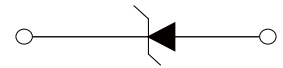


## FEATURES

- | Low profile package
- | Ideal for automated placement
- | Glass passivated chip junction
- | High forward surge capability
- | Meets MSL level 1, per J-STD-020



SOD-123FL



Schematic Symbol

## MECHANICAL DATA

- | Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- | Moisture Sensitivity: Level 1 per J-STD-020
- | Polarity: Cathode line denotes the cathode end

## 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	RS1000FL	RS1001FL	RS1002FL	RS1004FL	RS1006FL	RS1008FL	RS1010FL	Unit	
Marking		R1A	R1B	R1D	R1G	R1J	R1K	R1M		
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		
Maximum average forward rectified current	I <sub>F(AV)</sub>	1							A	
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	30								
Maximum forward voltage @ I <sub>F</sub> =1A, T <sub>J</sub> =25°C (Note 1)	V <sub>F</sub>	1.3							V	
Maximum reverse current @ rated V <sub>R</sub>	T <sub>J</sub> =25°C	I <sub>R</sub>							5	uA
	T <sub>J</sub> =125°C									
Typical Thermal Resistance	R <sub>θJ-A</sub>	105							°C/W	
	R <sub>θJ-L</sub>	32								
Typical junction capacitance (Note 3)	C <sub>J</sub>	10							pF	
Operating junction temperature rang	T <sub>J</sub>	-55 to +150							°C	
Storage temperature rang	T <sub>STG</sub>	-55 to +150								
Maximum reverse recovery time (Note 2)	t <sub>rr</sub>	150				250	500		ns	

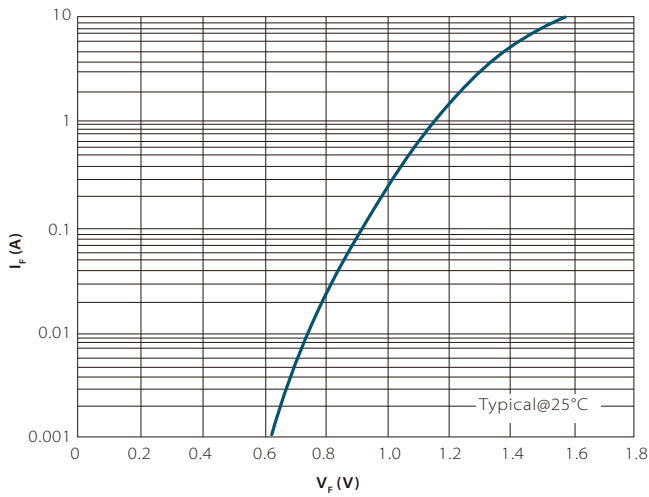
Note 1: Pulse test with PW=0.3ms

Note 2: Reverse Recovery Test Conditions : I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

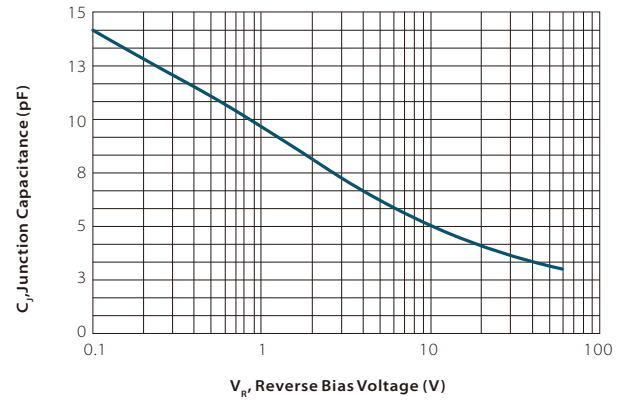
Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C

# CHARACTERISTIC CURVES

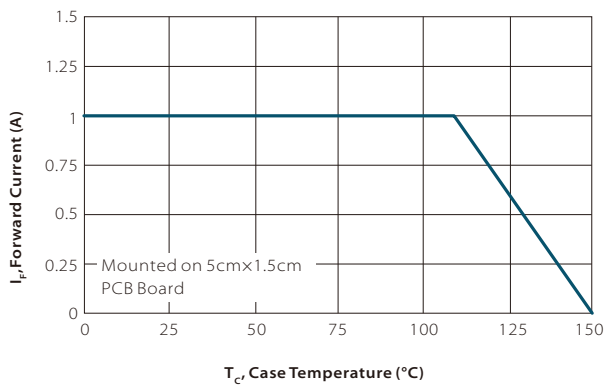
**Fig. 1- Typical Forward Characteristics**



