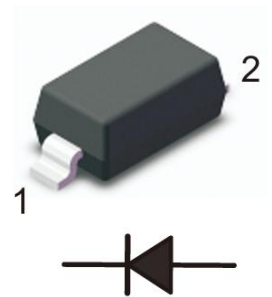


Features

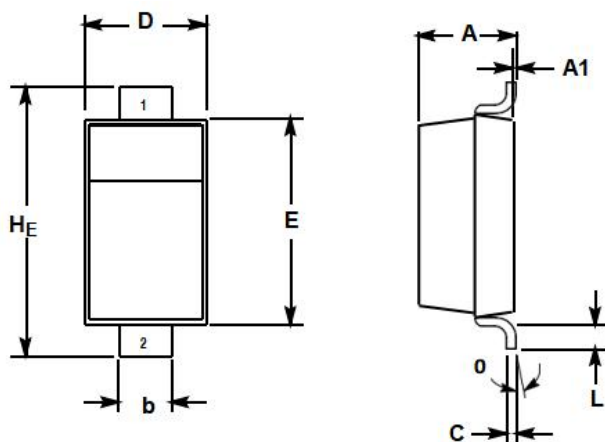
- ◆ Fast Switching Speed
- ◆ Low Forward Voltage: Maximum of 0.715V at 1mA
- ◆ Low leakage current
- ◆ Fast Reverse Recovery: Maximum of 4ns
- ◆ For surface mounted applications to optimize board space
- ◆ Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C
- ◆ Case: Molding compound meets UL 94 V-0 flammability rating
- ◆ SOD-123 Surface Mount Package



Application

- ◆ Instrument
- ◆ BCM
- ◆ SRS
- ◆ Muti-media
- ◆ CRC

Dimensions (SOD-123)



Symbol	Dimension			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.94	1.35	0.037	0.053
A1	0.00	0.10	0.000	0.004
b	0.51	0.71	0.020	0.028
c	---	0.15	---	0.006
D	1.40	1.80	0.055	0.071
E	2.54	2.84	0.100	0.112
HE	3.56	3.86	0.140	0.152
L	0.25	---	0.010	---
0	0	10°	0	10°

Maximum Ratings and Thermal Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Characteristic		Symbol	Value	Unit
Power Dissipation (Note 2)		P_D	400	mW
Maximum RMS voltage		V_{RMS}	75	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	100	V
Non-repetitive Peak Forward Surge Current	at 1s	I_{FSM}	0.5	A
	at 1ms		1	
	at 1 μ s		4	
Average Rectified Forward Current		$I_{F(AV)}$	150	mA
Thermal Resistance Junction to Ambient Air (Note 2)		$R_{\theta JA}$	280	$^{\circ}\text{C/W}$
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	$I_R = 1.0\mu\text{A}$	75	--	V
Forward Voltage	V_{FM}	$I_F = 1.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 150\text{mA}$	--	0.715 0.855 1.0 1.25	V
Peak Reverse Current (Note 1)	I_{RM}	$V_R = 75\text{V}$ $V_R = 75\text{V}, T_J = +150^{\circ}\text{C}$ $V_R = 25\text{V}, T_J = +150^{\circ}\text{C}$ $V_R = 20\text{V}$	--	1.0 50 30 0.025	μA
Total Capacitance	C_T	$V_R = 0, f = 1.0\text{MHz}$	--	2.0	pF
Reverse Recovery Time	t_{rr}	$I_F = I_R = 10\text{mA}$, $I_{RR} = 0.1 \times I_R, R_L = 100\Omega$	--	4.0	ns

Notes:

1. Short duration pulse test used to minimize self-heating effect.
2. Part mounted on FR-4 PC board with recommended pad layout.

Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

Figure 1. Power Derating Curve

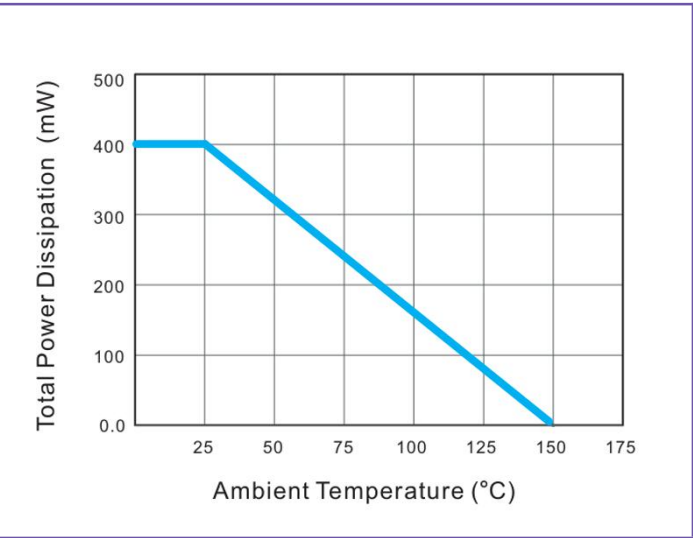


Figure 2. Typical Reverse Characteristics

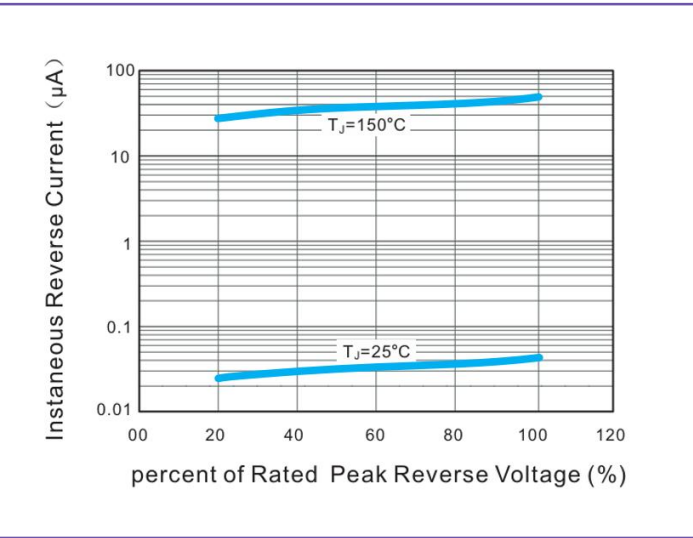


Figure 3. Typical Instantaneous Forward Characteristics

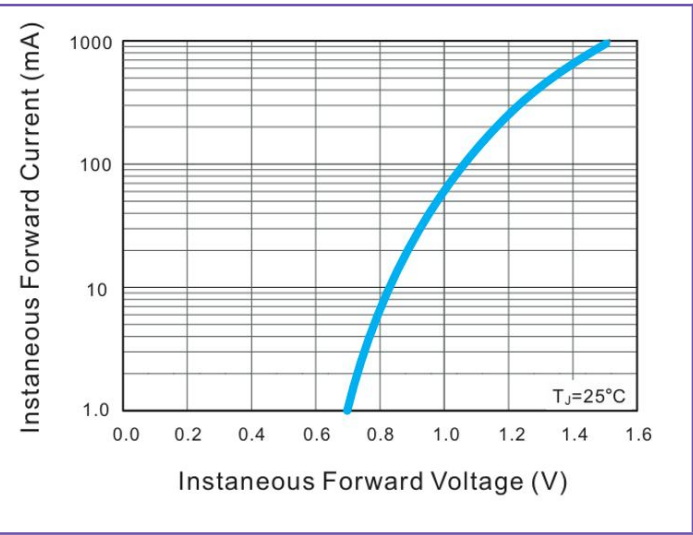
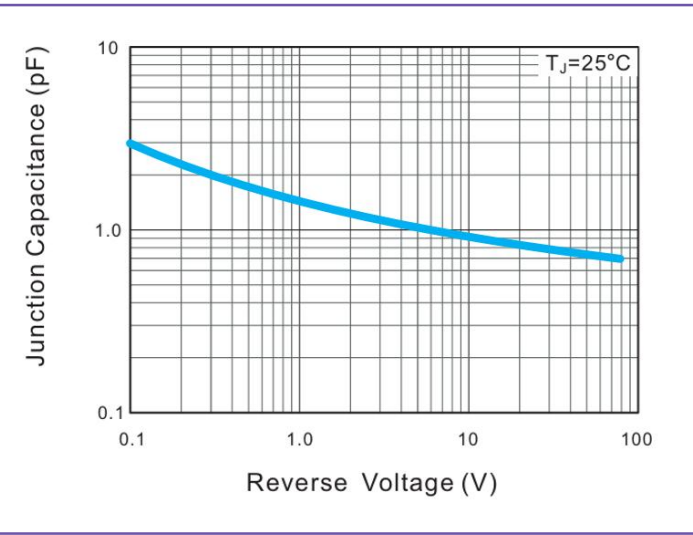
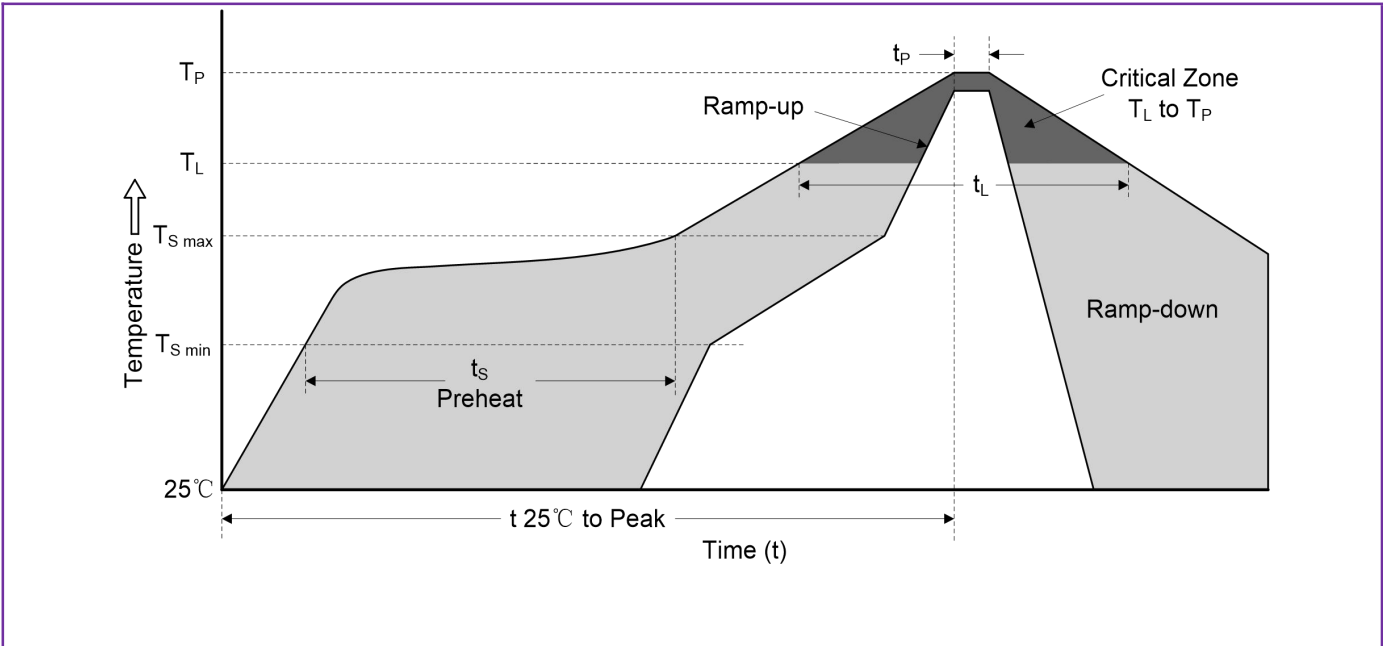


Figure 4. Typical Junction Capacitance



Reflow Soldering Parameters



Reflow Condition		Lead-free Assembly
Pre heat	-Temperature Min ($T_{S\ min}$)	150°C
	-Temperature Max ($T_{S\ max}$)	200°C
	-Time (min to max) (t_s)	60-180 seconds
Average ramp-up rate (T_L to T_P)		3°C/second max.
$T_{S\ max}$ to T_L -Ramp-up Rate		3°C/second max.
Reflow	-Temperature (T_L) (Liquidus)	217°C
	-Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		260(+0/-5)°C
Time within 5°C of actual Peak Temperature (t_P)		20-40 seconds
Ramp-down Rate		6°C/second max.
Time 25°C to Peak Temperature(T_P)		8 minutes max.
Do not exceed		260°C