



# BAT46J / BAT46W BAT46AW / BAT46CW / BAT46SW

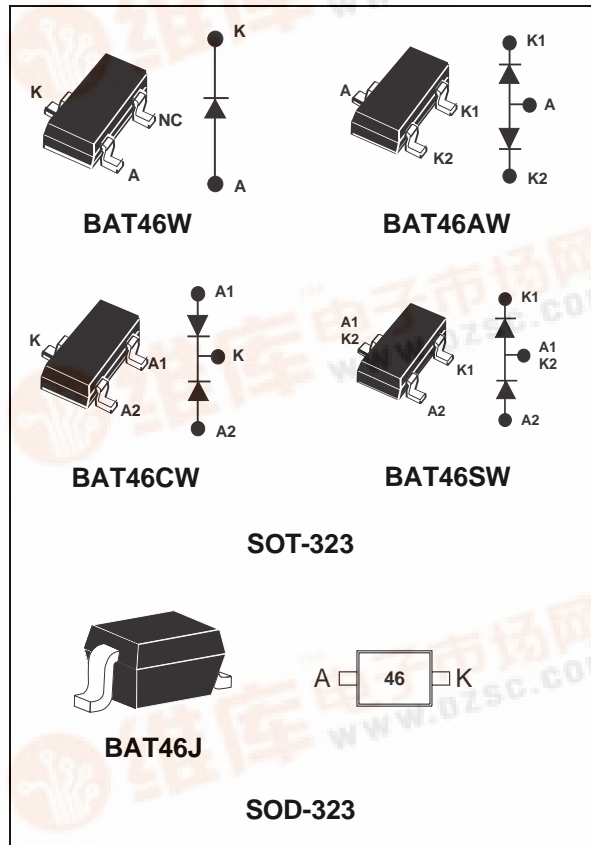
## SMALL SIGNAL SCHOTTKY DIODE

### 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 <sub>RRM</sub>	Repetitive peak reverse voltage	100	V
I <sub>F</sub>	Continuous forward current	150	mA
P <sub>tot</sub>	Power dissipation (note 1) T <sub>amb</sub> = 25°C	SOD-323	230
		SOT-323	
T <sub>stg</sub>	Maximum storage temperature range	- 65 to +150	°C
T <sub>j</sub>	Maximum operating junction temperature *	150	°C
T <sub>L</sub>	Maximum temperature for soldering during 10s	260	°C

Note 1: for double diodes, P<sub>tot</sub> 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 : \* t<sub>p</sub> = 380 μs δ < 2%

\*\* t<sub>p</sub> = 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		

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

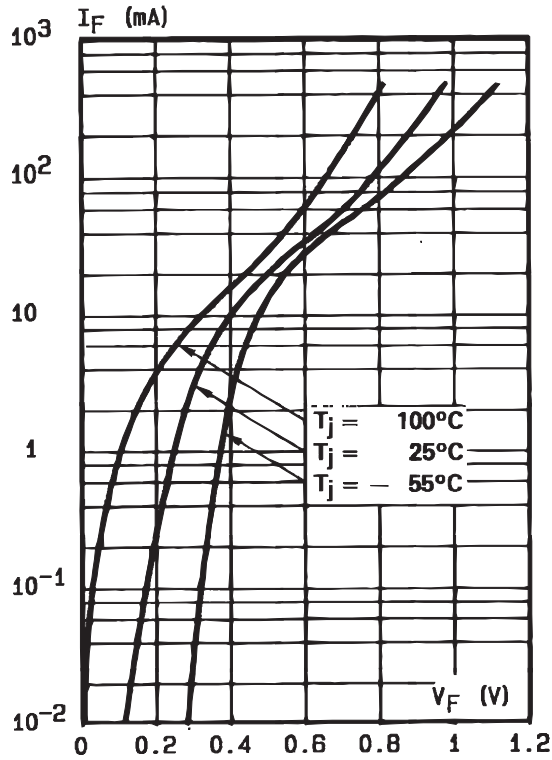


Fig. 2: Forward current versus forward voltage (typical values).

