



# BAT46J / BAT46W BAT46AW / BAT46CW / BAT46SW

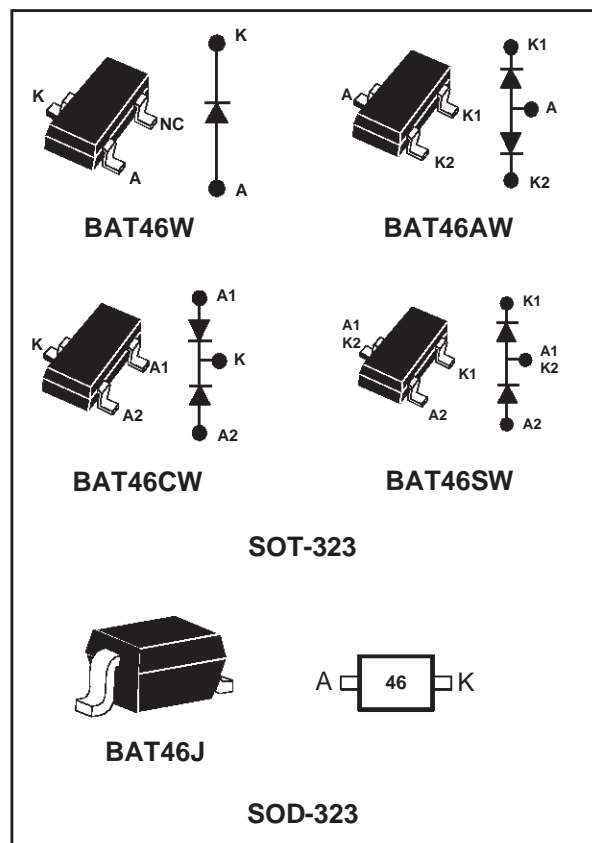
## SMALL SIGNAL SCHOTTKY DIODE

### 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) $T_{amb} = 25^\circ\text{C}$	SOT-323	230	mW
		SOT-323		
$T_{stg}$	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 the both diodes.

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

**BAT46J / BAT46W / BAT46AW / BAT46CW / BAT46SW****THERMAL RESISTANCE**

Symbol	Parameters		Value	Unit
R <sub>th(j-a)</sub>	Junction to ambient (*)	SOD-323	550	°C/W
		SOT-323		°C/W

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

**STATIC ELECTRICAL CHARACTERISTICS**

Symbol	Test conditions		Min.	Typ.	Max.	Unit
V <sub>BR</sub>	T <sub>j</sub> = 25 °C	I <sub>R</sub> = 100 μA	100			V
V <sub>F</sub> *	T <sub>j</sub> = 25 °C	I <sub>F</sub> = 0.1 mA			0.25	V
	T <sub>j</sub> = 25 °C	I <sub>F</sub> = 10 mA			0.45	
	T <sub>j</sub> = 25 °C	I <sub>F</sub> = 250 mA			1	
I <sub>R</sub> **	T <sub>j</sub> = 25 °C	V <sub>R</sub> = 1.5 V			0.5	μA
	T <sub>j</sub> = 60 °C				5	
	T <sub>j</sub> = 25 °C	V <sub>R</sub> = 10 V			0.8	
	T <sub>j</sub> = 60 °C				7.5	
	T <sub>j</sub> = 25 °C	V <sub>R</sub> = 50 V			2	
	T <sub>j</sub> = 60 °C				15	
	T <sub>j</sub> = 25 °C	V <sub>R</sub> = 75 V			5	
	T <sub>j</sub> = 60 °C				20	

