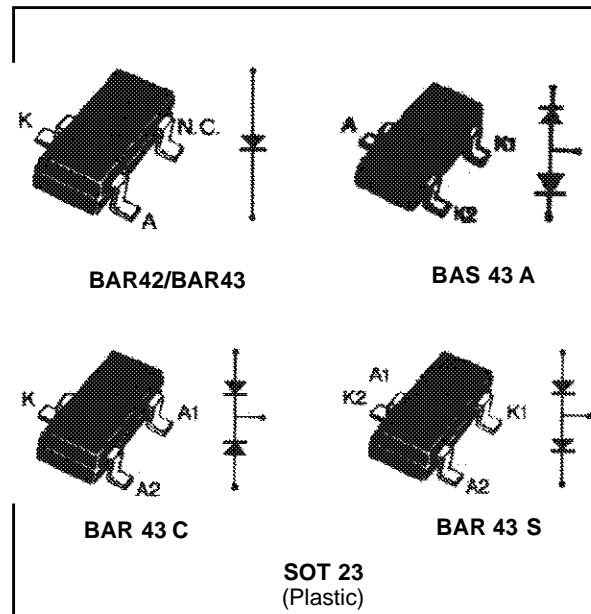


SMALL SIGNAL SCHOTTKY DIODES



**DESCRIPTION**

General purpose metal to silicon diodes featuring very low turn-on voltage and fast switching.

**ABSOLUTE RATINGS** (limiting values) ( $T_{amb} = 25^{\circ}\text{C}$ ) (see note 1)

Symbol	Parameter	Value	Unit
$V_{RRM}$	Repetitive Peak Reverse Voltage	30	V
$I_F$	Forward Current	100	mA
$I_{FRM}$	Repetitive Peak Forward Current	350	mA
$I_{FSM}$	Surge non Repetitive Forward Current	750	A
$P_{tot}$	Power Dissipation* (see note 2)	160	mW
$T_{stg}$ $T_j$	Storage and Junction Temperature Range	- 55 to + 150 - 55 to + 125	$^{\circ}\text{C}$ $^{\circ}\text{C}$

**THERMAL RESISTANCE** (see note 3)

Symbol	Test Conditions	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	625	$^{\circ}\text{C/W}$
$R_{th(j-SR)}$	Junction-substrate	400	$^{\circ}\text{C/W}$

\* Mounted on ceramic substrate: 7 x 5 x 0.5mm.

**Notes:** 1 For double diodes maximum ratings apply to each diode, provided that rated  $P_{tot}$  is not exceeded.

2 For double diodes  $P_{tot}$  is the total power dissipation of the two diodes.

3 For double diodes,  $R_{th}$  refer to the total power dissipation in the two diodes and is given independently of the power distribution in the two diodes.

**ELECTRICAL CHARACTERISTICS**

**STATIC CHARACTERISTICS**

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{BR}$	$T_{amb} = 25^{\circ}C$	$I_R = 100\mu A$		30			V
$V_F$	$T_{amb} = 25^{\circ}C$	BAT 42	$I_F = 10\text{ mA}$		0.35	0.4	V
			$I_F = 50\text{ mA}$		0.5	0.65	
		BAT 43	$I_F = 2\text{ mA}$	0.26		0.33	
			$I_F = 15\text{ mA}$			0.45	
		All	$I_F = 100\text{ mA}$			1	
$I_R$	$T_{amb} = 25^{\circ}C$	$V_R = 25V$				500	nA
	$T_{amb} = 100^{\circ}C$					100	$\mu A$

**DYNAMIC CHARACTERISTICS**

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25^{\circ}C$	$V_R = 1V$	$f = 1MHz$		7		pF
trr	$T_{amb} = 25^{\circ}C$ $I_{rr} = 1mA$	$I_F = 10\text{ mA}$ $R_L = 100\ \Omega$	$I_R = 10\text{ mA}$			5	ns
$\eta^*$	$T_{amb} = 25^{\circ}C$ $F = 45Mhz$	$R_L = 50\text{ K}\Omega$ $V_i = 2V$	$C_L = 300\text{ pF}$ for BAR 43	80			%

\* Detection efficiency.

Figure 1. Forward current versus forward voltage at different temperatures (typical values).

