

## FEATURES

- | Ideal For Automated Placement
- | Glass Passivated Chip Junction
- | High Surge Current Capability
- | Fast Switching For Fast Recovery
- | Meet AEC-Q101 Requirements



SOD-123FL



Schematic Symbol

## APPLICATIONS

- | For Use In Fast Switching Rectification Of Power Supply, Inverters, Converters, And Freewheeling Diodes For Consumer, And Telecommunication.

## APPROVALS

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

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

Parameter	Symbol	RS1000 FLQ	RS1001 FLQ	RS1002 FLQ	RS1004 FLQ	RS1006 FLQ	RS1008 FLQ	RS1010 FLQ	Unit
Marking		R1AQ	R1BQ	R1DQ	R1GQ	R1JQ	R1KQ	R1MQ	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	
Average Rectified Output Current @60Hz sine wave, Resistance load, TL (FIG.1)	I <sub>O</sub>	1.0							A
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>J</sub> =25°C	I <sub>FSM</sub>	30							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T <sub>J</sub> =25°C		60							
Maximum instantaneous forward voltage I <sub>FM</sub> =1.0A	V <sub>F</sub>	1.3							V
Maximum DC reverse current at rated DC blocking voltage	I <sub>R</sub>	5							μA
		100							
Typical junction capacitance Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C <sub>J</sub>	11				6			pF
Maximum reverse recovery time I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>rr</sub> =0.25A	t <sub>rr</sub>	150				250	500		ns
Current squared time @1ms ≤ t ≤ 8.3ms T <sub>J</sub> =25°C	I <sup>2</sup> t	3.735							A <sup>2</sup> s
Typical Thermal Resistance <sup>(1)</sup>	R <sub>θJ-A</sub>	68							°C/W
	R <sub>θJ-L</sub>	20							
	R <sub>θJ-C</sub>	18							
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150							°C

Note:

