

Packing and Order Information

General Information

Vishay offers LEDs and 7 Segment Displays with several packing options.

Device	Series	Bulk	Tape	Blister Tape	Tube
7 Segment Display	TD..				x
TELUX	TLW.				x
SMD	TLM.3..			x	
Pin Hole LED	TL..	x	x		
Mini	TLM.2..			x	
0603 LED	TLM.1..			x	

All Packing options are classified in terms of brightness (standard), color (optional) or forward voltage (optional). Reference for Parameter Selection Codes is the chapter "Classification of Components", label code is SEL.

Barcode Label Format

Type

- PTC - Assembly Location Code
- SEL - Parameter Selection Code
- DC - Date Code
- BN - Batch Number
- PCS - Quantity
- MN - Machine number

Drypacks

Blister tapes are packed in anti-humidity aluminium bags to prevent the products from moisture absorption during transportation and storage. Each bag contains a desiccant with moisture indicators. In cases of moisture absorption, the indicators change their color from blue to pink.

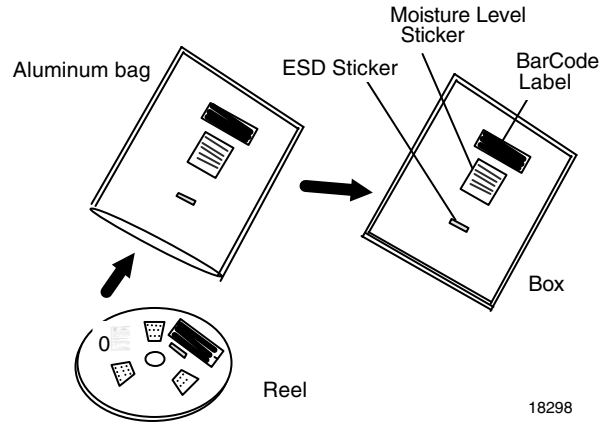
Dry box storage is recommended to prevent the parts from moisture absorption. The following conditions should be preserved if dry boxes are not available.

Storage condition (example for Jedec Level 2, see Table 2 „Assembly Instructions“):


- max. 1 year:
Temperature: 10 to 30 °C Humidity: 60 % RH max
- unlimited:
Temperature: 10 to 30 °C Humidity: 20 % RH max

In case of moisture absorption the device will recover to the former condition by drying under the following recommended conditions:

192 hours at 40 °C + 5 °C and < 5 % RH.



Example:



CAUTION
This bag contains
MOISTURE -SENSITIVE DEVICES

LEVEL

2

1. Shelf life in sealed bag 12 months at <40°C and <90% relative humidity (RH)
2. After this bag is opened devices that will be subjected to infrared reflow, vapor-phase reflow, or equivalent processing (peak package body temp. 220°C) must be:
 - a) Mounted within 1 year at factory condition of ≤ 30°C/60%RH or
 - b) Stored at ≤20% RH.
3. Devices require baking before mounting if:
 - a) Humidity Indicator Card is >20% when read at 23°C ± 5°C or
 - b) 2a or 2b is not met.
4. If baking is required, devices may be baked for:

192 hours at 40°C + 5°C/-0°C and <5%RH (dry air/nitrogen)	or
96 hours at 60±5°C and <5%RH	For all device containers or
24 hours at 100±5°C	Not suitable for reels or tubes

Bag Seal Date: _____ (If blank, see bar code label)

Note: LEVEL defined by EIA JEDEC Standard JESD22-A112

19148

Fan Fold Packing

Fan fold box is the standard containment for Reel, Tube and Bulk. Label Format is identical to packing options as described above. Packing might contain tubes or reels with several Parameter Selection Codes. In this case the label code of Fan Fold Packing is SEL000.

Exception: TELUX fan fold boxes contain one SEL code only.

Minimum Order Quantity

Packing Options describe the smallest physical packing unit. Vishay Sales representatives can provide information on the Minimum Order Quantity per type.



