

FEATURES

- | Low Power Loss, High Efficiency
- | High Surge Capability
- | High Current Capability and Low Forward Voltage Drop
- | Meet AEC-Q101 Requirements



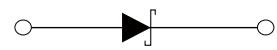
SOD-123FL



Marking

MECHANICAL DATA

- | Encapsulation: SOD-123FL Small Outline Plastic Package
- | Polarity: Color Band Denotes Cathode end
- | Mounting Position: Any



Schematic Symbol

APPROVALS

RoHS Compliance with 2011/65/EU

HF Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage @ $I_R=1.0\text{mA}$	V_{RRM}	40	V
Working Peak Reverse Voltage @ $I_R=1.0\text{mA}$	V_{RWM}	40	V
DC Blocking Voltage @ $I_R=1.0\text{mA}$	V_R	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current	I_o	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	30	A
Power Dissipation (Note 1)	P_D	450	mW
Typical Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	222	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +125	°C

ELECTRICAL CHARACTERISTICS($T_A=25^\circ C$)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	$I_R=1mA$	40			V
Forward Voltage	V_F	$I_F=1.0A$		0.35		V
		$I_F=2.0A$		0.40		
Reverse Leakage Current (Note 2)	I_R	$V_R=40V, T_A=25^\circ C$		220		μA
		$V_R=40V, T_A=100^\circ C$	8.5			mA
Total capacitance	C_T	$V_R=4V, f=1MHz$	50			pF

Notes :

1. FR-4 Board = 70 x 60 x 1mm
2. Short duration pulse test used to minimize self-heating effect.
3. Mounted on metal core PCB

CHARACTERISTIC CURVES

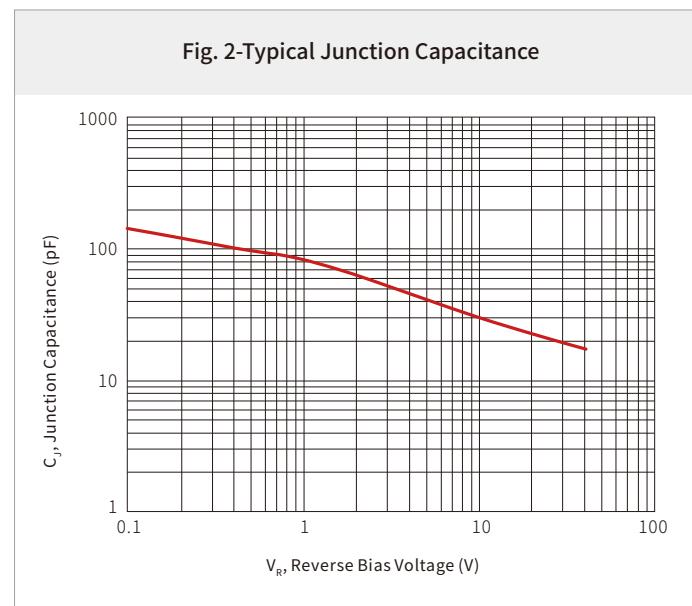
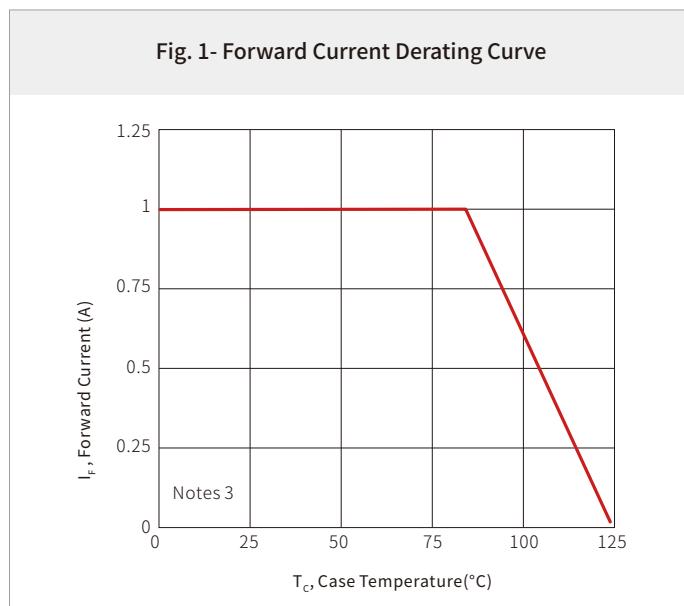
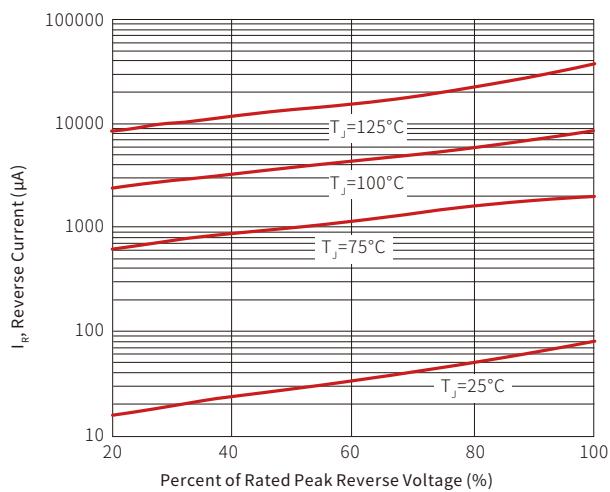
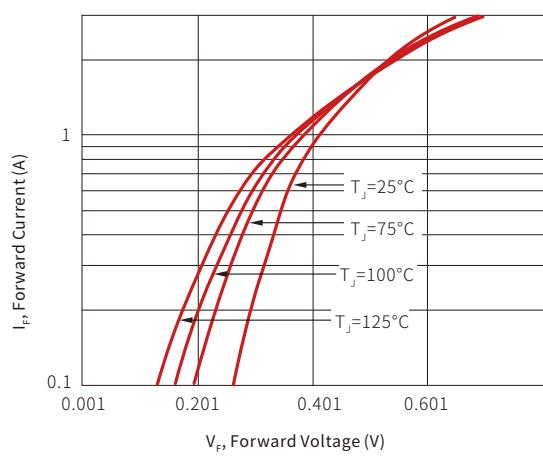
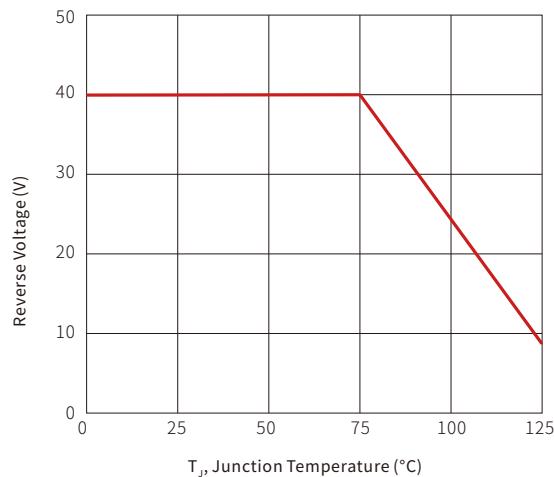
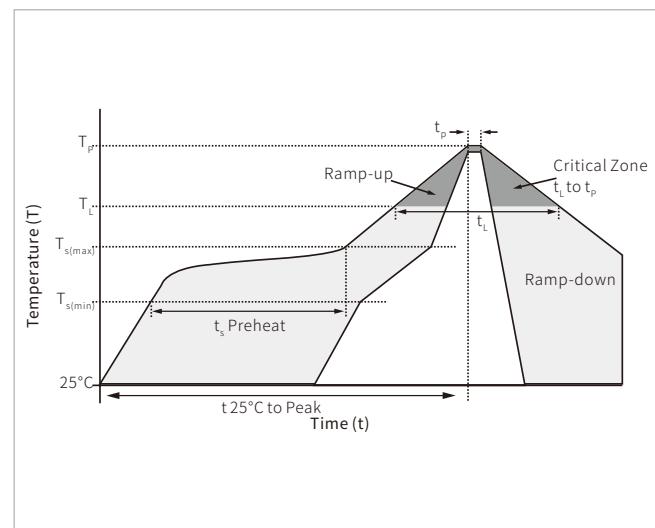