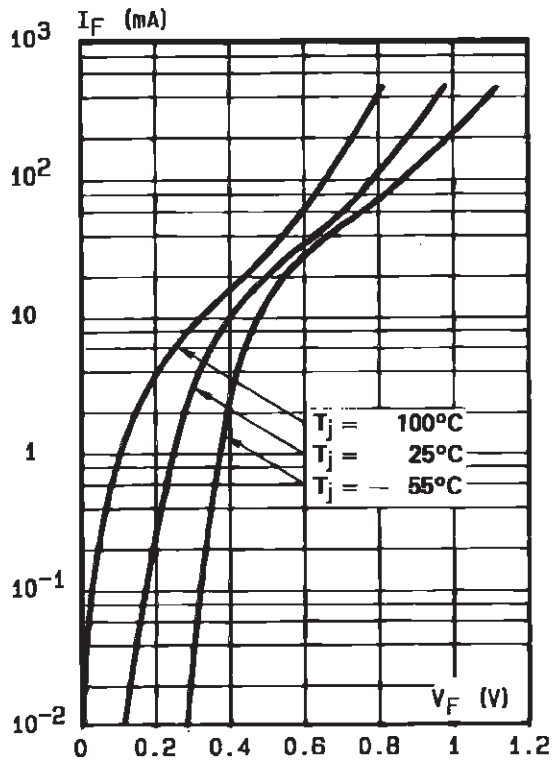
Pulse test : \* tp = 380 μs δ < 2%

\*\* tp = 5ms, δ < 2%

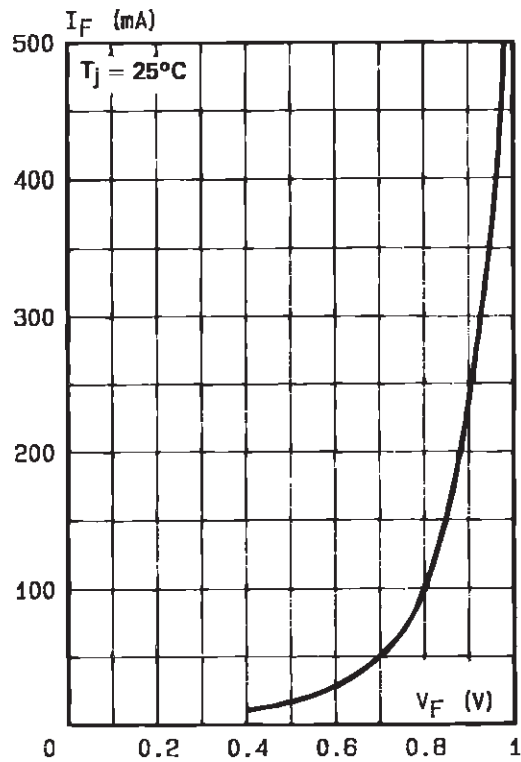
**DYNAMIC CHARACTERISTICS**

Symbol	Test conditions			Min.	Typ.	Max.	Unit
C	T <sub>j</sub> = 25 °C	V <sub>R</sub> = 0 V	F = 1MHz		10		pF
	T <sub>j</sub> = 25 °C	V <sub>R</sub> = 1 V			6		

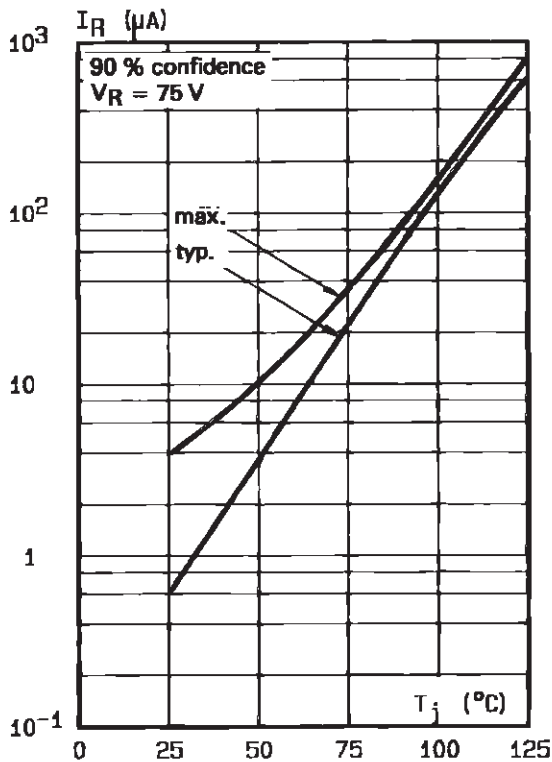
**Fig. 1:** Forward current versus forward voltage at different temperatures (typical values).