Number of Components

	Quantity	MOQ
3 mm	5000 pcs (bulk)	5000 pcs
5 mm	4000 pcs (bulk)	4000 pcs
3 mm	2000 pcs per reel (5 reels per box)	10000 pcs
5 mm	1000 pcs per reel (5 reels per box)	5000 pcs
3 mm	2000 pcs per ammpack (5 packs per box)	10000 pcs
5 mm	1000 pcs per ammpack (5 packs per box)	5000 pcs
Telux	70 per tube (30 tubes per box)	2100 pcs
Mini	GS08: 3000 pcs per reel	3000 pcs
SMD	GS08: 1500 pcs per reel (5 reels per box)	7500 pcs
	GS18: 8000 pcs per reel	8000 pcs
0603 LED	GS08: 3000 pcs per reel	3000 pcs

Missing Components

Up to 3 consecutive components may be missing if the gap is followed by at least 6 components. A maximum of 0.5 % of the components per reel quantity may be missing. At least 5 empty positions are present at the start and the end of the tape to enable tape insertion.

Tensile strength of the tape: ≥ 15 N

Pulling force in the plane of the tape, at rectangular to the reel: ≥ 5 N

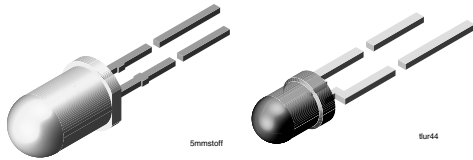
Note:

Shipment in fan-fold packages are standard for radial taped devices.

Shipments in reel packing are only possible if the customer guarantees the removal of empty reels.

According to a German packaging decree (Verpackungsverordnung) we are not able to accept the return of reels.

Specification of Packing Options
Pin Hole LED (TL.. – series)



Reel

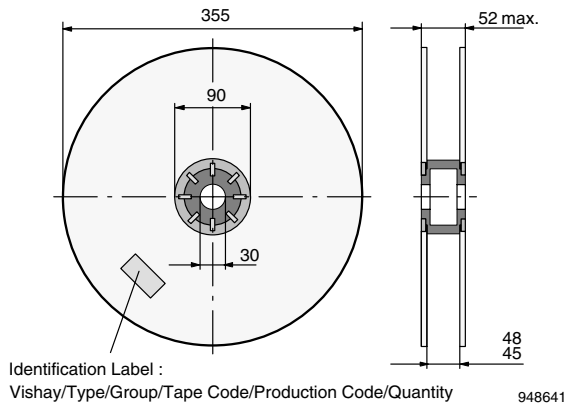


Figure 1. Reel dimensions

Tape

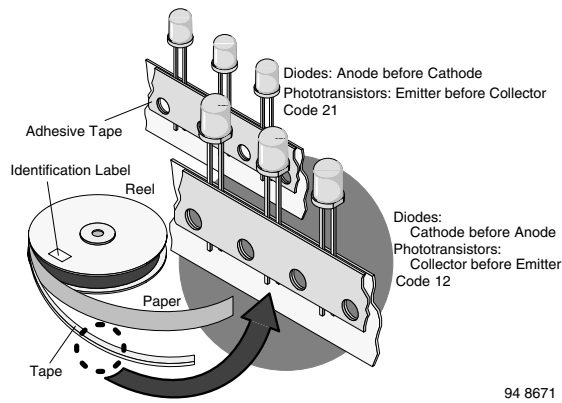


Figure 2. LED in tape

Ammopack

The tape is folded in concertina arrangement and laid in the cardboard box.

If the components are required with the cathode before the anode (figure 4), the start of the tape should be taken from the side of the box marked “-”. If the components are required with the anode before cathode (figure 7), the tape should be taken from the side of the box marked “+”.

