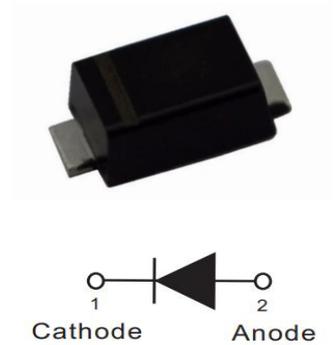


Features

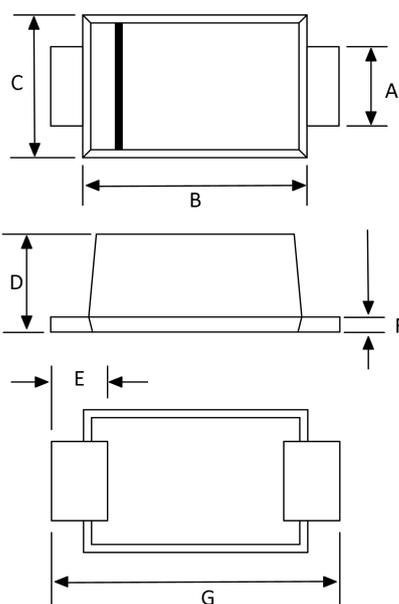
- ◆ For surface mounted applications
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High reverse voltage capability is up to 1000V
- ◆ Plastic package has underwriters laboratory flammability 94V-0
- ◆ High temperature soldering guaranteed: 250°C /10 seconds at terminals
- ◆ Case: SOD123-FL
- ◆ Polarity: Color band denotes positive end (cathode) except bi-directional models



Application

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

Dimensions (SOD-123FL)

	Millimeters		Inches	
	Ref.	Min	Max	Min.
A	0.70	1.20	0.028	0.047
B	2.50	3.00	0.098	0.118
C	1.50	2.00	0.059	0.079
D	0.90	1.30	0.035	0.052
E	0.35	0.95	0.014	0.037
F	0.05	0.26	0.002	0.010
G	3.40	3.90	0.134	0.154

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

Item	Symbol	M1S	M2S	M3S	M4S	M5S	M6S	M7S	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage (Note 3)	V_{RRM} V_{RWM} V_R	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current @ $T_J=85^{\circ}\text{C}$	I_O	1.0							A
Maximum Forward Voltage Drop @ $I_F=1.0\text{A}$	V_{FM}	1.1							V
Peak Reverse Current @ $T_A=25^{\circ}\text{C}$ at Rated DC Blocking Voltage (Note 1) @ $T_A=125^{\circ}\text{C}$	I_{RM}	5 50							μA
Typical Total Capacitance (Note 2)	C_T	8							pF
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	30							A
Typical Thermal Resistance, Junction to Terminal (Note 3)	$R_{\theta JA}$ $R_{\theta JC}$	115 25							$^{\circ}\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150							$^{\circ}\text{C}$

Notes:

1. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pads as heat sink.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. Short duration pulse test used to minimize self-heating effect.