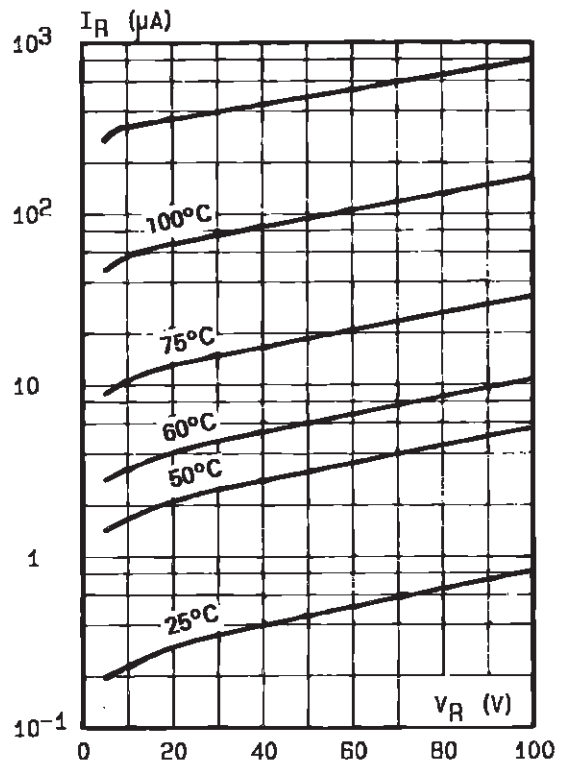
**Fig. 2:** Forward current versus forward voltage (typical values).



