

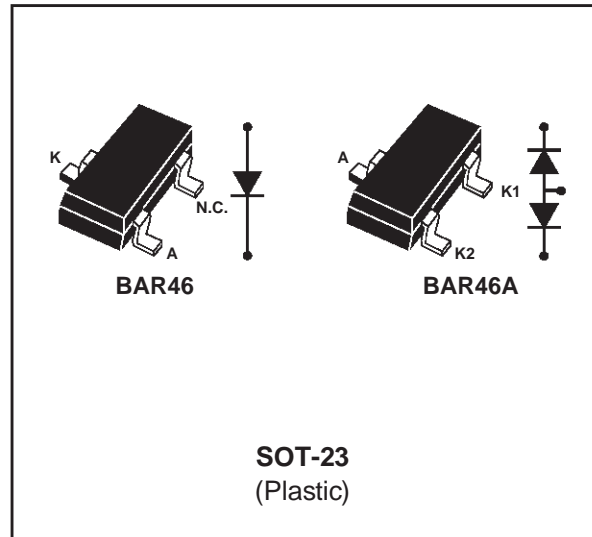
SMALL SIGNAL SCHOTTKY DIODES

FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- SURFACE MOUNT DEVICE

DESCRIPTION

High voltage Schottky rectifier suited for SLIC protection during the card insertion operation.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive peak reverse voltage		100	V
I_F	Continuous forward current		150	mA
P_{tot}	Power dissipation (note 1)	$T_{amb} = 25^\circ\text{C}$	230	mW
T_{stg}	Maximum storage temperature range		- 65 to +150	$^\circ\text{C}$
T_j	Maximum operating junction temperature *		150	$^\circ\text{C}$
T_L	Maximum temperature for soldering during 10s		260	$^\circ\text{C}$

Note 1: for double diodes, P_{tot} is the total dissipation of both diodes.

* : $\frac{dP_{tot}}{dT_j} < \frac{1}{R_{th(j-a)}}$ thermal runaway condition for a diode on its own heatsink

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient *	500	$^\circ\text{C/W}$

* Mounted on epoxy board, with recommended pad layout.

BAR46 /BAR46A

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test conditions		Min.	Typ.	Max.	Unit
V_{BR}	$T_j = 25\text{ °C}$	$I_R = 100\text{ }\mu\text{A}$	100			V
V_F^*	$T_j = 25\text{ °C}$	$I_F = 0.1\text{ mA}$			0.25	V
	$T_j = 25\text{ °C}$	$I_F = 10\text{ mA}$			0.45	
	$T_j = 25\text{ °C}$	$I_F = 250\text{ mA}$			1	
I_R^{**}	$T_j = 25\text{ °C}$	$V_R = 1.5\text{ V}$			0.5	μA
	$T_j = 60\text{ °C}$				5	
	$T_j = 25\text{ °C}$	$V_R = 10\text{ V}$			0.8	
	$T_j = 60\text{ °C}$				7.5	
	$T_j = 25\text{ °C}$	$V_R = 50\text{ V}$			2	
	$T_j = 60\text{ °C}$				15	
	$T_j = 25\text{ °C}$	$V_R = 75\text{ V}$			5	
	$T_j = 60\text{ °C}$				20	

Pulse test : * $t_p = 380\text{ }\mu\text{s}$ $\delta < 2\%$

** $t_p = 5\text{ ms}$, $\delta < 2\%$

DYNAMIC CHARACTERISTICS

Symbol	Test conditions			Min.	Typ.	Max.	Unit
C	$T_j = 25\text{ °C}$	$V_R = 0\text{ V}$	F = 1MHz		10		pF
	$T_j = 25\text{ °C}$	$V_R = 1\text{ V}$			6		

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

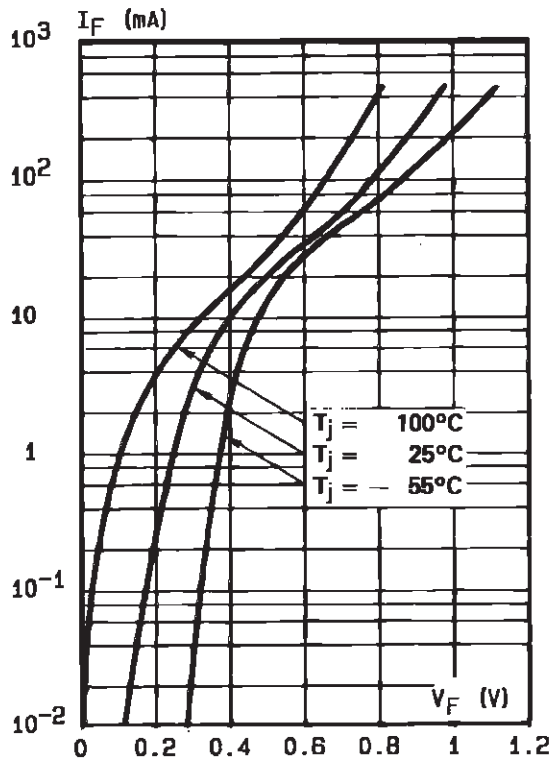


Fig. 2: Forward current versus forward voltage (typical values).

