BAT46J / BAT46W
BAT46AW /BAT46CW / BAT46SW

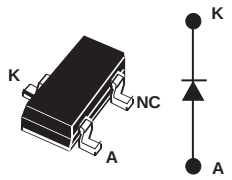
SMALL SIGNAL SCHOTTKY DIODE

FEATURES AND BENEFITS

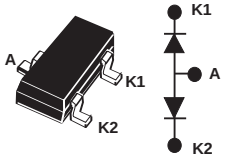
- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- SURFACE MOUNT DEVICE

DESCRIPTION

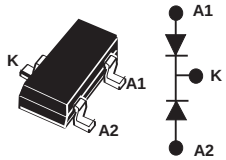
High voltage schottky rectifier suited for SLIC protection during the card insertion operation.



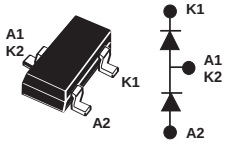
BAT46W



BAT46AW

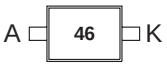


BAT46CW



BAT46SW

SOT-323



BAT46J

SOD-323

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) Tamb = 25°C	SOD-323	230	mW
		SOT-323		
T_{stg}	Maximum storage temperature range		- 65 to +150	°C
Tj	Maximum operating junction temperature *		150	°C
T_L	Maximum temperature for soldering during 10s		260	°C

Note 1: for double diodes, Ptot is the total dissipation of the both diodes.

* : $\frac{dPtot}{dTj} < \frac{1}{Rth(j-a)}$ thermal runaway condition for a diode on its own heatsink

THERMAL RESISTANCE

Symbol	Parameters		Value	Unit
$R_{th\ (j-a)}$	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_{BR}	Tj = 25 °C	I_R = 100 µA	100			V
V_F *	Tj = 25 °C	I_F = 0.1 mA			0.25	V
	Tj = 25 °C	I_F = 10 mA			0.45	
	Tj = 25 °C	I_F = 250 mA			1	
I_R**	Tj = 25 °C	V_R = 1.5 V			0.5	µA
	Tj = 60 °C				5	
	Tj = 25 °C	V_R = 10 V			0.8	
	Tj = 60 °C				7.5	
	Tj = 25 °C	V_R = 50 V			2	
	Tj = 60 °C				15	
	Tj = 25 °C	V_R = 75 V			5	
	Tj = 60 °C				20	

Pulse test : * tp = 380µs $\delta < 2\%$
** tp = 5ms, $\delta < 2\%$

DYNAMIC CHARACTERISTICS

Symbol	Test conditions			Min.	Typ.	Max.	Unit
C	Tj = 25 °C	V_R = 0 V	F = 1MHz		10		pF
	Tj = 25 °C	V_R = 1 V			6		

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

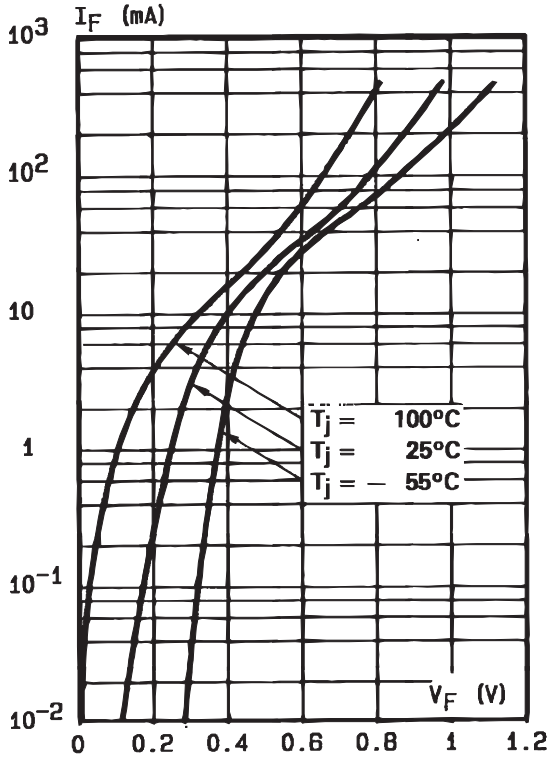


Fig. 2: Forward current versus forward voltage (typical values).