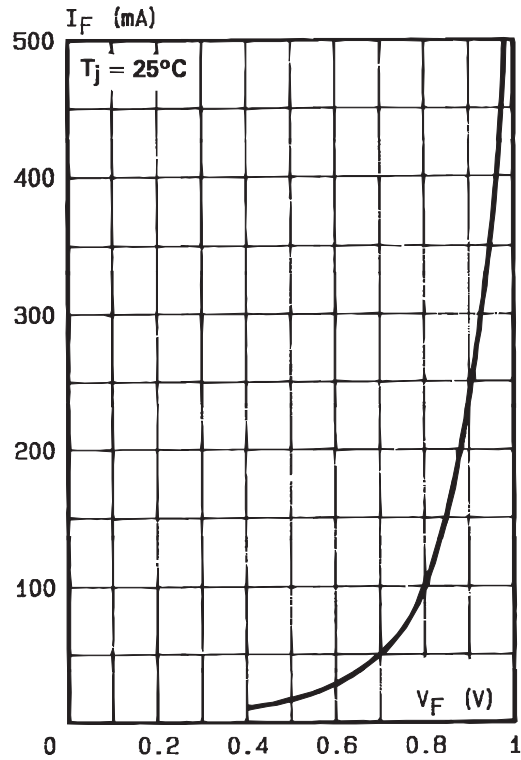


Fig. 3: Reverse current versus junction temperature (typical values).

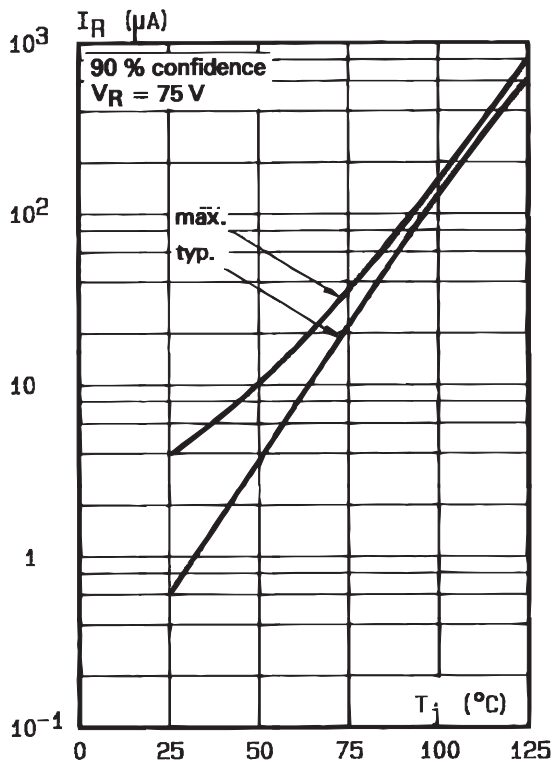
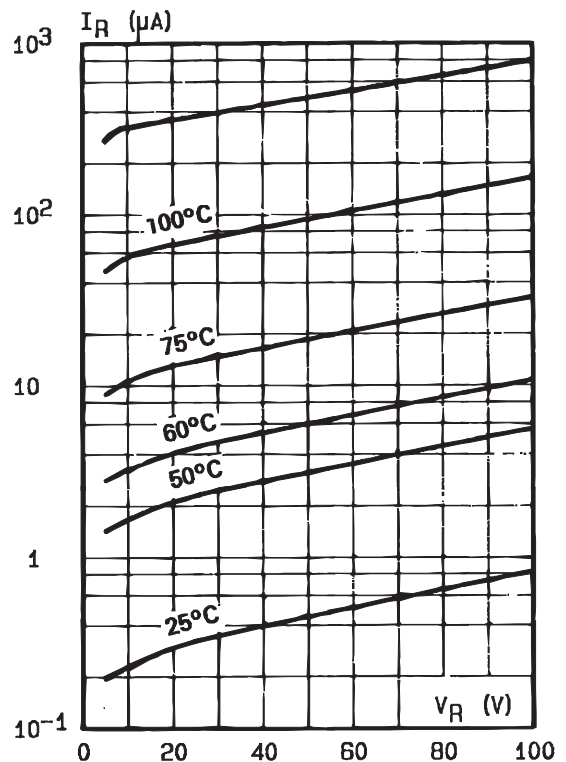
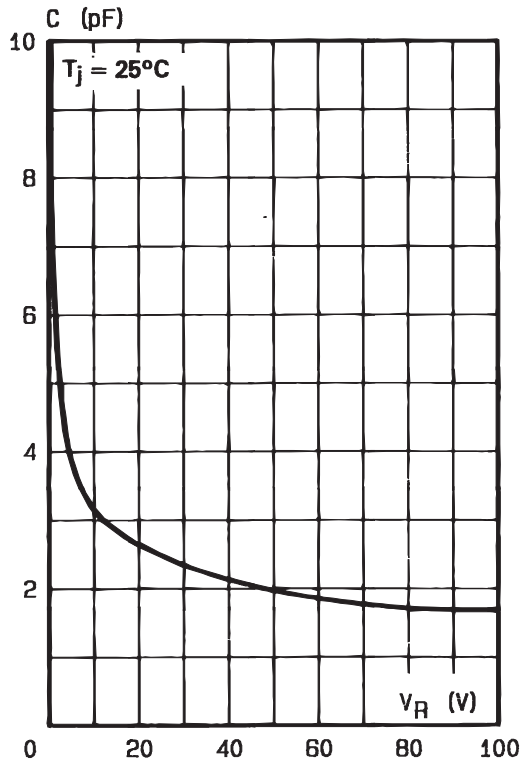


