB 8085AH-P	65
Q67100-H8395	PEB 2080-N-VB1	54	Q67120-C124	SAB 8085AH-2-P	65
Q67100-H8396	PEB 2095-N-VA5	54	Q67120-C141	SAB 8086-1-P	65
Q67100-H8400	SAB 82520-N	55	Q67120-C142	SAB 8086-2-P	65
Q67100-H8401	PEB 2085-P-V2.3	54	Q67120-C183	SAB 8031A-P	63
Q67100-H8486	SAE 81C54 P	44	Q67120-C213	SAB 8088-2-P	65
Q67100-H8503	PSB 2160-P-V2.2	54	Q67120-C230	SAB 8031A-12-P-T40/85	64
Q67100-H8547	SDA 5642	41	Q67120-C240	SAB 80535-N-T40/85	64
Q67100-H8590	SAB 82525-N	55	Q67120-C241	SAB 80535-N	63
Q67100-H8601	PEB 2085-N-V2.3	54	Q67120-C249	SAB 8088-1-P	65
Q67100-H8602	PEB 2045-N-VA3	55	Q67120-C250	SAB 80186-N	65
Q67100-H8616	SDA 2546	40	Q67120-C252	SAB 80188-N	65
Q67100-H8617	SDA 2586	40	Q67120-C269	SAB 80286-1-N	65

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Q67120-C299	SAB 80188-1-N	65	Q67120-P249	SAB 82258A-1-R	67
Q67120-C300	EPC 535	64	Q67120-P250	SAB 82258A-R	67
Q67120-C306	SAB 80186-1-N	65	Q67120-P287	SAB 82556-N	68
Q67120-C347	SAB 8031A-16-P	63	Q67120-P311	SAB 82C257A-1-N	67
Q67120-C349	SAB 8031A-16-N	63	Q67120-P312	SAB 82C258A-1-N	67
Q67120-C378	SAB 80C32-P	63	Q67120-P313	SAB 82C258A-12-N	67
Q67120-C381	SAB 80286-12-N	65	Q67120-P314	SAB 82C258A-16-N	67
Q67120-C395	SAB 80C32-N	63	Q67120-P323	SAB 82C258A-20-N	67
Q67120-C419	SAB 8032B-P	63	Q67120-P46	SAB 8259A-P	68
Q67120-C421	SAB 8032B-16-P	63	Q67120-P81	SAB 8259A-2-P	68
Q67120-C423	SAB 8032B-N	63	Q67120-Q42	SAB 8155-P	67
Q67120-C425	SAB 8032B-16-N	63	Q67120-Q86	SAB 8155-2-P	67
Q67120-C427	SAB 8032B-P-T40/85	64	Q67120-Y43	SAB 8256A-P	67
Q67120-C452	SAB 80C537-N	63	Q67120-Y59	SAB 8256A-2-P	67
Q67120-C466	SAB 8031A-20-P	63	Q67120-Y69	SAB 82288-1-P	66
Q67120-C467	SAB 8031A-20-N	63	Q67120-Y72	SAB 8237A-5-P	67
Q67120-C471	SAB8032B-20-P	63	Q67120-Y75	SAB 82288-P	66
Q67120-C484	SAB 80C537-N-T40/85	64	Q67120-Y77	SAB 82289-P	66
Q67120-C486	EMOD-C517	64	Q67120-Y82	SAB 2793B-P	67
Q67120-C498	SAB-R 3000A-33-AE	65	Q67120-Y84	SAB 2797B-P	67
Q67120-C499	SAB-R 3010A-33-A	65	Q68000-A1210	HLMP 2800	163
Q67120-C500	SAB 80C32-16-P	63	Q68000-A1226	HLMP 2700	163
Q67120-C502	SAB 80C32-16-N	63	Q68000-A1627	HLMP 2600	163
Q67120-C508	SAB 80C535-N	63	Q68000-A2285	BC 637	78
Q67120-C509	SAB 80C535-16-N	63	Q68000-A2436	HLMP 2550	163
Q67120-C510	SAB 80C535-N-T40/85	64	Q68000-A3360	BC 635	78
Q67120-C520	SAB 80C32-P-T40/85	64	Q68000-A3361	BC 639	78
Q67120-C527	SAB 80C32-16-P40/85	64	Q68000-A3365	BC 636	79
Q67120-C562	SAB 80C535-16-N -T40/85	64	Q68000-A3366	BC 638	79
Q67120-C581	SAB 80C515A-N-18	63	Q68000-A3367	BC 640	79
Q67120-C583	SAB 80C515A-N-18	63	Q68000-A3561	PD 2435	180
Q67120-C590	SAB-R 3000A-25-AE	65	Q68000-A3562	PD 2437	180
Q67120-C593	SAB-R3010A-25-A	65	Q68000-A3867	HLMP 2820	163
Q67120-C709	SAB 80C32-20-P	63	Q68000-A4312	HLMP 2350	163
Q67120-C711	SAB 80C32-20-N	63	Q68000-A4315	HDN 1075 O	151
Q67120-C722	SAB80C537-16-N	63	Q68000-A4317	HDN 1077 O	151
Q67120-C725	SAB 80C537-16-N -T40/85	64	Q68000-A4319	HDN 1105 O5 O	154
Q67120-C769	SAB 80C517A-N18-T3	64	Q68000-A4321	HDN 1107 O	154
