

FEATURES

- | Ideal For Automated Placement
- | Glass Passivated Chip Junction
- | Fast switching for high efficiency
- | High forward surge capability
- | Meet AEC-Q101 Requirements



SOD-123FL



Schematic Symbol

APPLICATIONS

- | For use in high efficient 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	H1AQ	H1BQ	H1DQ	H1GQ	H1JQ	H1KQ	H1MQ	Unit
Marking		H1A	H1B	H1D	H1G	H1J	H1K	H1M	
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	I _{FSM}	60							
Maximum Instantaneous Forward Voltage @I _{FM} =1.0A	V _F	1.0		1.3		1.7		V	
Maximum DC Reverse Current at Rated DC Blocking Voltage	T _j =25°C	5							μA
	T _j =125°C	100							
Typical Thermal Resistance ⁽¹⁾	R _{θJ-A} ⁽¹⁾	75							°C/W
	R _{θJ-L} ⁽¹⁾	25							
	R _{θJ-C} ⁽¹⁾	22							
Current Squared Time @1ms ≤ t ≤ 8.3ms T _j =25°C	I ² t	3.735							A ² s
Typical Junction Capacitance Measured At 1MHz And Applied Reverse Voltage Of 4.0 V.D.C	C _j	17		10		7		pF	
Operating junction and storage temperature range	T _j , T _{STG}	-55 to +150							°C
Maximum Reverse Recovery Time I _F =0.5A, I _r =1.0A, I _{rr} =0.25A	t _{rr}	50					75		ns