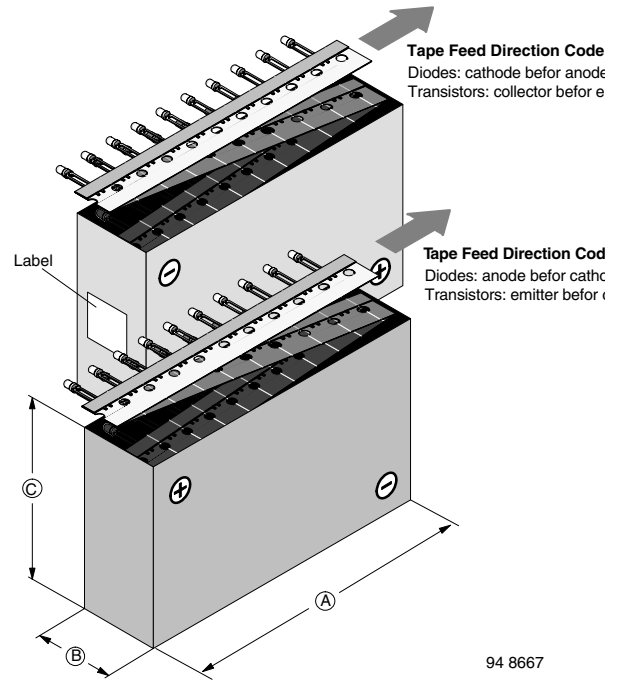


Figure 3. Tape direction

Options

Tape Dimensions for \varnothing 3 mm Standard Packages

Available Package Variations: 12, Z, 21

Option	Dim. "H"	Dim "X"	Preference
AS	17.3 ± 0.5		Standard
VS	18.5 ± 0.5		
KS	19.3 ± 0.5		
BS	20.0 ± 0.5		
LS	21.0 ± 0.5		
CS	22.0 ± 0.5		
MS	25.5 ± 0.5		Standard
BT	20.0 ± 0.5	16.0 ± 0.5	
DT	21.0 ± 0.5	16.0 ± 0.5	
NT	21.5 ± 0.5	16.0 ± 0.5	
GT	24.0 ± 0.5	16.0 ± 0.5	
HT	24.0 ± 0.5	14.5 ± 0.5	
MT	25.5 ± 0.5	16.0 ± 0.5	

Explanation:

- 12 - cathode leaves first
- 21 - anode leaves first
- Z - Ammopack

Order Codes

The type designation of the device is extended by tape option codes.

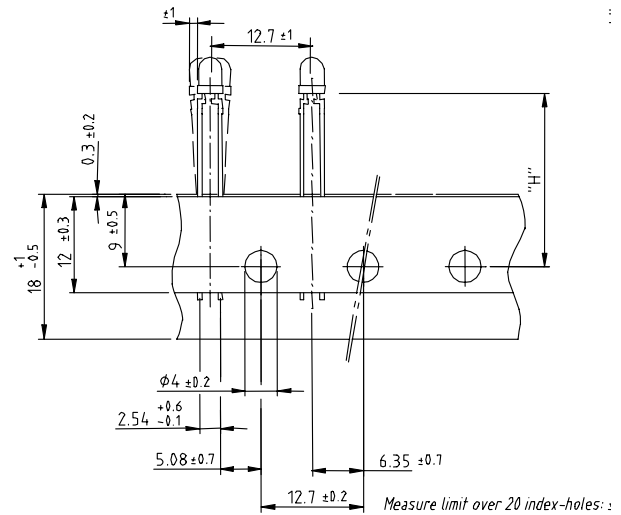
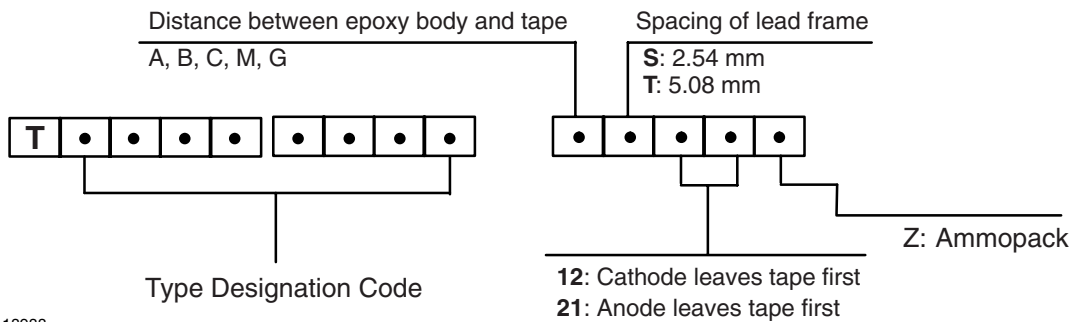


Figure 4. Tape dimensions \varnothing 3 mm devices



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Figure 5. Taping code

Example: TLME3100-GS08
 TLHE4200-AS21
 TLHE4200-AS12Z
 optional since 1999:
 TLMS3100-GS18

