GOOD-ARK SEMICONDUCTOR

GSBAT46W
Schottky Diode

Features

- High breakdown voltage
- Low turn-on voltage
- Guard ring construction for transient protection

SOD-123

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Working Peak Reverse Voltage	V_{RWM}	100	V
Forward Continuous Current	I_F	150	mA
Repetitive Peak Forward Current (@ t_p<1.0s, Duty Cycle<50%)[1]	I_{FRM}	350	mA
Non-Repetitive Peak Forward Surge Current, @ t=8.3ms	I_{FSM}	750	mA
Power Dissipation	P_D	500	mW
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	200	°C/W
Operating Junction Temperature Range	T_J	-40 to +125	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reverse Breakdown Voltage[2,3]	V_R	I_R=100μA	100	-	-	V
Reverse Voltage Leakage Current[2,3]	I_R	V_{R1}=1.5V	-	-	0.3	μA
		V_{R2}=10V	-	-	0.5	
		V_{R3}=50V	-	-	1	
		V_{R4}=75V	-	-	2	
	I_R	V_{R1}=1.5V, T_J=60°C	-	-	12	μA
		V_{R2}=10V, T_J=60°C	-	-	20	
		V_{R3}=50V, T_J=60°C	-	-	44	
		V_{R4}=75V, T_J=60°C	-	-	80	
Forward Voltage[2,3]	V_F	I_{F1}=0.1mA	-	-	0.25	V
		I_{F2}=10mA	-	-	0.45	
		I_{F3}=250mA	-	-	1	
Diode Capacitance	C_T	V_R=0V, f=1MHz	-	20	-	pF
		V_R=1V, f=1MHz	-	12	-	

Notes:

1. Part mounted on FR-4 board with recommended pad layout.
2. Short duration pulse test used to minimize self-heating effect.
3. Pulsed t_p ≤300μs; δ ≤0.02.

