

250mA, 100V Schottky Barrier Diode

FEATURES

- High breakdown voltage
- Low forward voltage
- Surface mount device type
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- High-speed switching
- Voltage clamping
- Reverse polarity protection

MECHANICAL DATA

- Case: SOD-123
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 11.00mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	250	mA
V_{RRM}	100	V
V_F at $I_F = 10\text{mA}$	0.45	V
$T_{J\text{MAX}}$	125	°C
Package	SOD-123	
Configuration	Single die	



SOD-123



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	BAT46GW	UNIT
Marking code on the device		S9	
Power dissipation	P_D	200	mW
Non-repetitive peak reverse voltage	V_{RM}	100	V
Repetitive peak reverse voltage	V_{RRM}	100	V
RMS reverse voltage	$V_{R(RMS)}$	70	V
Forward current	I_F	250	mA
Junction temperature range	T_J	-55 to +125	°C
Storage temperature range	T_{STG}	-55 to +125	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	331	°C/W

Note: Units mounted on PCB (10mm x 5mm Cu pad test board)

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 0.1\text{mA}, T_J = 25^\circ\text{C}$	V_F	-	-	0.25	V
	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$		-	0.33	0.45	V
	$I_F = 250\text{mA}, T_J = 25^\circ\text{C}$		-	0.78	1.00	V
Reverse voltage ⁽²⁾	$I_R = 100\mu\text{A}, T_J = 25^\circ\text{C}$	V_R	100	-	-	V
Reverse current ⁽²⁾	$V_R = 10\text{V}, T_J = 25^\circ\text{C}$	I_R	-	-	0.8	μA
	$V_R = 50\text{V}, T_J = 25^\circ\text{C}$		-	-	2.0	μA
	$V_R = 75\text{V}, T_J = 25^\circ\text{C}$		-	-	5.0	μA
Junction capacitance	$f = 1\text{MHz}, V_R = 0\text{V}$	C_J	-	14.5	20	pF

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
BAT46GW RHG	SOD-123	3K / 7" Reel

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Typical Forward Characteristics

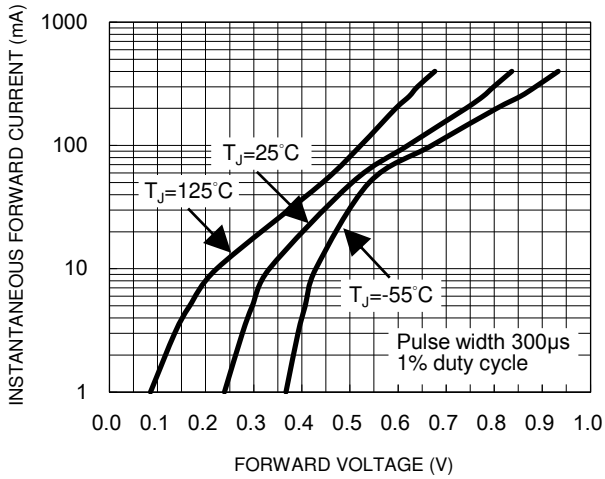


Fig.2 Typical Reverse Characteristics

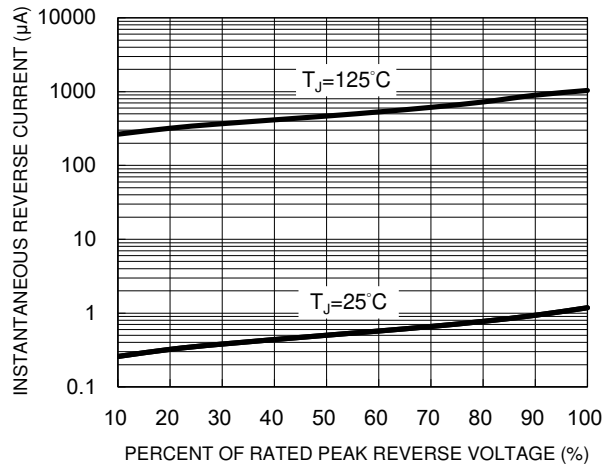


Fig.3 Typical Junction Capacitance

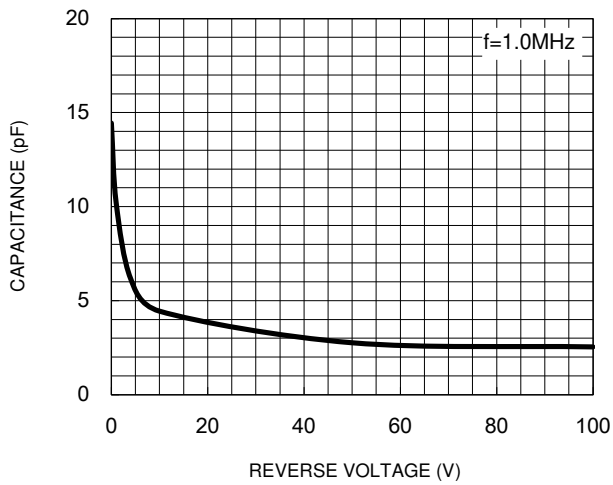
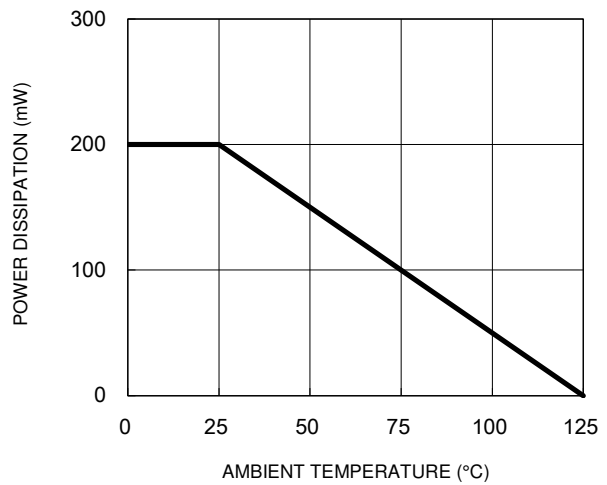
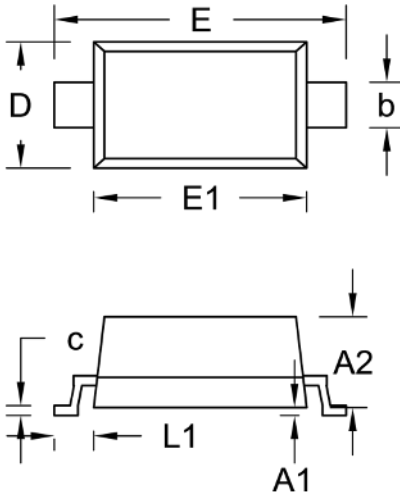


Fig.4 Power Derating Curve



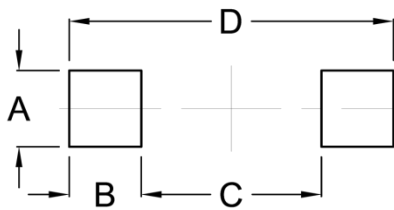
PACKAGE OUTLINE DIMENSION

SOD-123



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A1	-	0.10	-	0.004
A2	0.95	1.35	0.037	0.053
b	0.45	0.70	0.018	0.028
c	0.05	0.15	0.002	0.006
D	1.40	1.80	0.055	0.071
E	3.55	3.85	0.140	0.152
E1	2.55	2.85	0.100	0.112
L1	0.50 (REF)		0.020 (REF)	

SUGGEST PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	0.95	0.037
B	0.90	0.035
C	2.25	0.089
D	4.05	0.159

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