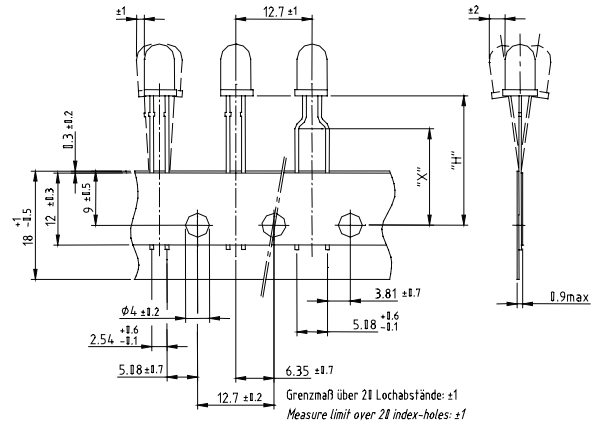
Tape Dimensions for \varnothing 5 mm Standard Packages

Available Package Variations: 12, Z, 21

Option	Dim. "H"	Dim "X"	Preference
AS	17.3 ± 0.5		Standard
KS	19.3 ± 0.5		
LS	21.0 ± 0.5		
CS	22.0 ± 0.5		Standard
MS	25.5 ± 0.5		
BT	20.0 ± 0.5	16.0 ± 0.5	
DT	21.0 ± 0.5	16.0 ± 0.5	
NT	21.5 ± 0.5	16.0 ± 0.5	
GT	24.0 ± 0.5	16.0 ± 0.5	
HT	24.0 ± 0.5	14.5 ± 0.5	
MT	25.5 ± 0.5	16.0 ± 0.5	

Explanation:

- 12 - cathode leaves first
- 21 - anode leaves first
- Z - Ammopack



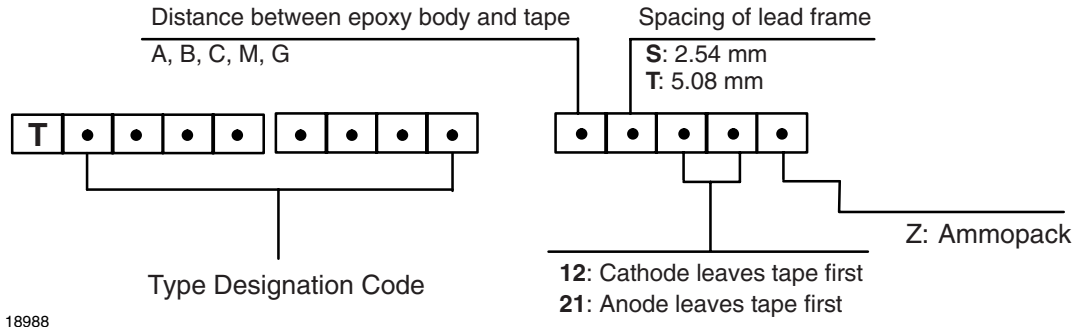
Quantity per:	Ammopack/Reel (Mat.-No. 1764)
	1000

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Figure 6. Tape dimensions \varnothing 5 mm devices

Order Codes

The type designation of the device is extended by tape option codes.



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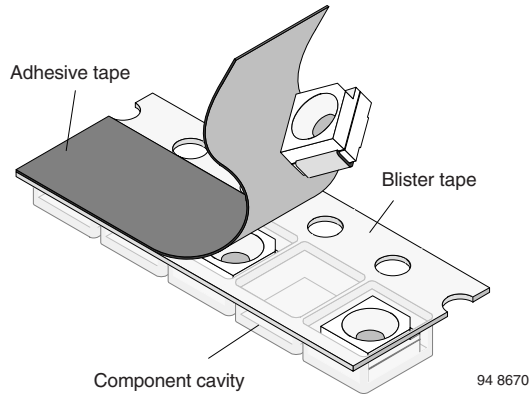
Figure 7. Taping code

Example: TLME3100-GS08
 TLHE4200-AS21
 TLHE4200-AS12Z
 optional since 1999:
 TLMS3100-GS18

Vishay Semiconductors

SMD LED (TLM3 – series)

Vishay's LEDs in SMD packages are available in an antistatic 8 mm blister tape (in accordance with DIN IEC 40 (CO) 564) for automatic component insertion. The blister tape is a plastic strip with impressed component cavities, covered by a top tape.



Taping of TLM3..