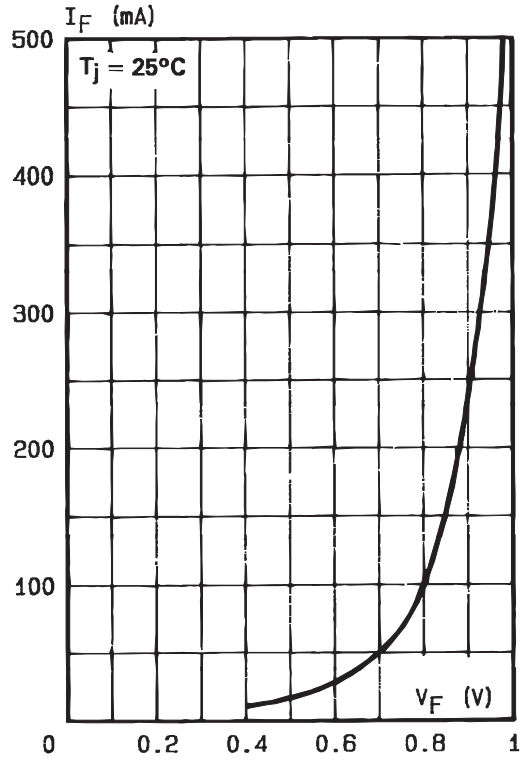


Fig. 3: Reverse current versus junction temperature (typical values).

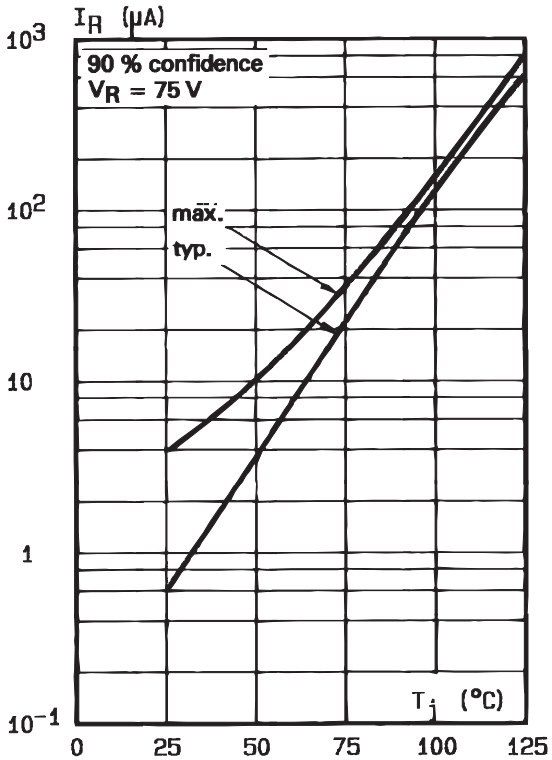


Fig. 4: Reverse current versus continuous reverse voltage (typical values).