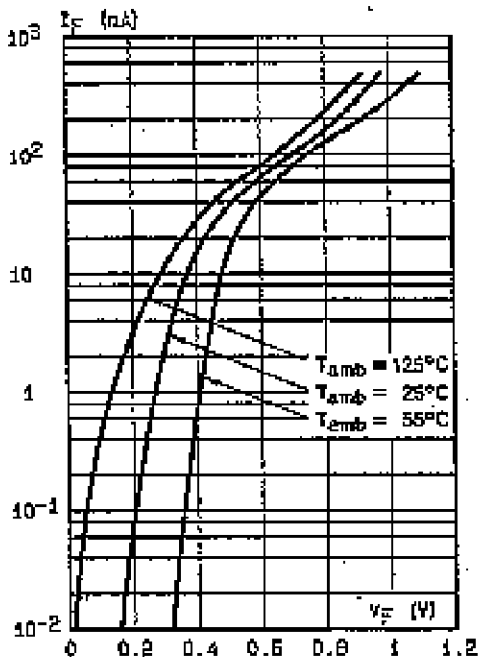


Figure 2. Forward current versus forward voltage (typical values).

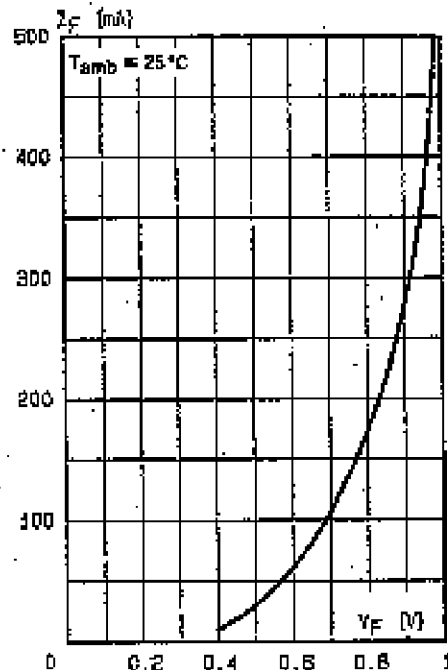


Figure 3. Reverse current versus junction temperature (typical values).

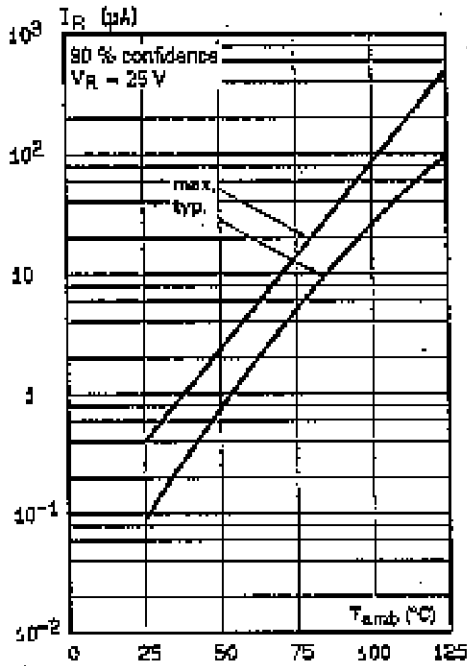


Figure 4. Reverse current versus continuous reverse voltage.

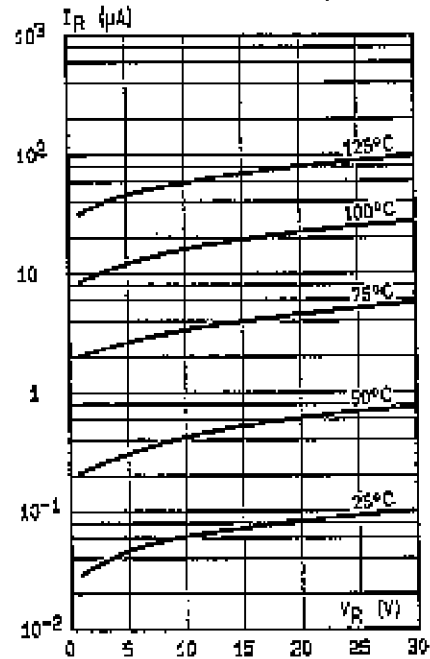
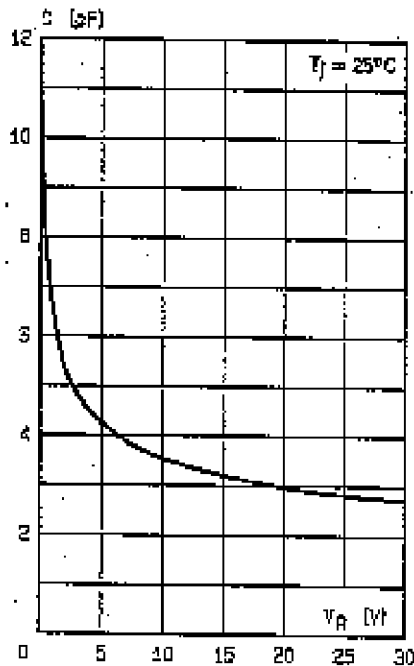