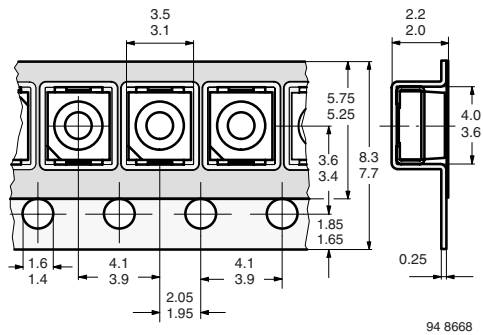


Figure 8. Tape dimensions in mm for PLCC-2

Taping of TLMD3100

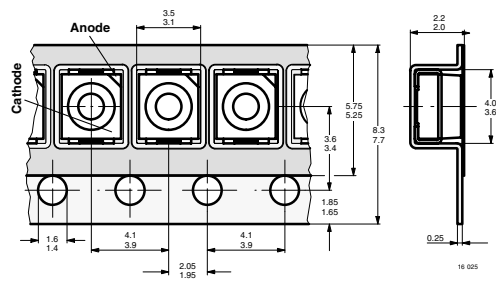


Figure 9. Tape dimensions in mm for PLCC-2

Reel Package dimension in mm for SMD LEDs, tape option GS08 (= 1500 pcs.)

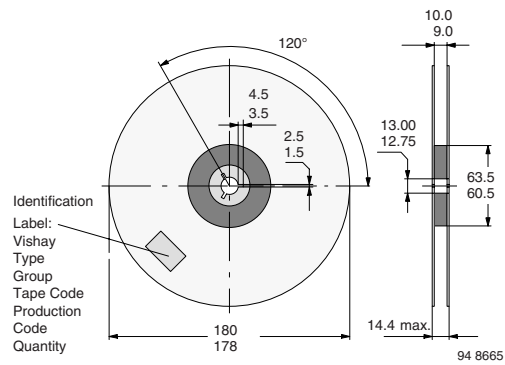


Figure 10. Reel dimensions - GS08

Reel Package dimension in mm for SMD LEDs, tape option GS18 (= 8000 pcs.) preferred

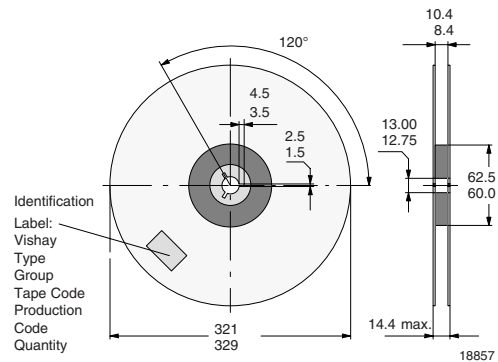
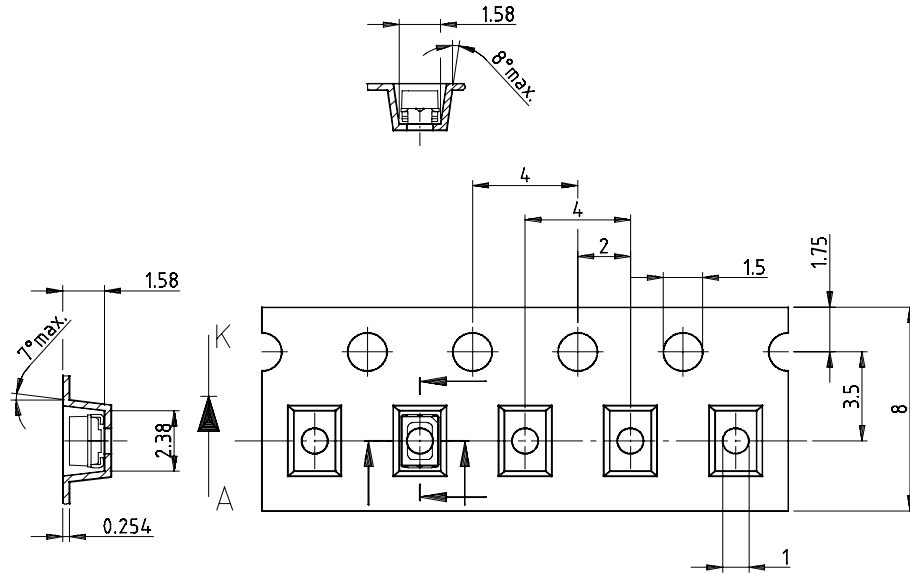


