BAT46J / BAT46W
BAT46AW /BAT46CW / BAT46SW

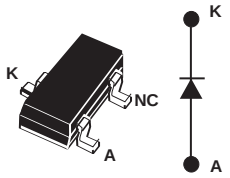
SMALL SIGNAL SCHOTTKY DIODE

FEATURES AND BENEFITS

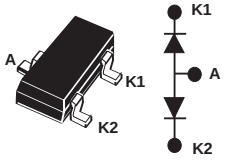
- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- SURFACE MOUNT DEVICE

DESCRIPTION

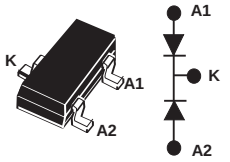
High voltage schottky rectifier suited for SLIC protection during the card insertion operation.



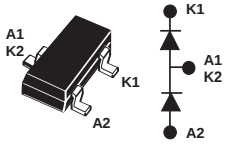
BAT46W



BAT46AW

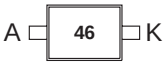


BAT46CW



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 δ < 2%
** tp = 5ms, δ < 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).

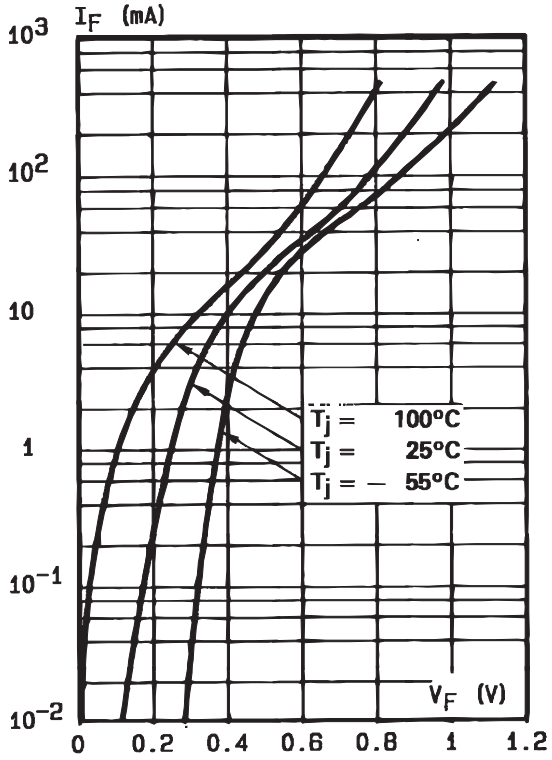


Fig. 2: Forward current versus forward voltage (typical values).

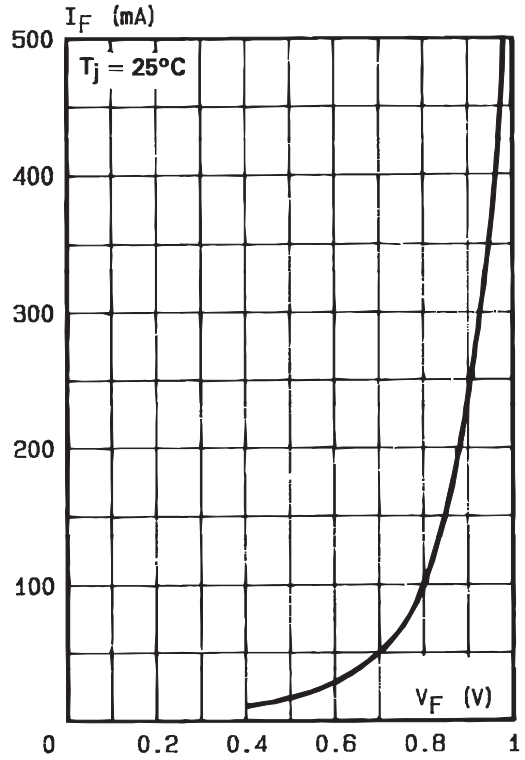


Fig. 3: Reverse current versus junction temperature (typical values).

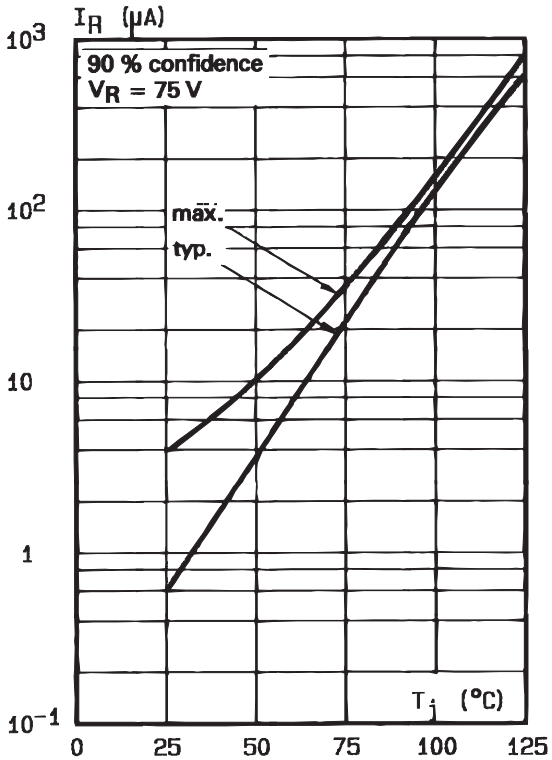


Fig. 4: Reverse current versus continuous reverse voltage (typical values).