Figure 5. Capacitance C versus reverse applied voltage  $V_R$  (typical values).

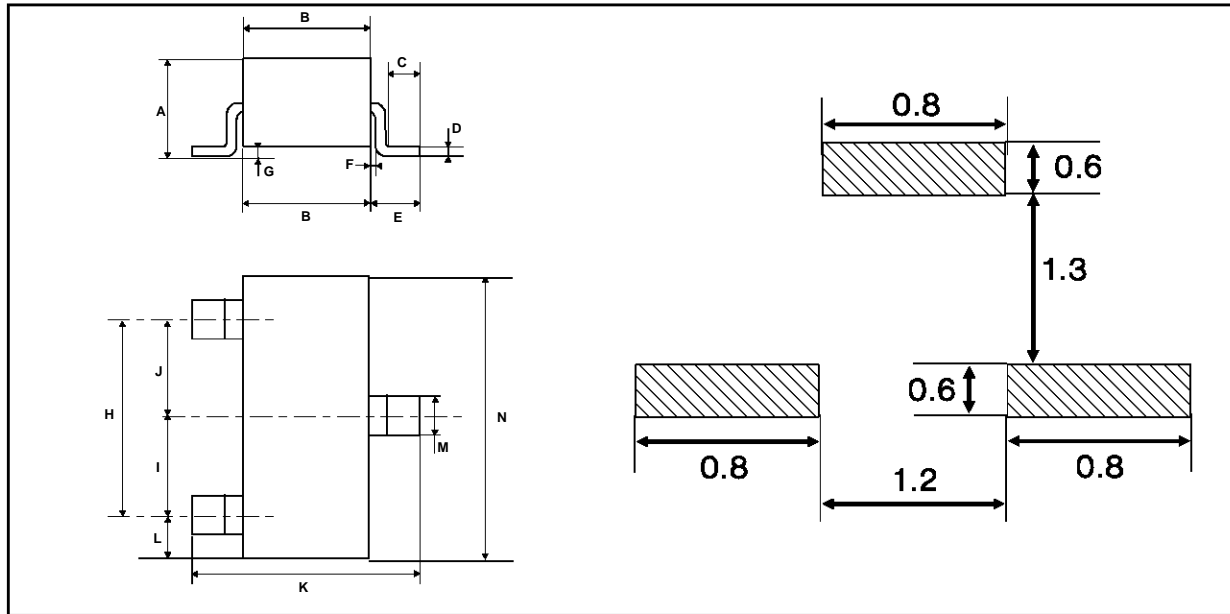


# BAR 42/BAR 43, A, C, S

## PACKAGE MECHANICAL DATA

## FOOT PRINT DIMENSIONS (Millimeter)

SOT 23 (Plastic)



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.93	1.04	0.036	0.041
B	1.20	1.40	0.047	0.055
C	0.15		0.006	
D	0.085	0.115	0.003	0.005
E	0.45	0.60	0.018	0.024
F	0.08		0.003	
G	0.013	0.10	0.0005	0.004
H	1.90	2.05	0.075	0.081
I	0.95	1.05	0.037	0.041
J	0.95	1.05	0.037	0.041
K	2.10	2.50	0.083	0.098
L	0.45	0.60	0.018	0.024
M	0.37	0.46	0.015	0.018
N	2.80	3.00	0.110	0.118

Type	BAR 42	BAR 43	BAR 43A	BAR 43C	BAR 43S
Marking	D94	D95	DB1	DB2	DA5

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