

## FEATURES

- | Low Power Loss, High Efficiency

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- | High Surge Capability

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- | High Current Capability and Low Forward Voltage Drop

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SOD-123FL

## MECHANICAL DATA

- | Encapsulation: SOD-123FL Small Outline Plastic Package

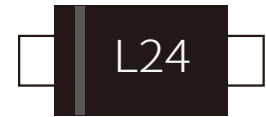
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- | Polarity: Color Band Denotes Cathode end

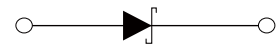
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- | Mounting Position: Any

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Marking



Schematic Symbol

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## MAXIMUM RATINGS (T<sub>A</sub>=25°C )

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage @I <sub>R</sub> =1.0mA	V <sub>RRM</sub>	40	V
Working Peak Reverse Voltage @I <sub>R</sub> =1.0mA	V <sub>RWM</sub>	40	V
DC Blocking Voltage @I <sub>R</sub> =1.0mA	V <sub>R</sub>	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Average Rectified Output Current	I <sub>O</sub>	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30	A
Power Dissipation (Note 1)	P <sub>D</sub>	450	mW
Typical Thermal Resistance Junction to Ambient (Note 1)	R <sub>θJA</sub>	222	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +125	°C

## ELECTRICAL CHARACTERISTICS( $T_A=25^{\circ}\text{C}$ )

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

Notes :

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

## CHARACTERISTIC CURVES

Fig. 1- Forward Current Derating Curve

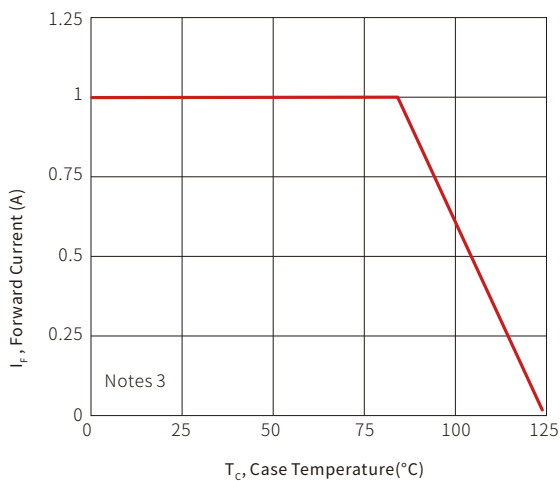
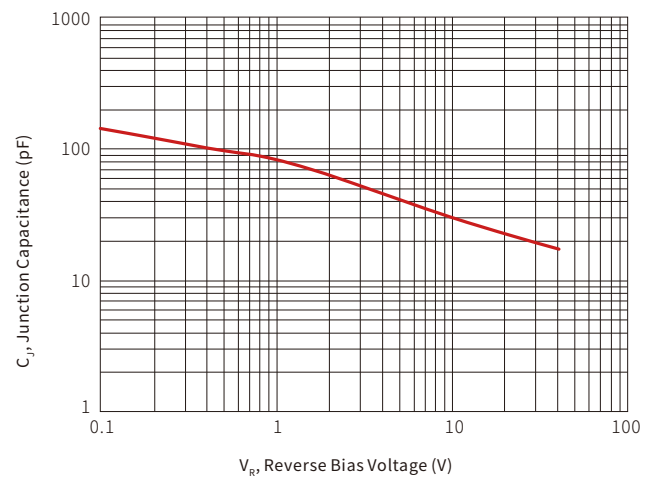
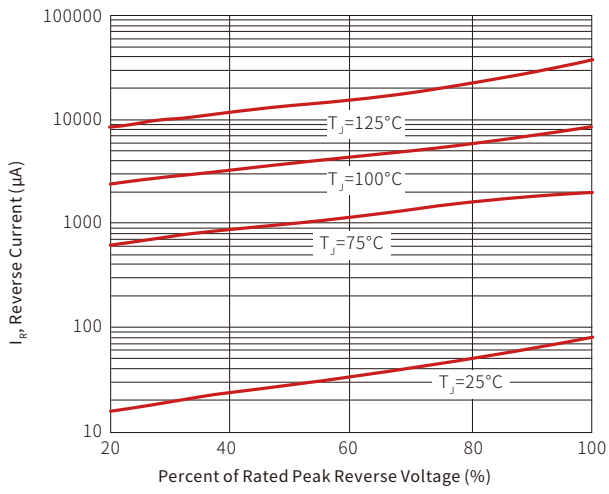