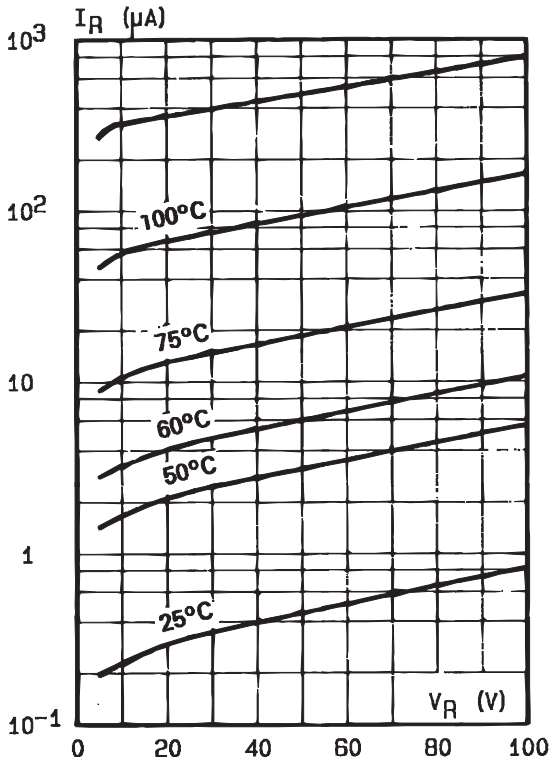
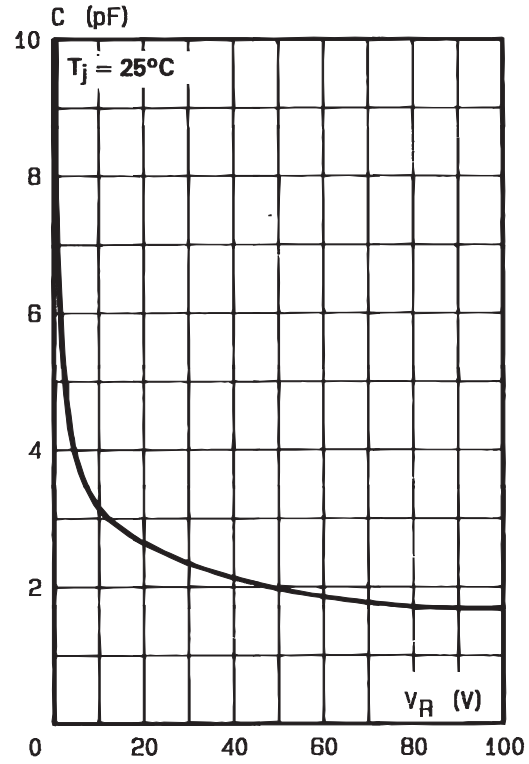
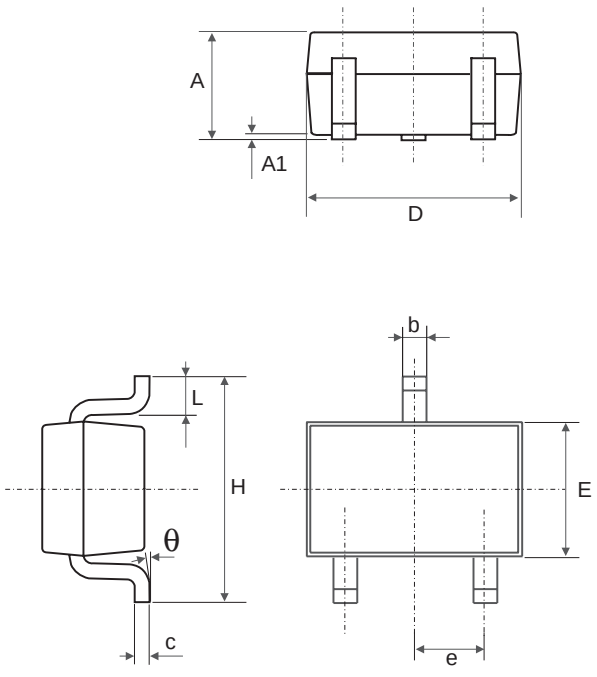


Fig. 5: Capacitance C versus reverse applied voltage V_R (typical values).

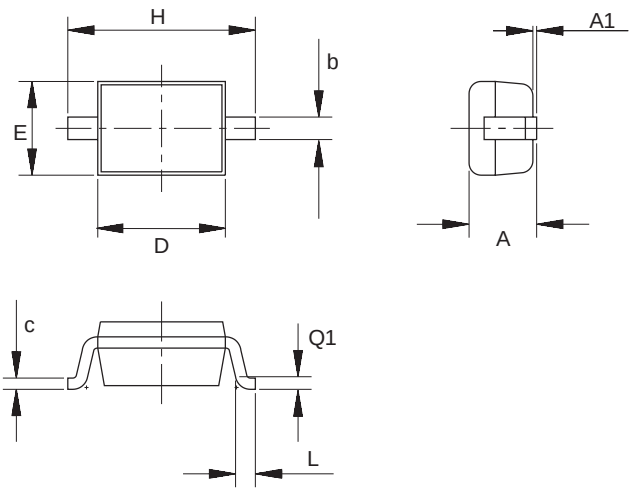


PACKAGE MECHANICAL DATA
SOT-323



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

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied.
STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a registered trademark of STMicroelectronics

© 1999 STMicroelectronics - Printed in Italy - All rights reserved.

STMicroelectronics GROUP OF COMPANIES
Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia
Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - U.S.A.

http://www.st.com