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

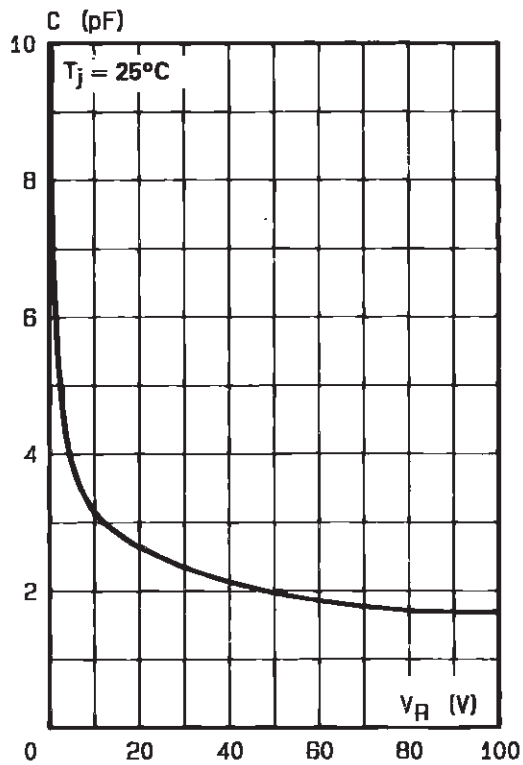


**Fig. 4:** Reverse current versus continuous reverse voltage (typical values).

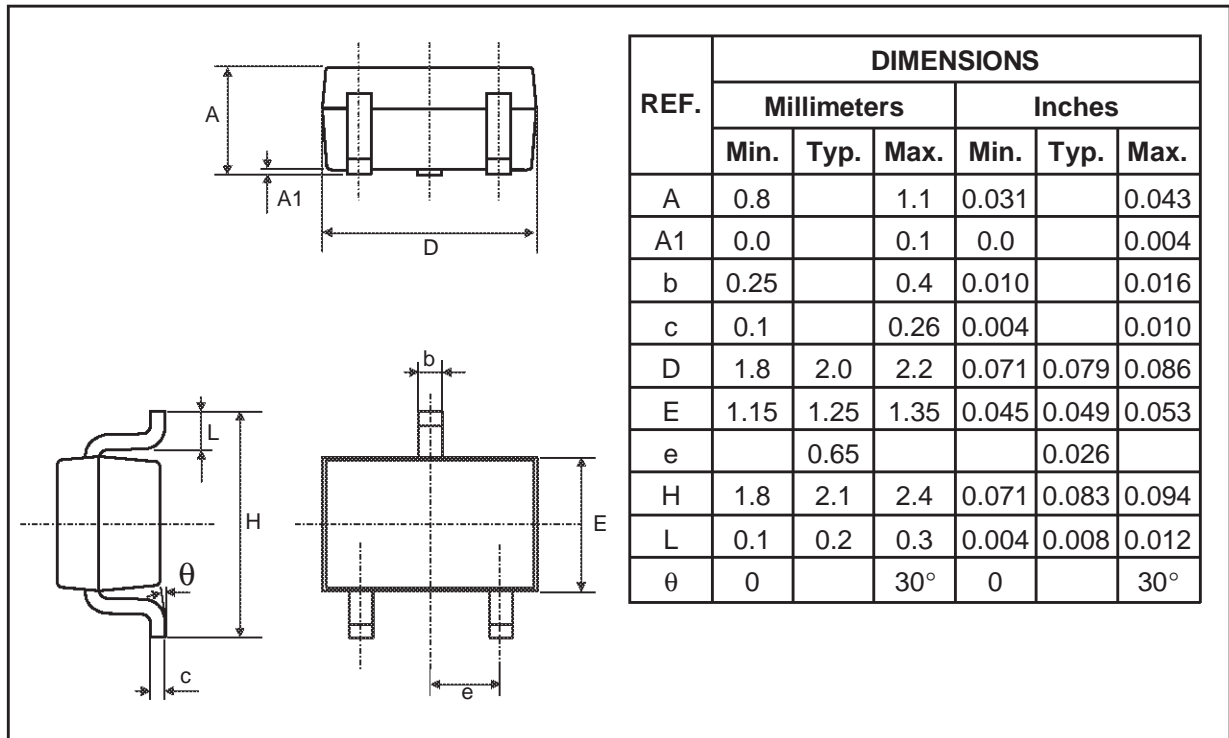


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**Fig. 5:** Capacitance C versus reverse applied voltage  $V_R$  (typical values).

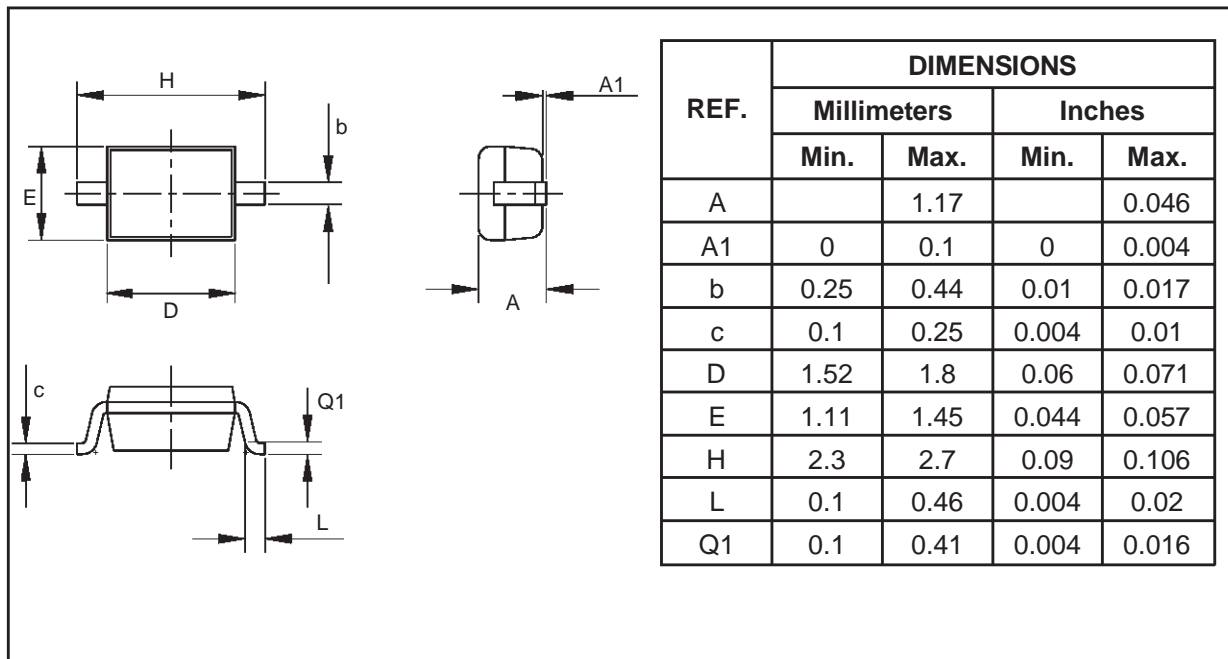


**PACKAGE MECHANICAL DATA**  
SOT-323



**BAT46J / BAT46W / BAT46AW / BAT46CW / BAT46SW**

**PACKAGE MECHANICAL DATA**  
SOD-323



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
BAT46W	D46	SOT-323	0.006g	3000	Tape & reel
BAT46AW	DB6	SOT-323	0.006g	3000	Tape & reel
BAT46CW	TBD	SOT-323	0.006g	3000	Tape & reel
BAT46SW	TBD	SOT-323	0.006g	3000	Tape & reel
BAT46J	46	SOD-323	0.005g	3000	Tape & reel

■ Epoxy meets UL94,V0

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