Figure 11. Reel dimensions - GS18

Tape Dimensions MiniLEDs



Drawing-No.: 9.700-5266.01-4
 Issue: 1; 05.06.02
 16939

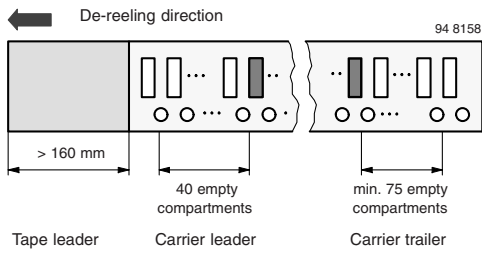
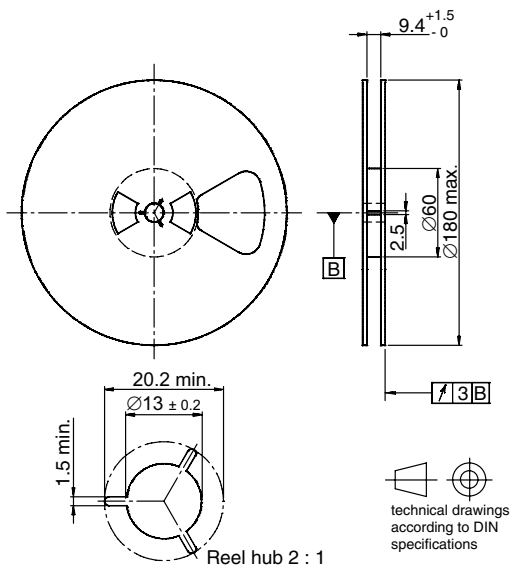


Figure 12. Beginning and end of reel

Reel Dimensions



Drawing-No.: 9.800-5051.V5-4
Issue:1, 25.07.02

19002

Missing Devices

A maximum of 0.5 % of the total number of components per reel may be missing, excluding missing components at the beginning and at the end of the reel. A maximum of three consecutive components may be missing, provided this gap is followed by six consecutive components.

The tape leader is at least 160 mm and is followed by a carrier tape leader with at least 40 empty compartments. The tape leader may include the carrier tape as long as the cover tape is not connected to the carrier tape.

The last component is followed by a carrier tape trailer with at least 75 empty compartments and sealed with cover tape.

Top Tape Removal Force

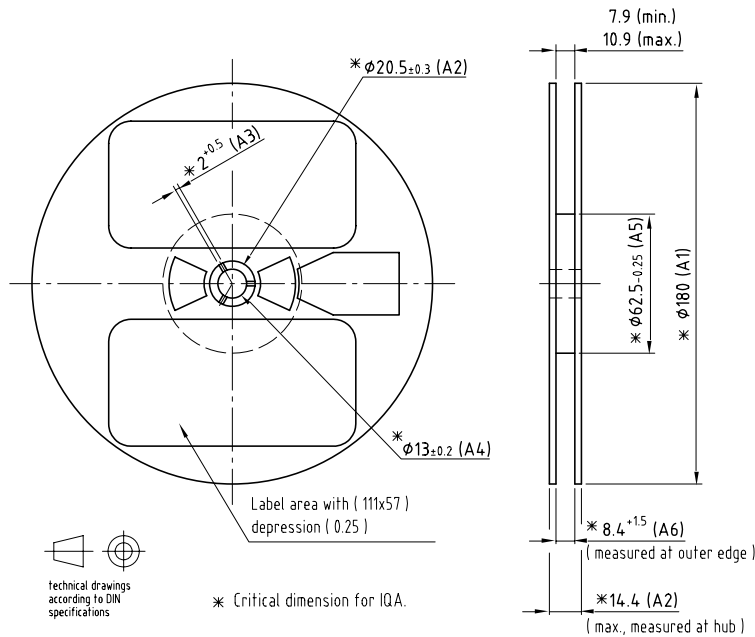
The removal force lies between 0.1 N and 1.0 N at a removal speed of 5 mm/s.

In order to prevent components from popping out of the blisters, the cover tape must be pulled off at an angle of 180 °C with regard to the feed direction.