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

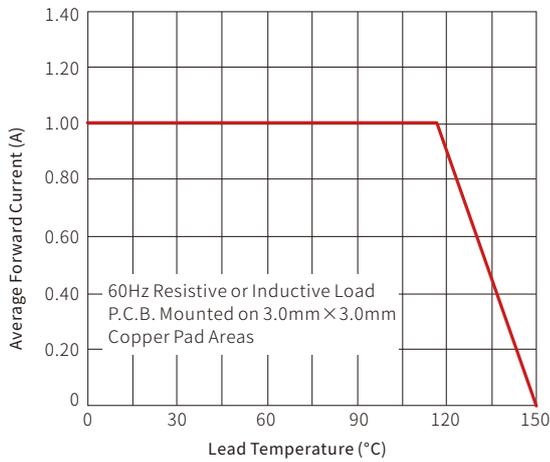


Fig. 2-Forward Surge Current Capability

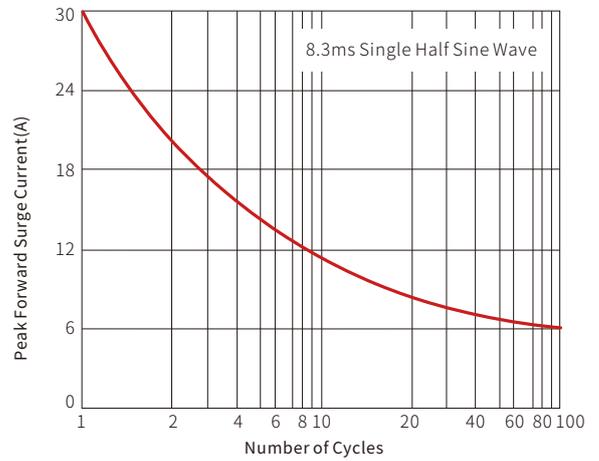


Fig.3 Typical Forward Voltage

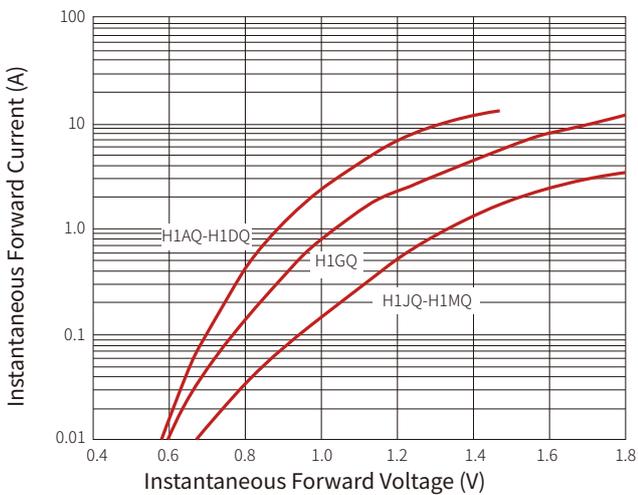


Fig.4 Typical Reverse Characteristics

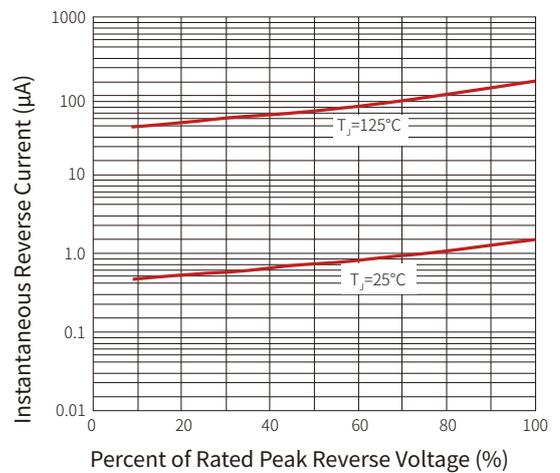
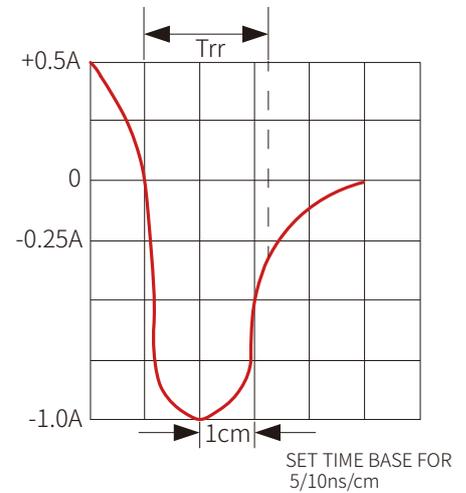
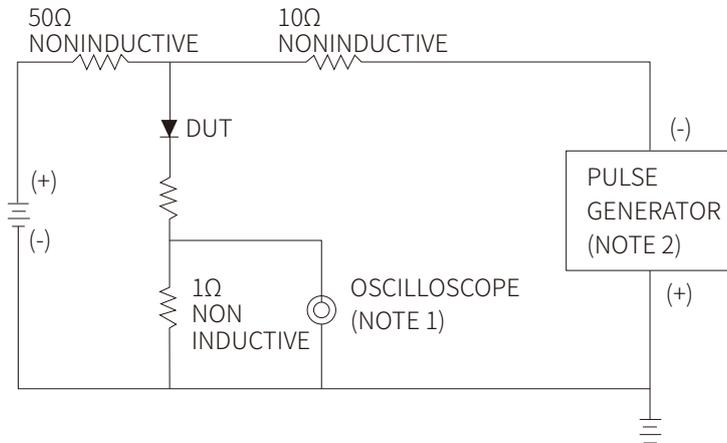
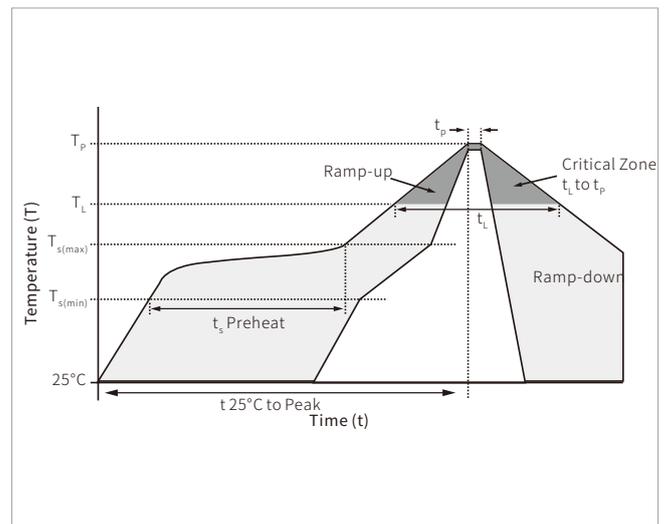


Fig. 5-Diagram Of Circuit And Testing Wave Form Of Reverse Recovery Time


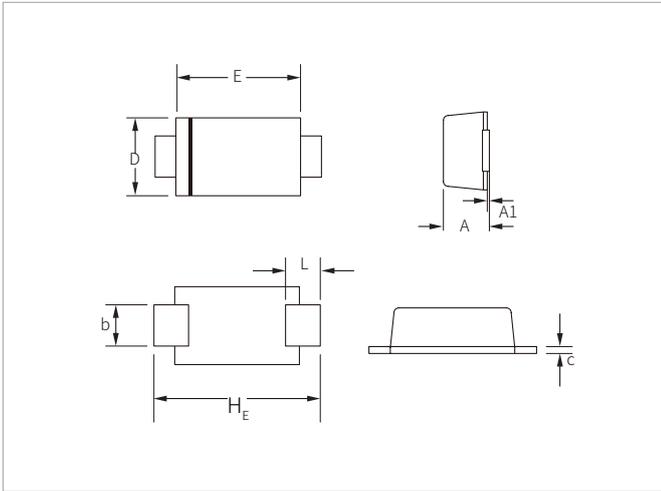
NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF
 2. Rise time = 10 ns max., Source Impedance = 50Ω

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

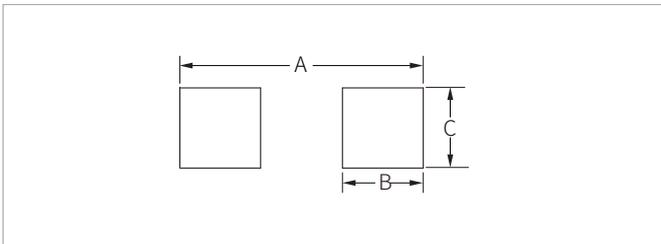


SOD-123FL PACKAGE INFORMATION



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
HE	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
H1AQ-H1MQ	SOD-123FL	3000PCS	7"

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