Ratings and Characteristics Curves

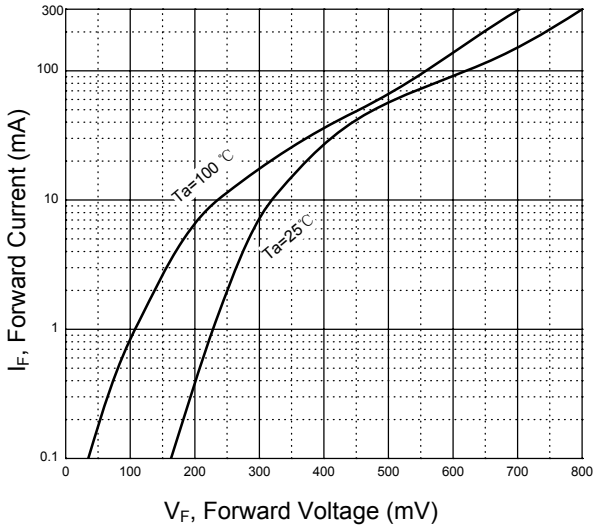


Figure 1. Forward Characteristics

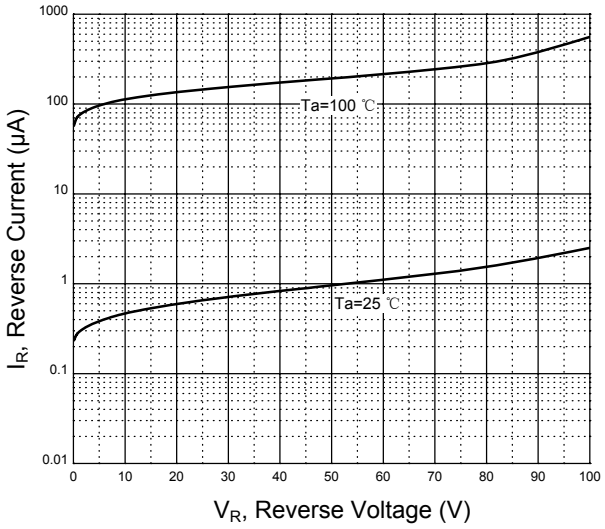


Figure 2. Reverse Characteristics

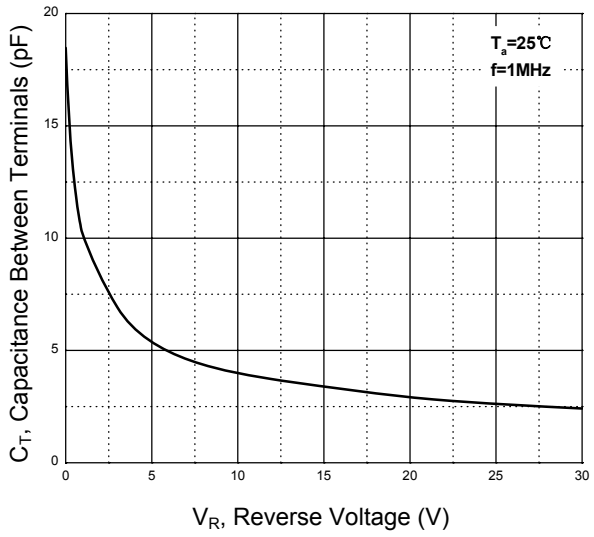


Figure 3. Capacitance Characteristics

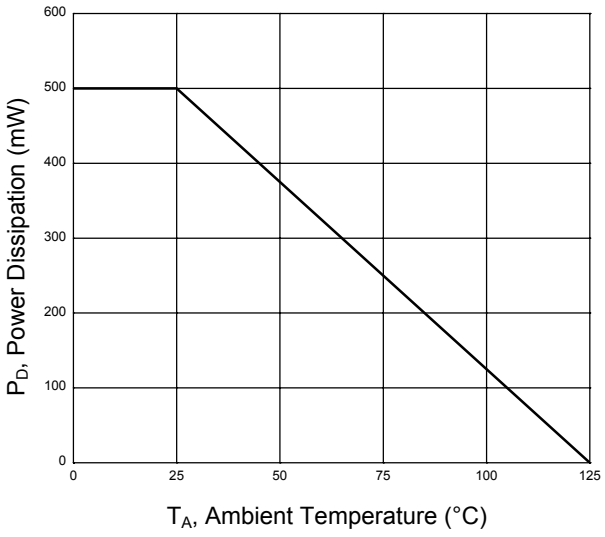
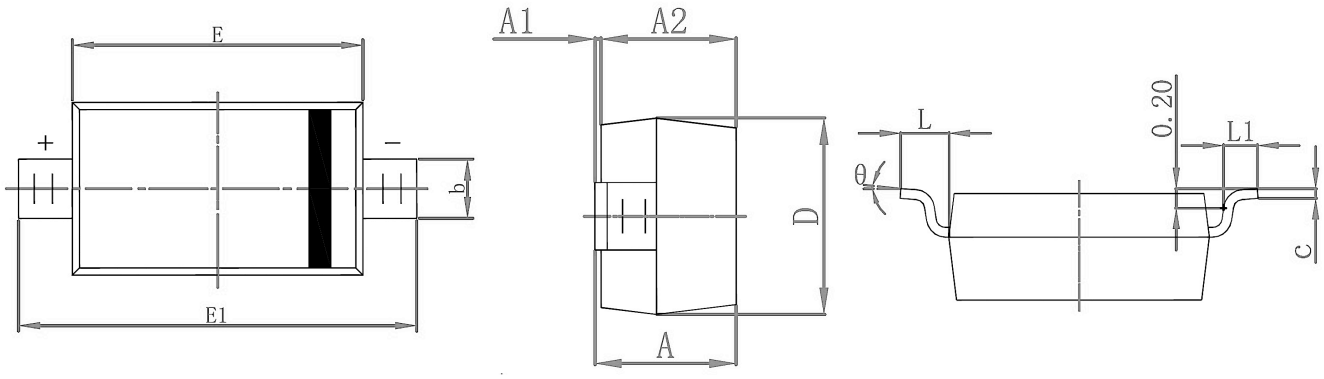


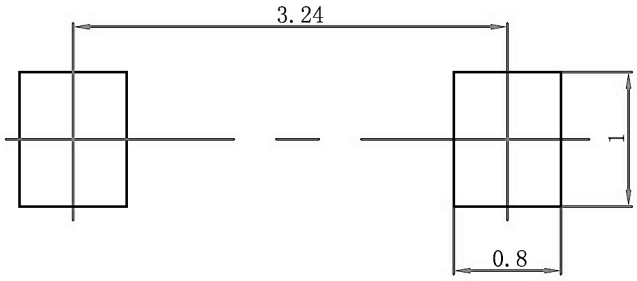
Figure 4. Power Derating Curve

Package Outline Dimensions (SOD-123)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.450	0.650	0.018	0.026
c	0.080	0.150	0.003	0.006
D	1.500	1.700	0.059	0.067
E	2.600	2.800	0.102	0.110
E1	3.550	3.850	0.140	0.152
L	0.500 REF		0.020 REF	
L1	0.250	0.450	0.010	0.018
θ	0°	8°	0°	8°

Recommended Pad Layout



Note:
1. Controlling dimension in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purposes only.

Order Information

Device	Package	Marking	Carrier	Quantity
GSBAT46W	SOD-123	S9	Tape & Reel	3,000 Pcs / Reel