Order Codes

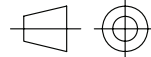
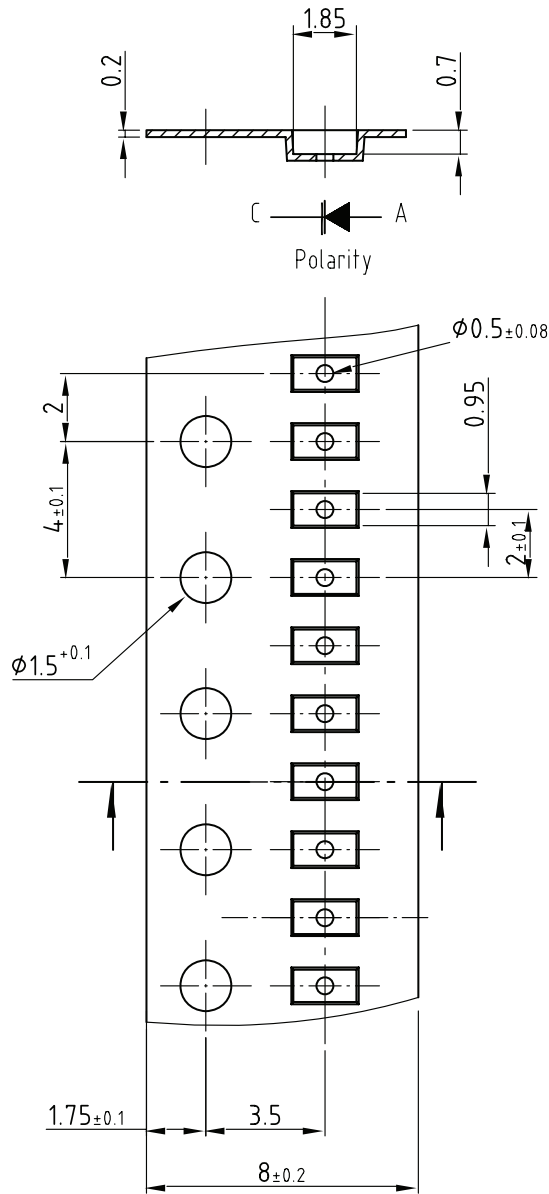
Example: TLMB3100–GS08

Tape and Reel Dimensions TLM.11.. 0603 LED



Drawing-No.: 9.800-5086.01-4
Issue: 1; 29.04.04
19043

Not indicated tolerances ±0.05
Material: black static dissipative



technical drawings
according to DIN
specifications

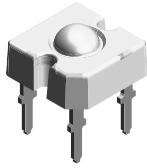
Not indicated tolerances ± 0.05
Material: Conductive black PC