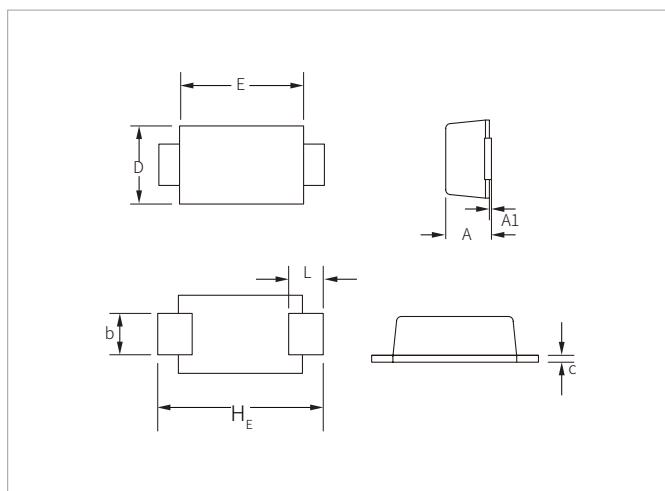
Fig. 3- Typical Reverse Characteristics

Fig. 4-Typical Forward Characteristics

Fig. 5- Operating Temperature Derating Curve


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(\min)}$)	150°C
	Temperature Max ($T_{s(\max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak	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_L)	60 – 150 seconds
	Peak Temperature (T_p)	260°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	

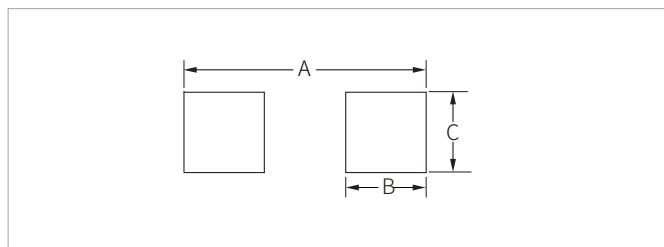


SOD-123FL PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
A1	0.00	0.10	0.000	0.004
b	0.70	1.20	0.028	0.047
c	0.05	0.30	0.002	0.012
D	1.50	2.00	0.059	0.079
E	2.50	3.10	0.098	0.122
L	0.35	0.90	0.014	0.035
H_E	3.40	3.90	0.134	0.154

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	4.20	0.165
B	1.50	0.059
C	1.20	0.047

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SS14DLFQ	SOD-123FL	3000PCS	7"

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