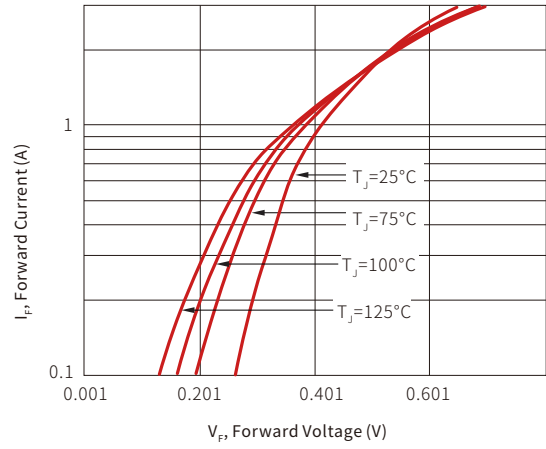
Fig. 2-Typical Junction Capacitance



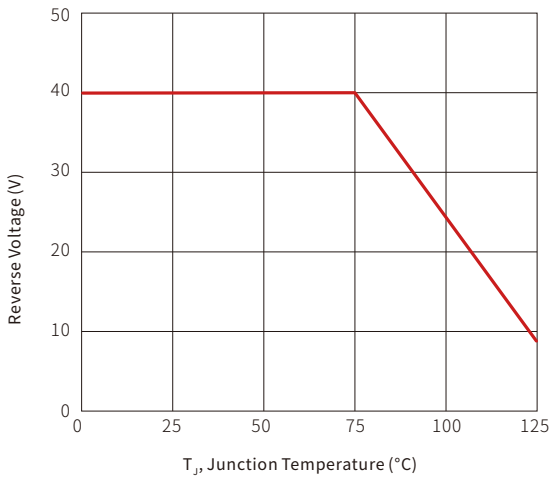
**Fig. 3- Typical Reverse Characteristics**



**Fig. 4-Typical Forward Characteristics**

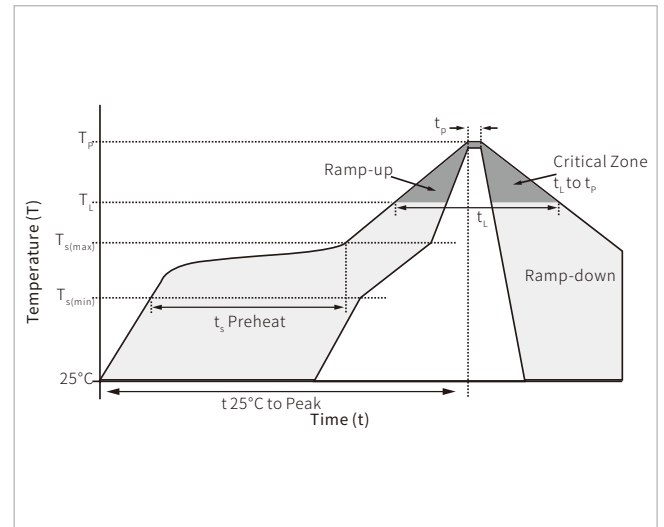


**Fig. 5- Operating Temperature Derating Curve**

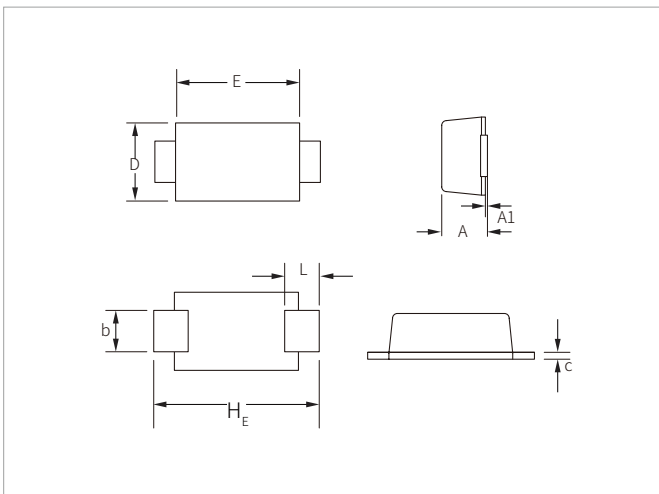


## SOLDERING PARAMETERS

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

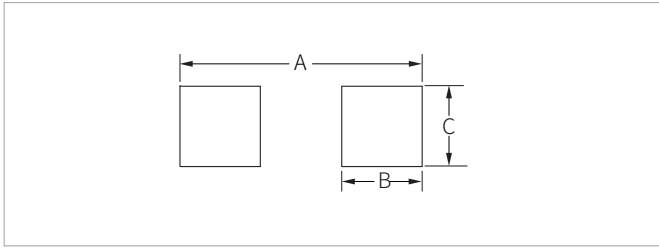


## SOD-123FL PACKAGE INFORMATION



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 <sub>E</sub>	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
SS14DLF	SOD-123FL	3000PCS	7"

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