Fig. 4: Reverse current versus continuous reverse voltage (typical values).

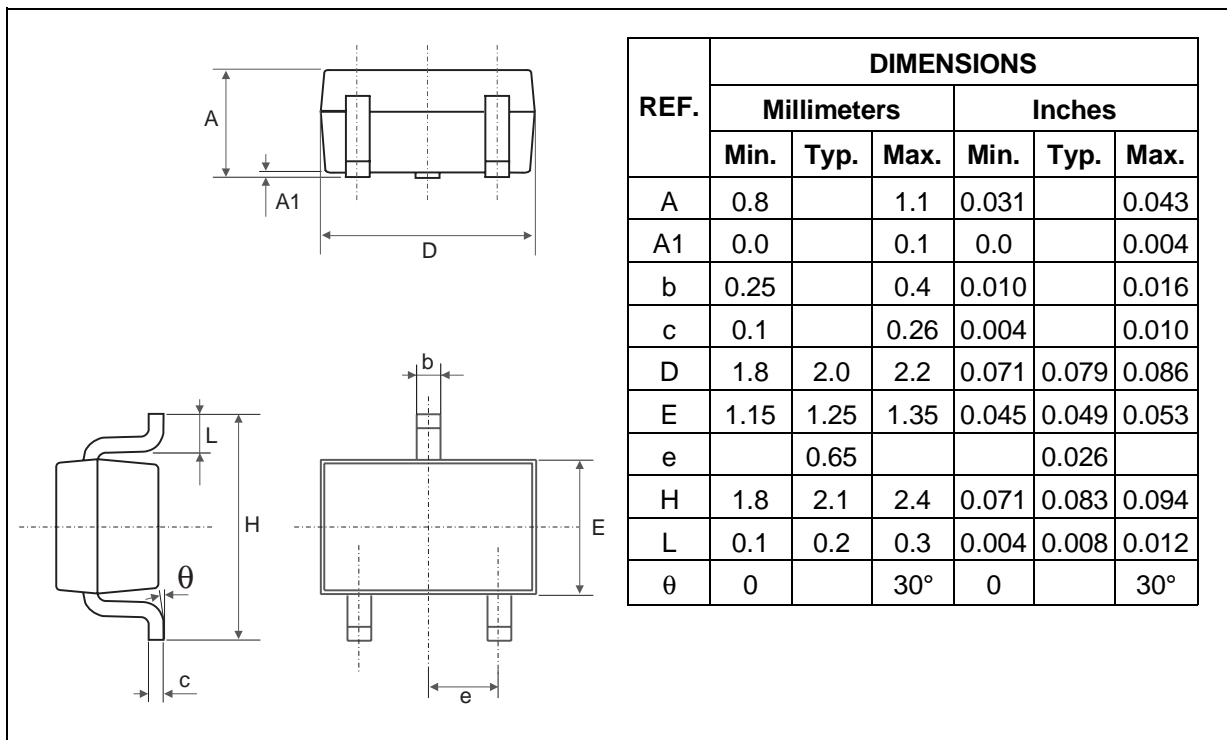


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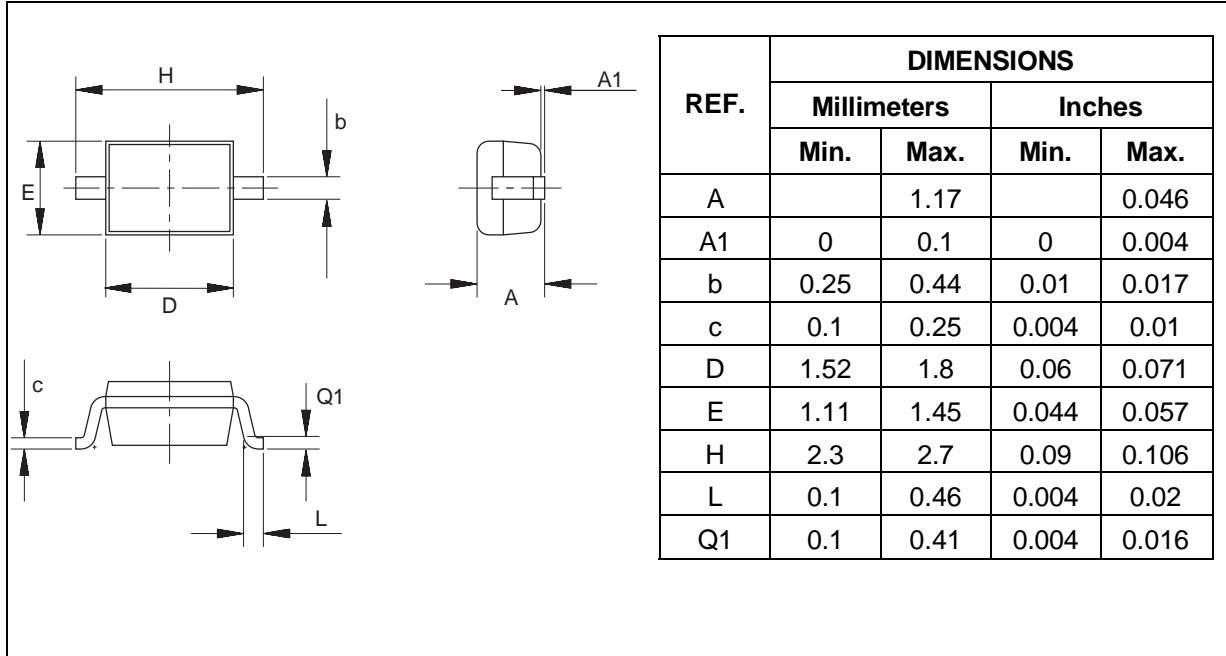
**Fig. 5:** Capacitance C versus reverse applied voltage  $V_R$  (typical values).



**PACKAGE MECHANICAL DATA**  
SOT-323



**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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