Q67120-C772	SAB 80C537-16-N	63	Q68000-A4354	DL 1416 B	168
Q67120-C782	SAB 80C166-S16-T3	64	Q68000-A4357-F114	ILD 2	276
Q67120-C784	SAB 80C515A-N18-T3	64	Q68000-A4358-F114	ILQ 2	276
Q67120-P143	SAB 7201A-P	67	Q68000-A4376-F114	IL 400	267
Q67120-P169	SAB 8259A-N	68	Q68000-A4377-F114	ILD 30	276
Q67120-P176	SAB 82257-N	67	Q68000-A4378-F114	ILD 55	276
Q67120-P245	SAB 82258A-1-N	67	Q68000-A4379-F114	ILQ 30	276
Q67120-P246	SAB 82258A-N	67	Q68000-A4380-F114	ILQ 55	276
Q67120-P247	SAB 82258A-1-A	67	Q68000-A4404	GBG 4850	157
			Q68000-A4407	OBG 4830	157
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Q68000-A4409	YBG 4840	157	Q68000-A6542-F114	ILD 610-3	276
Q68000-A4444	CGY 40	121	Q68000-A6622	BAV 70	73
Q68000-A4468-F114	ILD 610-2	276	Q68000-A7156	DL 1814	168
Q68000-A4505	HLMP 2620	163	Q68000-A7157	DLO 7135	174
Q68000-A4507	HLMP 2450	163	Q68000-A7302	4N 35	267
Q68000-A4508	HLMP 2720	163	Q68000-A7303	4N 36	267
Q68000-A4825	DL 1416 T	168	Q68000-A7304	4N 37	267
Q68000-A5017	4N 26	267	Q68000-A7313	SFH 600-0	256
Q68000-A5018	4N 25	267	Q68000-A7314	SFH 600-1	256
Q68000-A5141	SL 5500	267	Q68000-A7315	SFH 600-2	256
Q68000-A549	BAV 99	73	Q68000-A7318	SFH 601-1	256
Q68000-A5559	DL 1414 T	168	Q68000-A7318-X1	SFH 601-1 Opt. 1	262
Q68000-A5577	DL 2416 T	168	Q68000-A7318-X16	SFH 601-1 Opt. 1+6	262
Q68000-A5646	6N 136	274	Q68000-A7318-X17	SFH 601-1 Opt. 1+7	262
Q68000-A5689	BFR 96S	112	Q68000-A7318-X6	SFH 601-1 Opt. 6	256
Q68000-A5700	LB 5410-HO	133	Q68000-A7318-X7	SFH 601-1 Opt. 7	256
Q68000-A5707	4N 27	267	Q68000-A7319	SFH 601-2	256
Q68000-A5741	HD 1105 R	151	Q68000-A7319-X1	SFH 601-2 Opt. 1	262
Q68000-A5743	HD 1107 R	151	Q68000-A7319-X16	SFH 601-2 Opt. 1+6	262
Q68000-A5746	HD 1075 O	151	Q68000-A7319-X17	SFH 601-2 Opt. 1+7	262
Q68000-A5747	HD 1075 R	151	Q68000-A7319-X6	SFH 601-2 Opt. 6	256
Q68000-A5758	HD 1077 O	151	Q68000-A7319-X7	SFH 601-2 Opt. 7	256
Q68000-A5759	HD 1077 R	151	Q68000-A7320	SFH 601-3	256
Q68000-A5766	HD 1105 O	151	Q68000-A7320-X1	SFH 601-3 Opt. 1	262
Q68000-A5772	HD 1107 O	151	Q68000-A7320-X16	SFH 601-3 Opt. 1+6	262
Q68000-A590	IL 1	267	Q68000-A7320-X17	SFH 601-3 Opt. 1+7	262
Q68000-A5931	IL 5	267	Q68000-A7320-X6	SFH 601-3 Opt. 6	256
Q68000-A5953	CGY 21	121	Q68000-A7320-X7	SFH 601-3 Opt. 7	256
Q68000-A5967	RBG 1000	157	Q68000-A7321	SFH 601-4	256
Q68000-A5968	OBG 1000	157	Q68000-A7321-X1	SFH 601-4 Opt. 1	262
Q68000-A5969	YBG 1000	157	Q68000-A7321-X16	SFH 601-4 Opt. 1+6	262
Q68000-A5970	GBG 1000	157	Q68000-A7321-X17	SFH 601-4 Opt. 1+7	262
Q68000-A5972-F114	ILD 1	276	Q68000-A7321-X6	SFH 601-4 Opt. 6	256
Q68000-A5973-F114	ILD 74	276	Q68000-A7321-X7	SFH 601-4 Opt. 7	256
Q68000-A5974-F114	ILQ 1	276	Q68000-A7159	DLG 7137	174
Q68000-A5993	DL-330 M	157	Q68000-A7775-T	SFH 6106-1T	272
Q68000-A5994	DL-340 M	157	Q68000-A7776-T	SFH 6106-2T	272
Q68000-A5995	DL-430 M	157	Q68000-A7777-T	SFH 6106-3T	272
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Q68000-A8655	SFH 628-3	258			
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