



# BAR46 BAR46AFILM

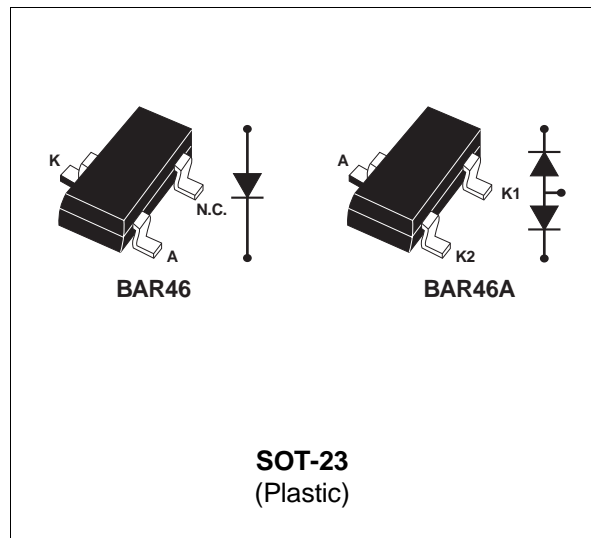
## SMALL SIGNAL SCHOTTKY DIODES

### 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	$^\circ\text{C}/\text{W}$

\* Mounted on epoxy board, with recommended pad layout.

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### 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	$\mu\text{A}$
	$T_j = 60\text{ °C}$				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	

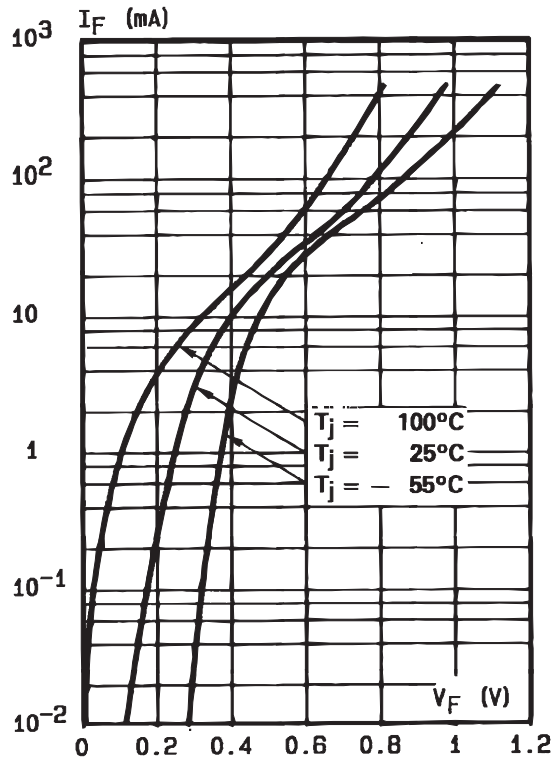
Pulse test : \*  $t_p = 380\mu\text{s}$   $\delta < 2\%$

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

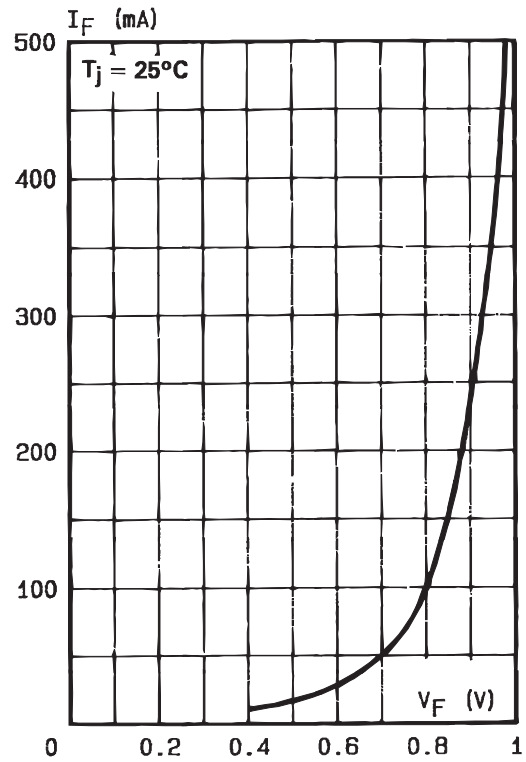
#### DYNAMIC CHARACTERISTICS

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

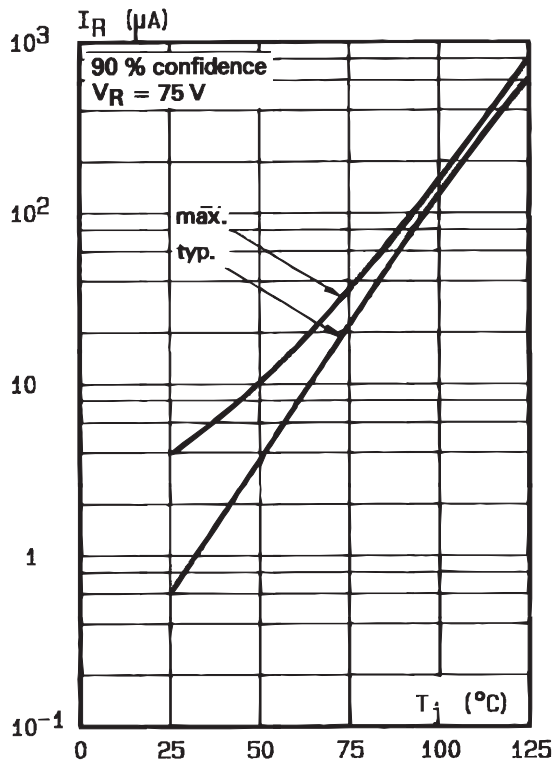
**Fig. 1:** Forward current versus forward voltage at different temperatures (typical values).