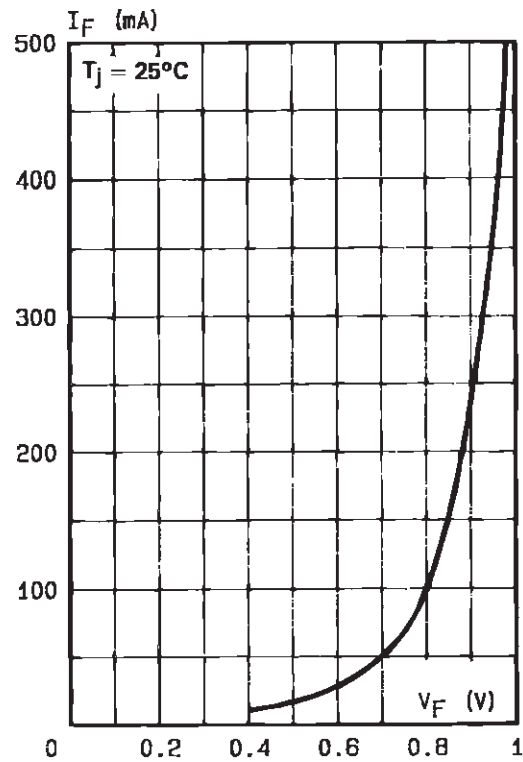


Fig. 3: Reverse current versus junction temperature (typical values).

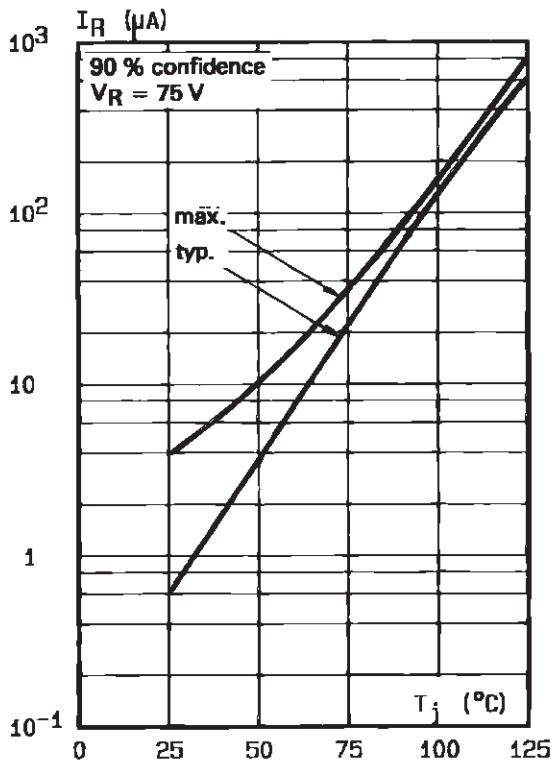


Fig. 4: Reverse current versus continuous reverse voltage (typical values).