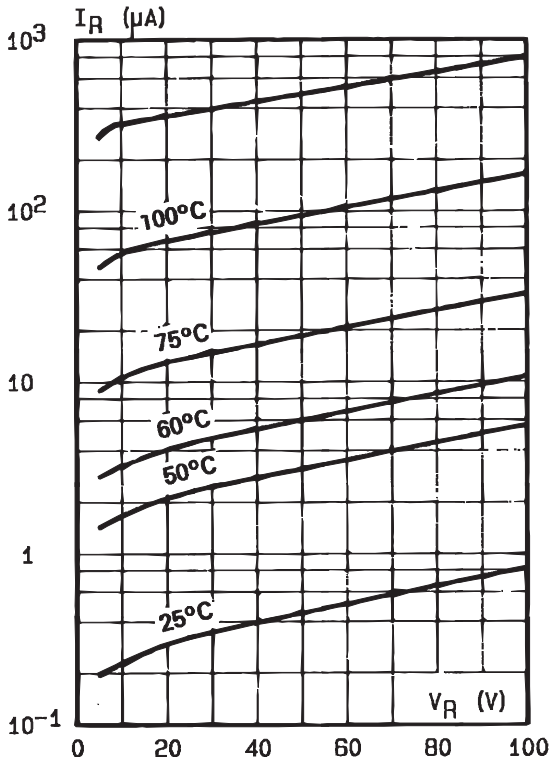
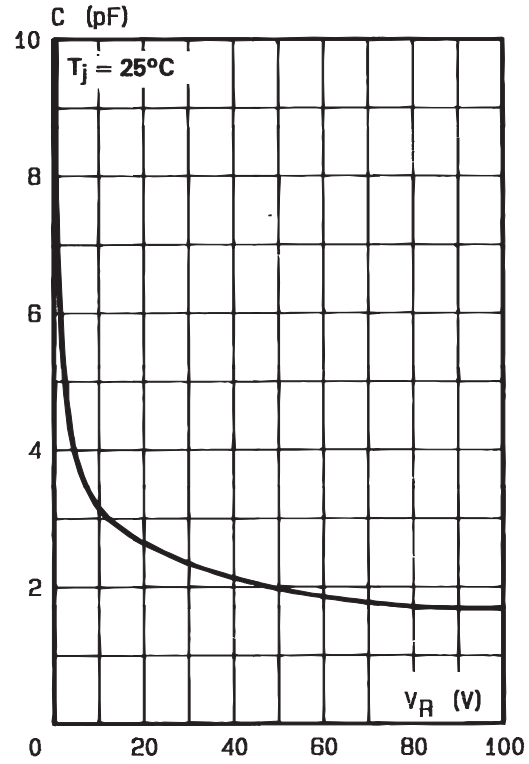
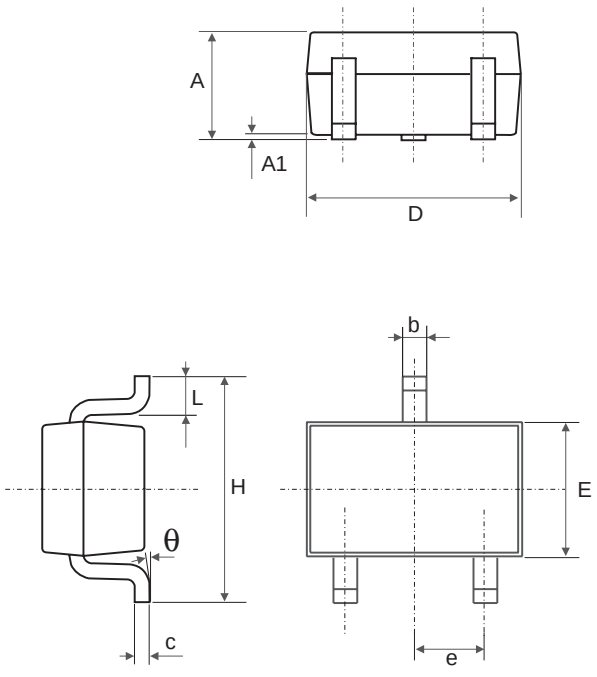


Fig. 5: Capacitance C versus reverse applied voltage V_R (typical values).

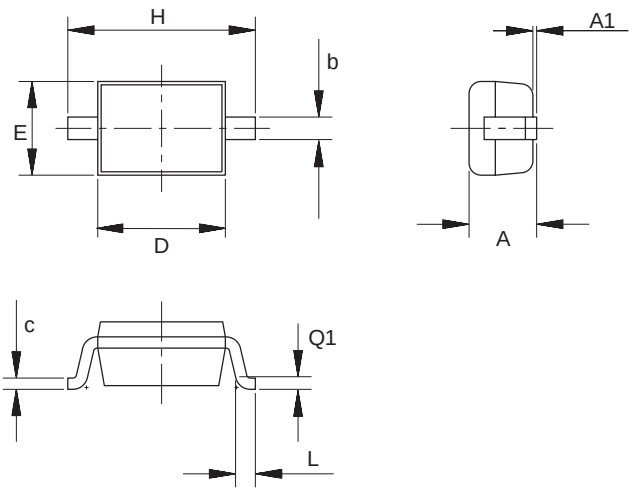


PACKAGE MECHANICAL DATA
SOT-323



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.8		1.1	0.031		0.043
A1	0.0		0.1	0.0		0.004
b	0.25		0.4	0.010		0.016
c	0.1		0.26	0.004		0.010
D	1.8	2.0	2.2	0.071	0.079	0.086
E	1.15	1.25	1.35	0.045	0.049	0.053
e		0.65			0.026	
H	1.8	2.1	2.4	0.071	0.083	0.094
L	0.1	0.2	0.3	0.004	0.008	0.012
θ	0		30°	0		30°

PACKAGE MECHANICAL DATA
SOD-323



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A		1.17		0.046
A1	0	0.1	0	0.004
b	0.25	0.44	0.01	0.017
c	0.1	0.25	0.004	0.01
D	1.52	1.8	0.06	0.071
E	1.11	1.45	0.044	0.057
H	2.3	2.7	0.09	0.106
L	0.1	0.46	0.004	0.02
Q1	0.1	0.41	0.004	0.016

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