(1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm\*3mm copper pad areas

# CHARACTERISTIC CURVES

Fig.1 I<sub>o</sub>-TL Curve

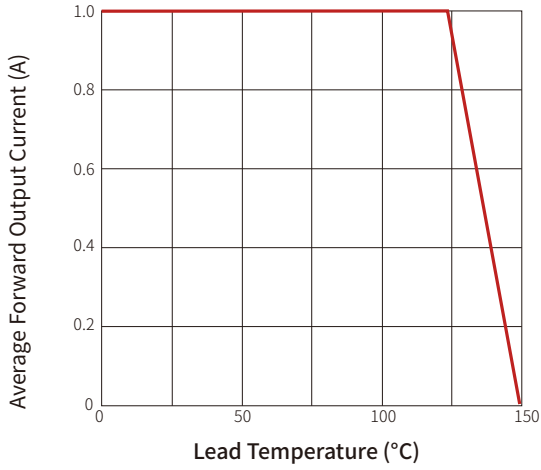


Fig.2 Forward Surge Current Capability

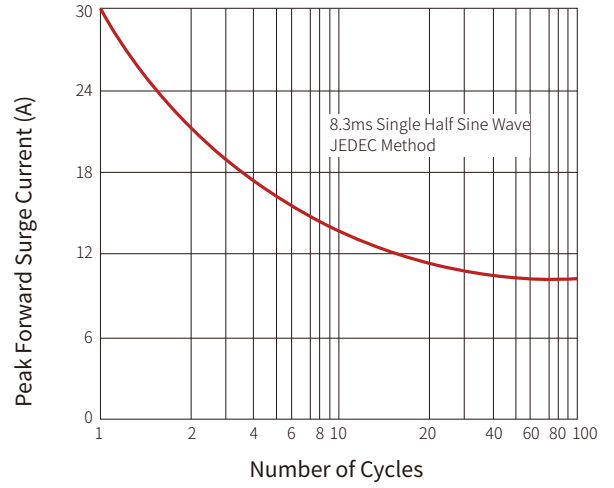


Fig.3 Typical Forward Voltage

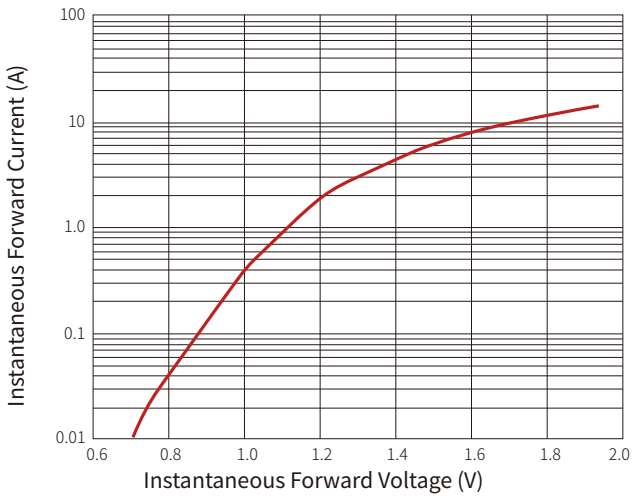
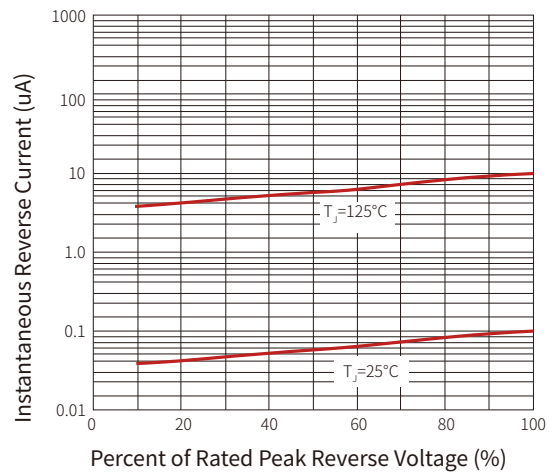
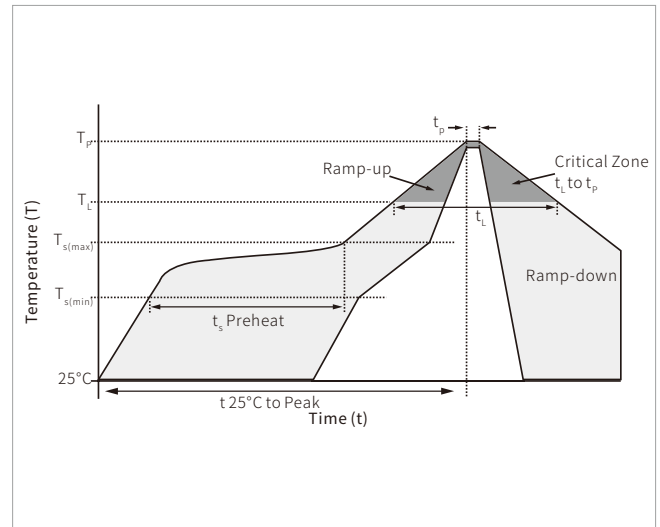


Fig.4 Typical Reverse Characteristics

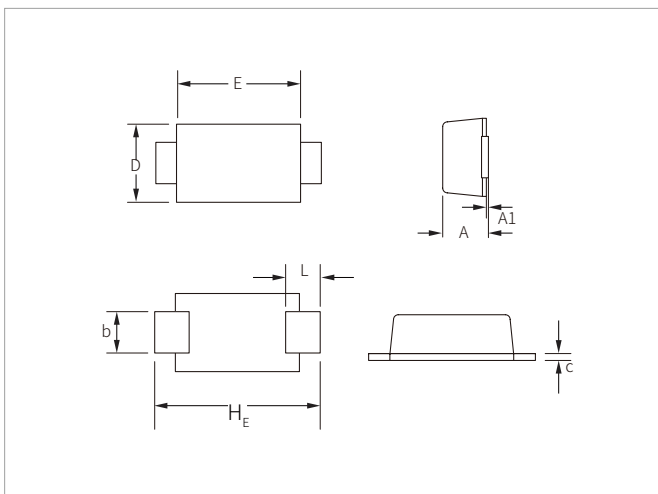


## SOLDERING PARAMETERS

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

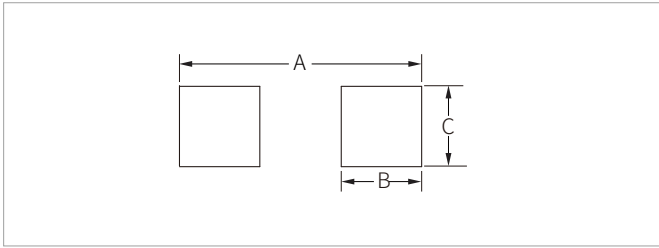


## SOD-123FL PACKAGE INFORMATION



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	2.90	0.098	0.114
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
RS1000FLQ-RS1010FLQ	SOD-123FL	3000PCS	7"

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