

FEATURES

- | Low Forward Voltage Drop
- | Ideal For Automated Placement
- | Glass Passivated Chip Junction
- | High Surge Current Capability
- | Meet AEC-Q101 Requirements



SOD-123FL



Schematic Symbol

APPLICATIONS

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

APPROVALS

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

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

Parameter		Symbol	1N4001 WQ	1N4002 WQ	1N4003 WQ	1N4004 WQ	1N4005 WQ	1N4006 WQ	1N4007 WQ	Unit
Marking			A1	A2	A3	A4	A5	A6	A7	
Maximum Repetitive Peak Reverse Voltage		V _{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage		V _{RMS}	35	70	140	280	420	560	700	
Maximum DC Blocking Voltage		V _{DC}	50	100	200	400	600	800	1000	
Average Rectified Output Current @60Hz Sine Wave, Resistance Load, TL (FIG.1)		I _O	1.0							A
Forward Surge Current (Non-Repetitive) @60Hz Half-Sine Wave,1 cycle, T _j =25°C		I _{FSM}	30							
Forward Surge Current (Non-Repetitive) @1ms, Square Wave, 1 cycle, T _j =25°C			60							
Maximum Instantaneous Forward Voltage I _{FM} =1.0A		V _F	1.1							V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T _j =25°C	I _R	5							μA
	T _j =125°C		100							
Typical Junction Capacitance Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C		C _J	7							pF
Current Squared Time @1ms≤t≤8.3ms T _j =25°C		I ² t	3.735							A ² s
Operating and Storage Temperature Range		T _J ,T _{STG}	-55 to +150							°C



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

Parameter	Symbol	1N4001 WQ	1N4002 WQ	1N4003 WQ	1N4004 WQ	1N4005 WQ	1N4006 WQ	1N4007 WQ	Unit
Typical Thermal resistance	$R_{\theta J-A}^{(1)}$	70							°C/W
	$R_{\theta J-L}^{(1)}$	20							
	$R_{\theta J-C}^{(1)}$	18							