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

Figure 1. Forward Current Derating Curve

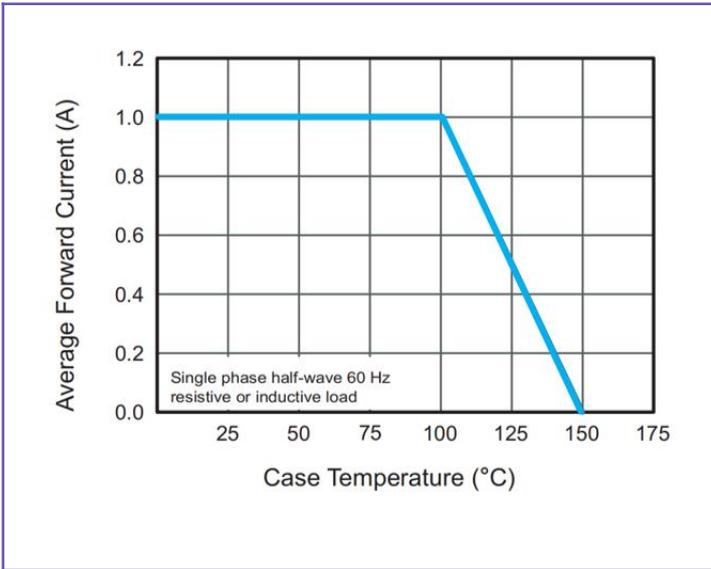


Figure 2. Typical Instantaneous Reverse Characteristics

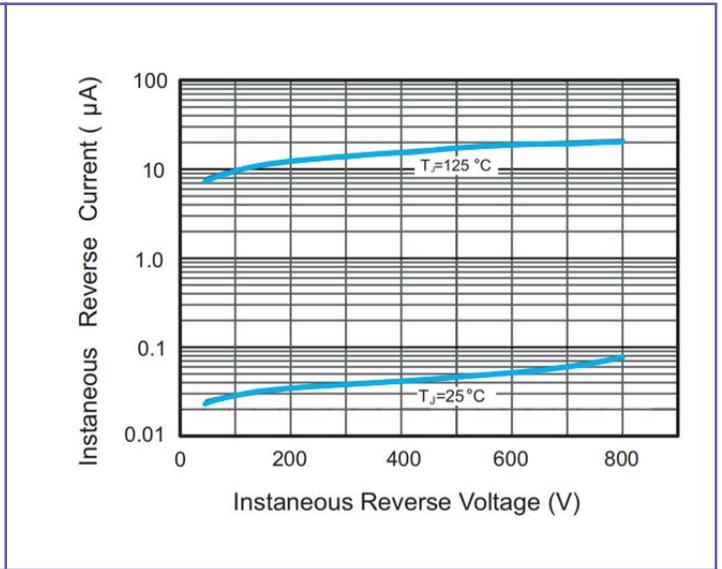


Figure 3. Typical Forward Characteristics