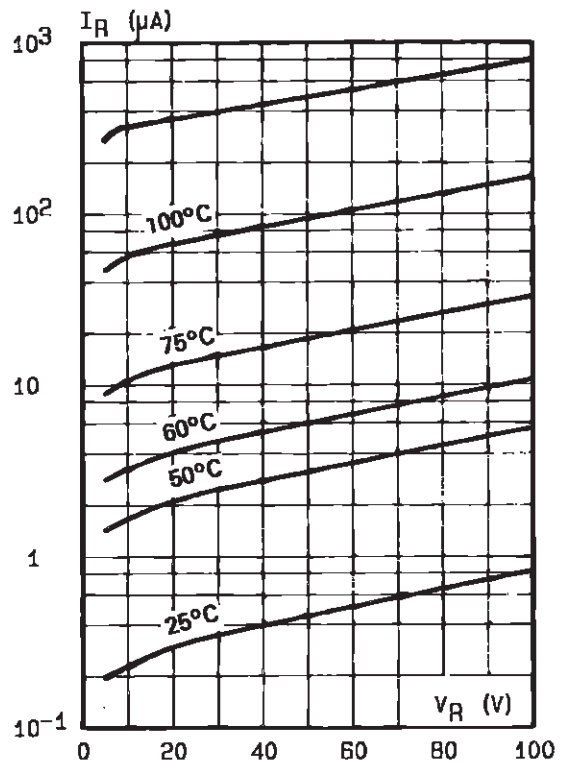
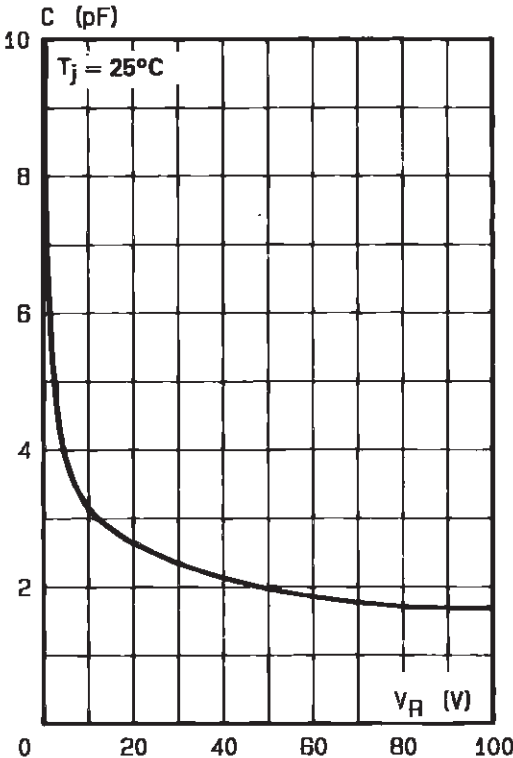
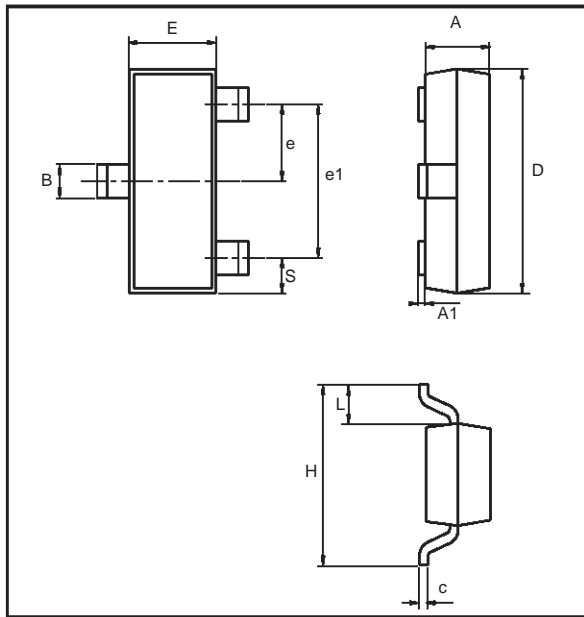


Fig. 5: Capacitance C versus reverse applied voltage V_R (typical values).



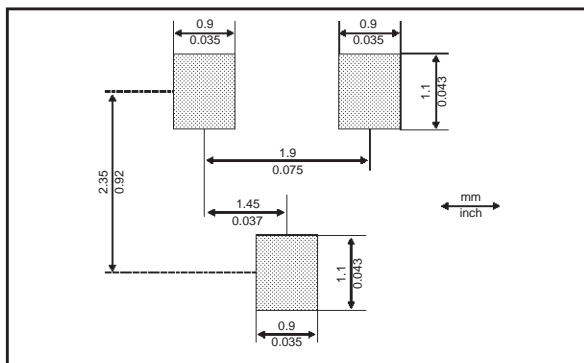
PACKAGE MECHANICAL DATA

SOT 23 (Plastic)



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.89	1.4	0.035	0.055
A1	0	0.1	0	0.004
B	0.3	0.51	0.012	0.02
c	0.085	0.18	0.003	0.007
D	2.75	3.04	0.108	0.12
e	0.85	1.05	0.033	0.041
e1	1.7	2.1	0.067	0.083
E	1.2	1.6	0.047	0.063
H	2.1	2.75	0.083	0.108
L	0.6 typ.		0.024 typ.	
S	0.35	0.65	0.014	0.026

FOOT PRINT DIMENSIONS (Millimeter)



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
BAR46	S46	SOT-23	0.01g	3000	Tape & reel
BAR46A	A46	SOT-23	0.01g	3000	Tape & reel

■ Epoxy meets UL94,V0

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