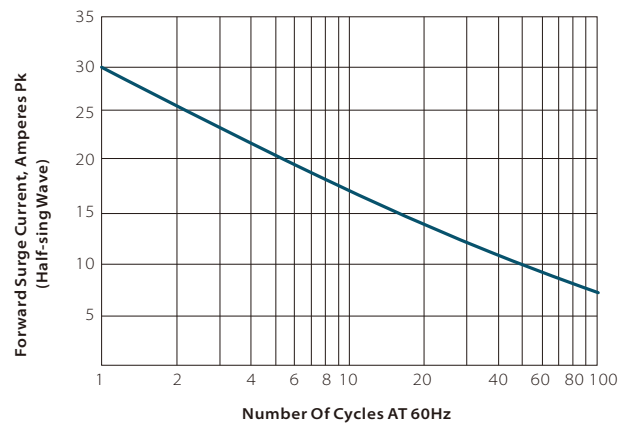
**Fig. 2-Typical Junction Capacitance**

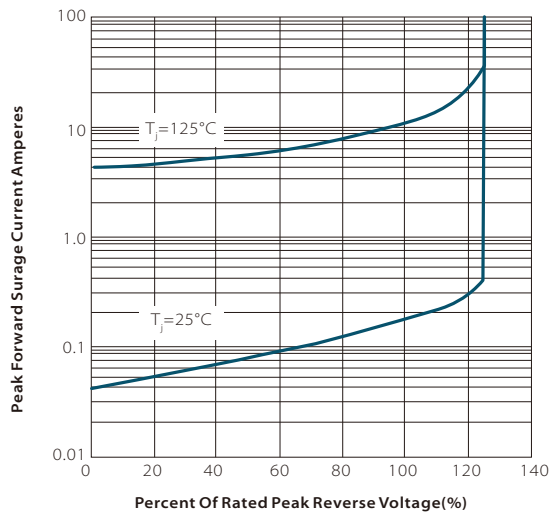


**Fig. 3-Forward Surge Current Derating Curve**



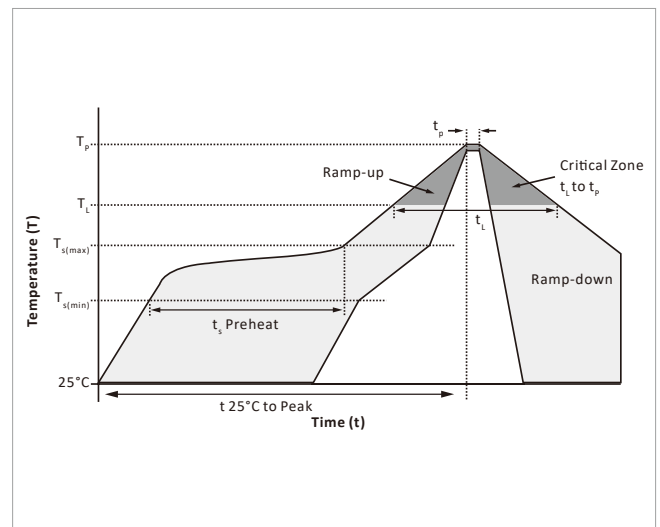
**Fig. 4-Maximum Non-repetitive Surge Current**



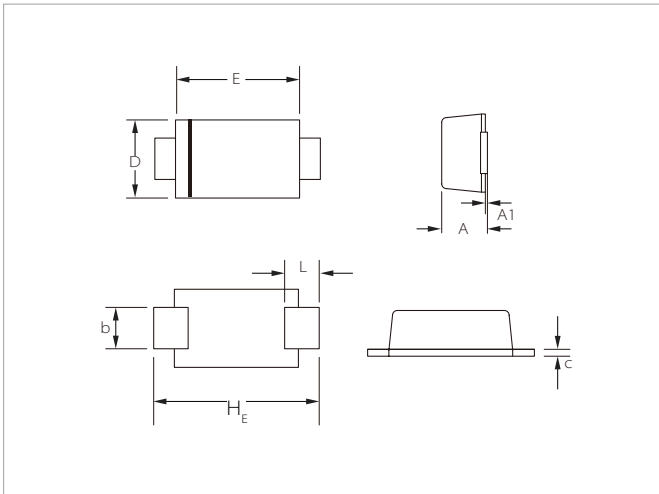
**Fig. 5-Typical Reverse Leakage Characteristics**


## 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) ( $t_p$ )	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

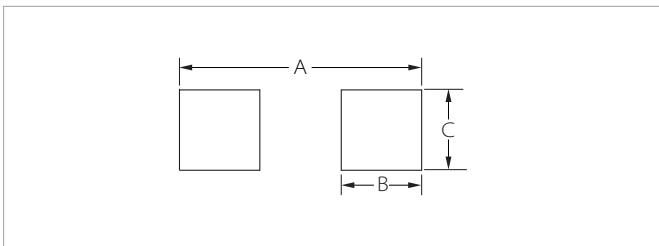


## SOD-123FL PACKAGE INFORMATION



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
RS1000-1010FL	SOD-123FL	3000PCS	7"
		10000PCS	13"

To find your local partner within Semiwell's website : [www.semiwell.com.cn](http://www.semiwell.com.cn)

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