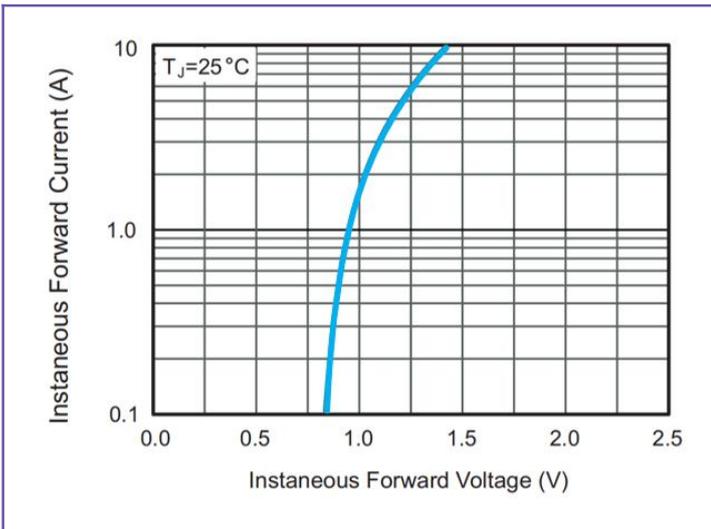


Figure 4. Typical Junction Capacitance

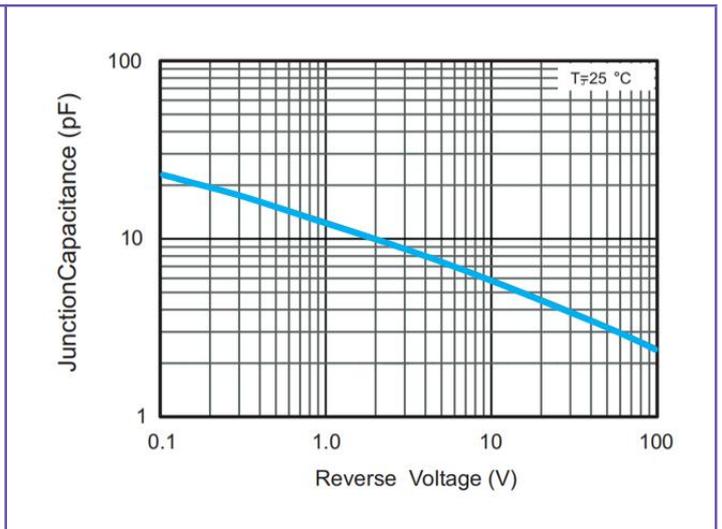
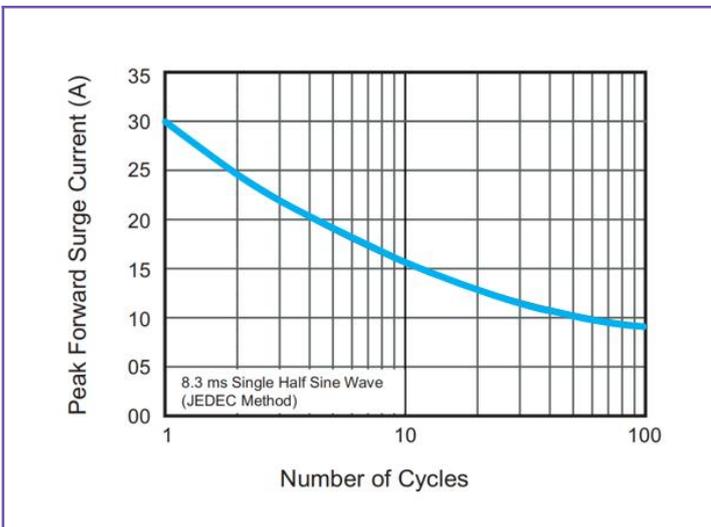
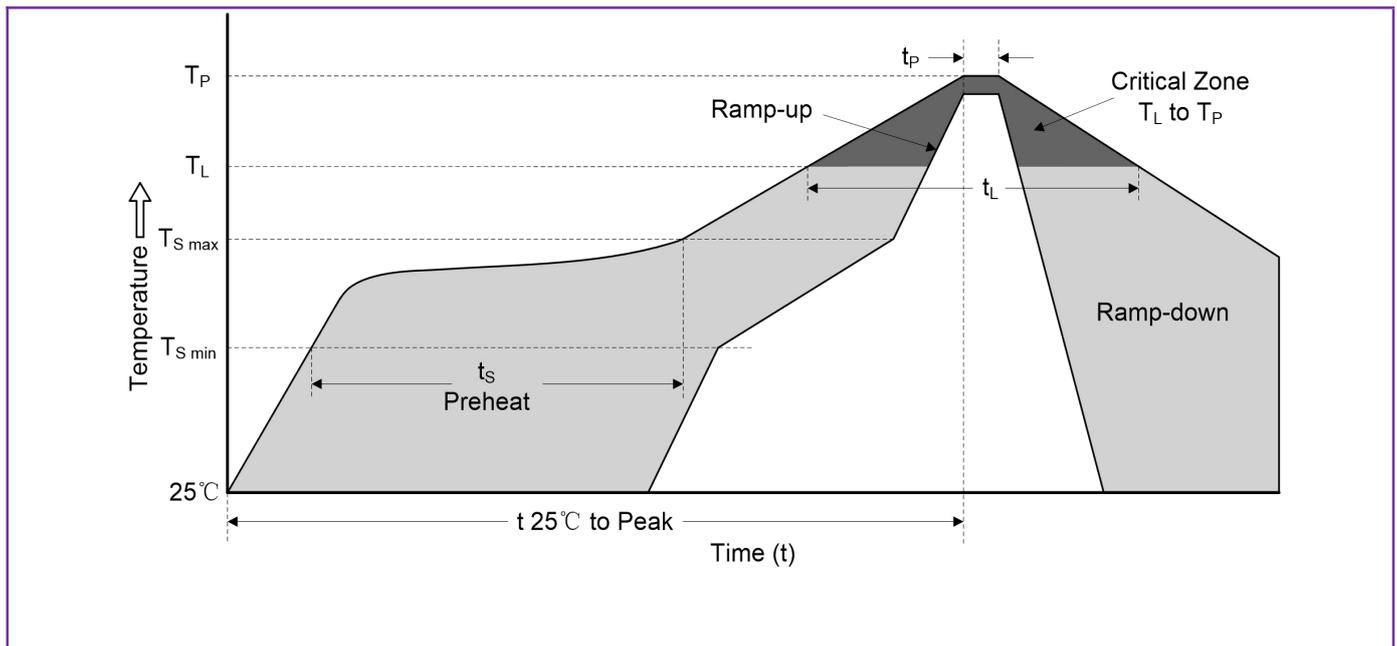


Figure 5. Maximum Non-Repetitive Peak Forward Surge Current



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