Drawing-No.: 9.700-5290.01-4

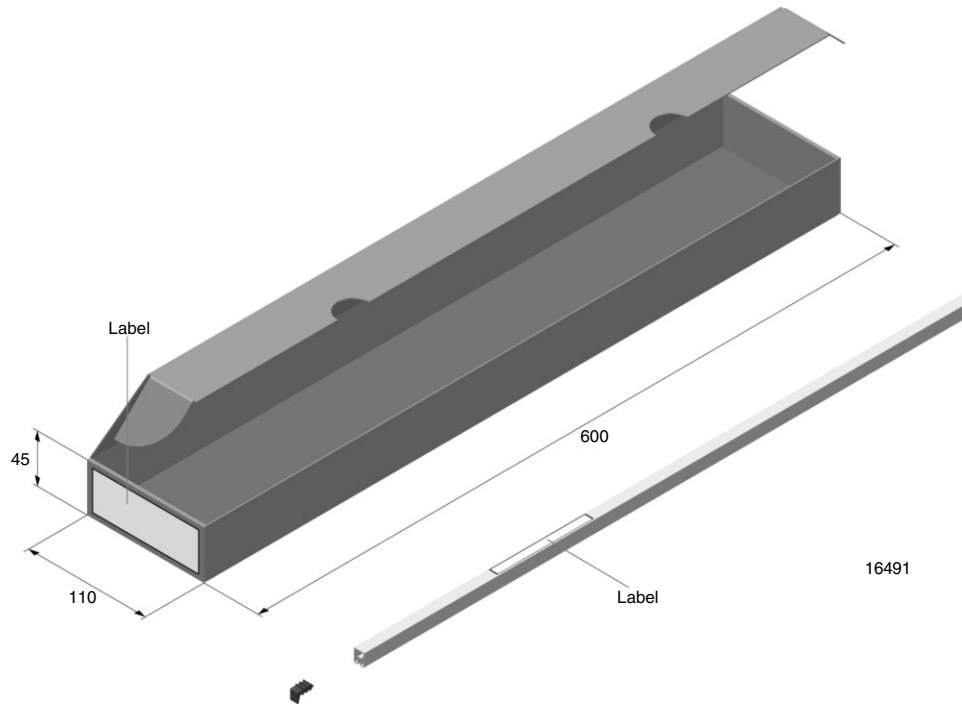
Issue: 2; 10.07.06

19044

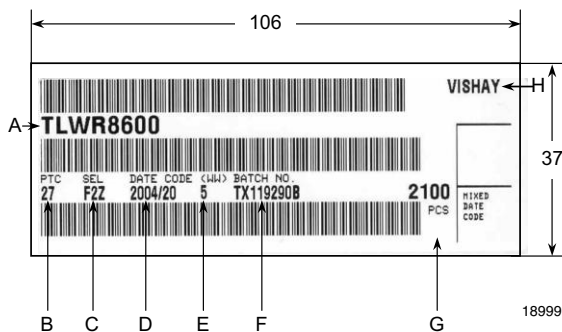
TELUX™



Fan Fold Box



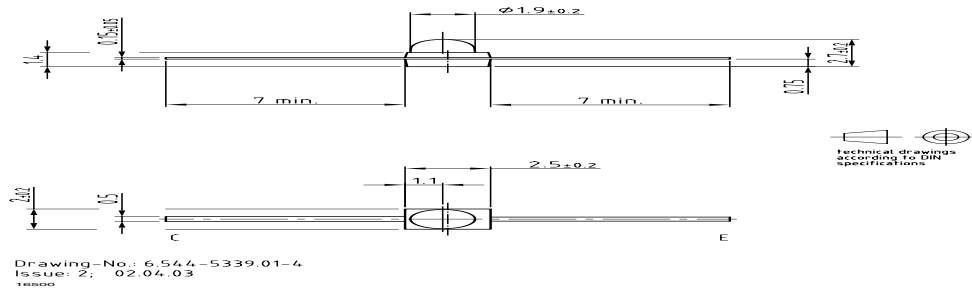
Label of Fan Fold Box



- A) Type of component
- B) Manufacturing plant
- C) SEL – Selection Code (Bin)
Digit 1 – code for Luminous Flux group
Digit 2 – code for Dominant Wavelengthgroup
Digit 3 – code for Forward Voltage group
- D) Date Code year/week
- E) Day Code (e. g. 5: Friday)
- F) Batch No.
- G) Total quantity
- H) Company code

Note: Any distance between bar code and character is more than 1mm.

Example for TELUX tube label



- A) Bar code
- B) Type of component
- C) Manufacturing plant
- D) SEL – Selection code (Bin)
- Digit1 – code for Luminous Flux group
- Digit2 – code for Dominant Wavelength group
- Digit3 – code for Forward Voltage group
- E) Date code
- F) Batch No.
- G) Total quantity
- H) Company code

Tube with Bar code label

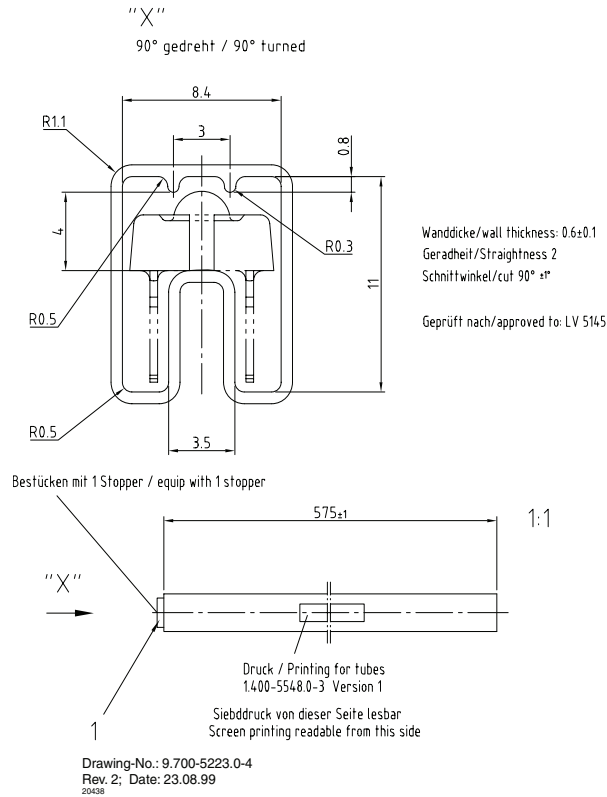


Figure 13. Drawing proportions not scaled