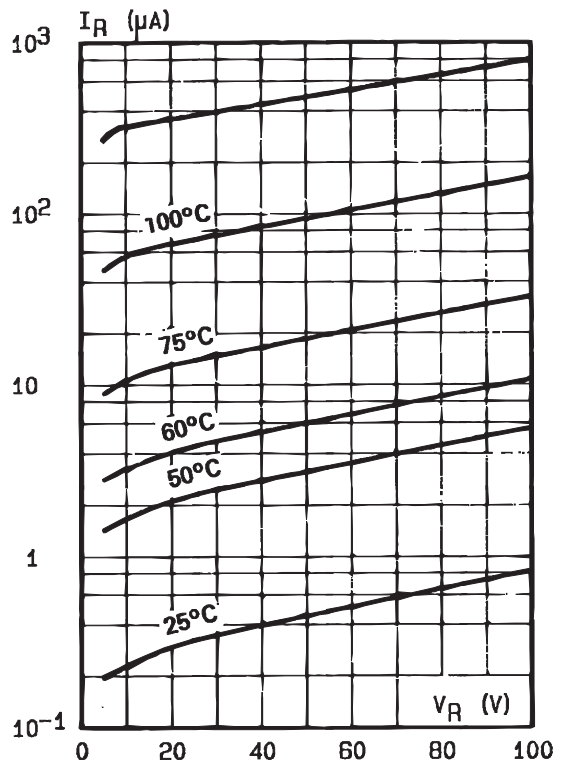
**Fig. 2:** Forward current versus forward voltage (typical values).



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



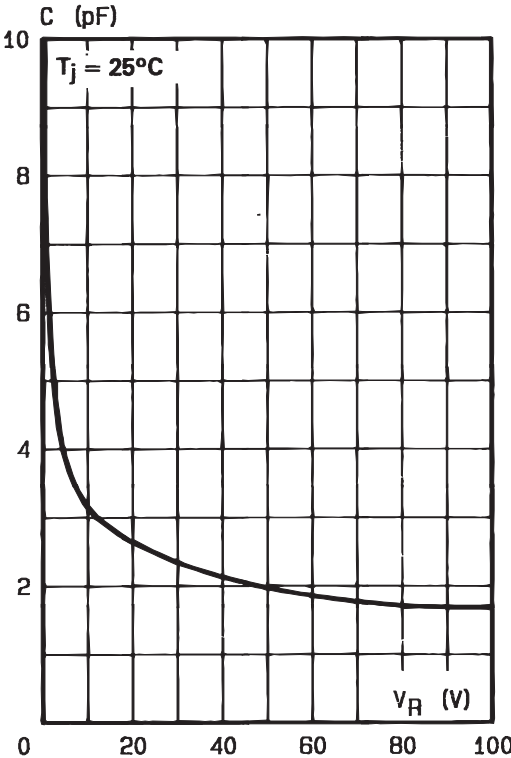
**Fig. 4:** Reverse current versus continuous reverse voltage (typical values).



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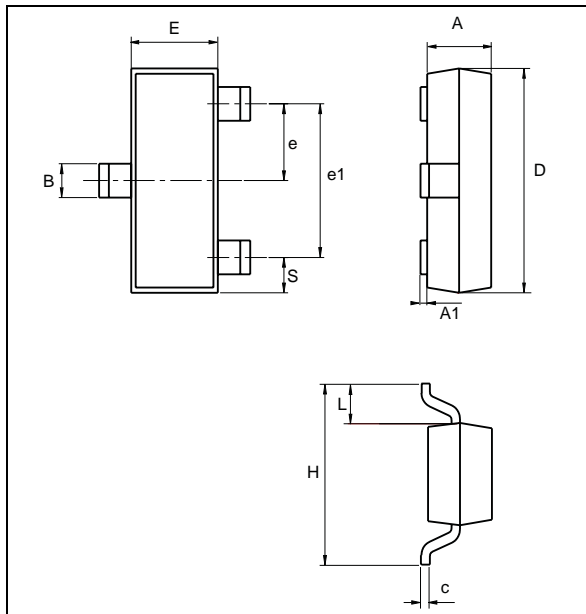
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**Fig. 5:** Capacitance C versus reverse applied voltage  $V_R$  (typical values).



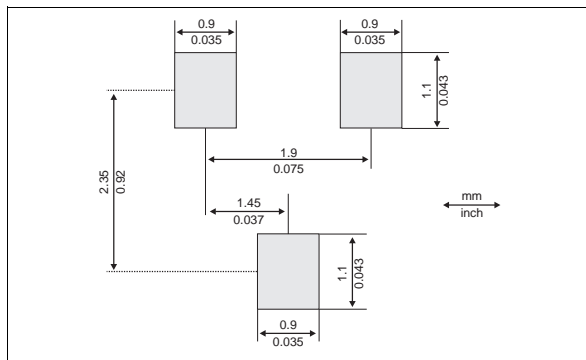
**PACKAGE MECHANICAL DATA**

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
BAR46AFILM	A46	SOT-23	0.01g	3000	Tape & reel

■ Epoxy meets UL94,V0

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