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_o - T_L Curve

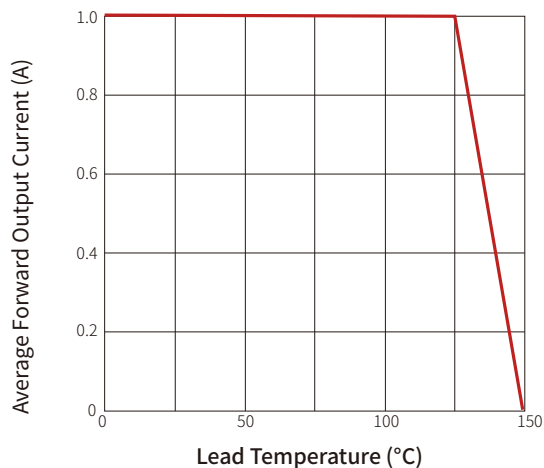


Fig.2 Forward Surge Current Capability

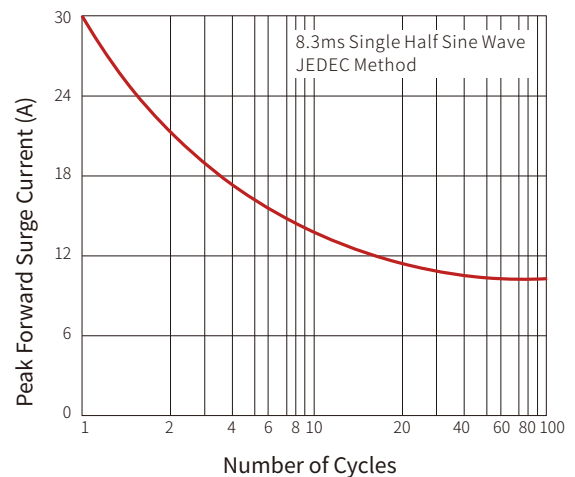


Fig.3 Typical Forward Voltage

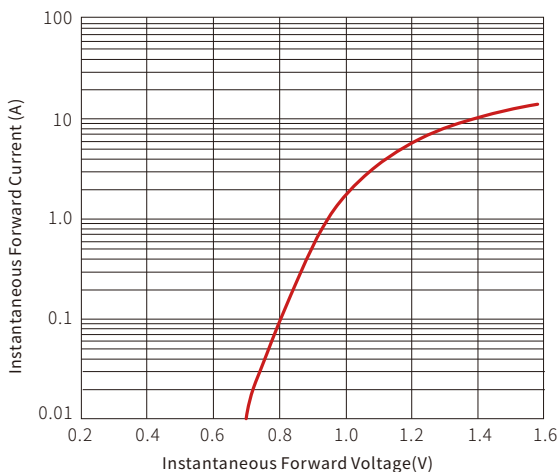
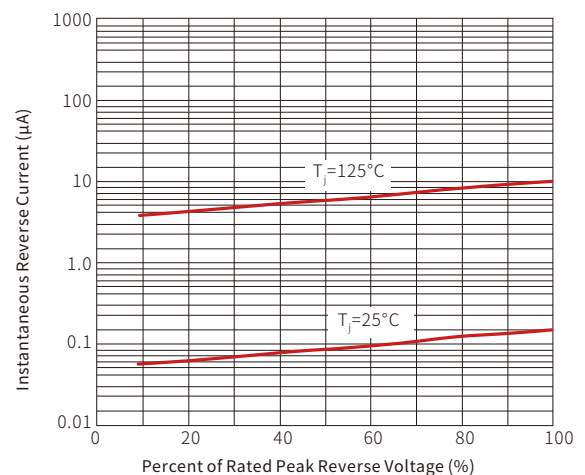
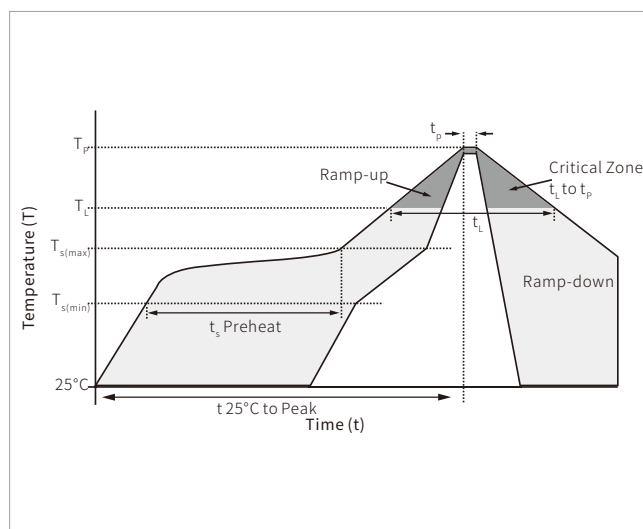


Fig.4 Typical Reverse Characteristics

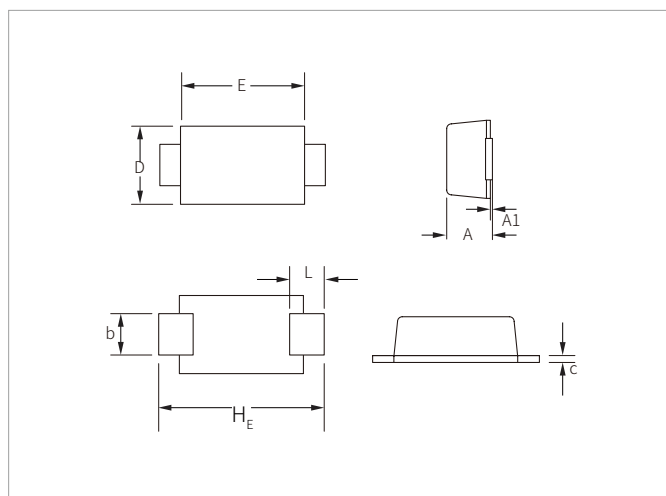


SOLDERING PARAMETERS

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

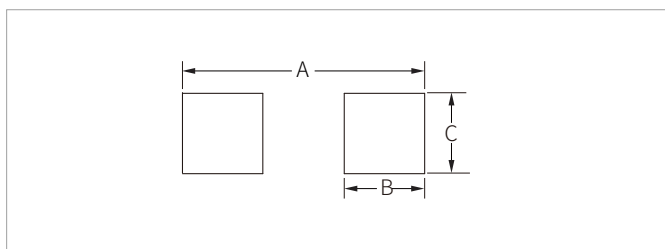


SOD-123FL PACKAGE INFORMATION



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	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
1N4001WQ-1N4007WQ	SOD-123FL	3000PCS	7"

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