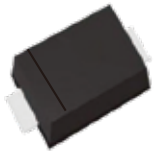
FEATURES

- Low Profile Package
- Ideal For Automated Placement
- Glass Passivated Chip Junction
- High Forward Surge Capability
- Super Fast Reverse Recovery Time



SOD-123FL

Schematic Symbol

MECHANICAL DATA

- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Polarity: Cathode line denotes the cathode end

APPROVALS

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

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

Parameter		Symbol	ES2000 FL	ES2001 FL	ES2015 FL	ES2002 FL	ES2003 FL	ES2004 FL	ES2005 FL	ES2006 FL	ES2008 FL	Unit
Marking			ES2A	ES2B	ES2C	ES2D	ES2F	ES2G	ES2H	ES2J	ES2K	
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	50	100	150	200	300	400	500	600	800	V
Maximum RMS Voltage		V_{RMS}	35	70	105	140	210	280	350	420	560	V
Maximum DC Blocking Voltage		V_{DC}	50	100	150	200	300	400	500	600	800	V
Average Rectified Output Current @60Hz Sine Wave, Resistance Load, TL (Fig.1)		I_O	2.0									A
Forward Surge Current (Non-Repetitive) @60Hz Half-Sine Wave,1 cycle, Tj=25°C		I_{FSM}	50									A
Forward Surge Current (Non-Repetitive) @1ms, Square Wave, 1 Cycle, Tj=25°C		I_{FSM}	100									A
Maximum Instantaneous Forward Voltage @I_{FM}=2A		V_F	1.0				1.3		1.7		2.2	V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_J=25°C	I_R	5.0									μA
	T_J=125°C		100									μA
Typical Thermal Resistance(1)		$R_{\theta J-A}$	90									°C/W
		$R_{\theta J-L}$	30									°C/W
Current Squared Time @1ms≤t≤8.3ms Tj=25°C		I^2t	10.375									A^2s
Typical Junction Capacitance Measured At 1MHz And Applied Reverse Voltage Of 4.0 V.D.C		C_J	30				16		12			pF
Operating Junction Temperature Range		T_J	-55 to +150									°C
Storage Temperature Range		T_{STG}	-55 to +150									°C
Maximum Reverse Recovery Time I_F=0.5A,I_r=1.0A, I_{rr}=0.25A		t_{rr}	35									ns

Note: (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

CHARACTERISTIC CURVES

Fig. 1- I_o-T_L Curve

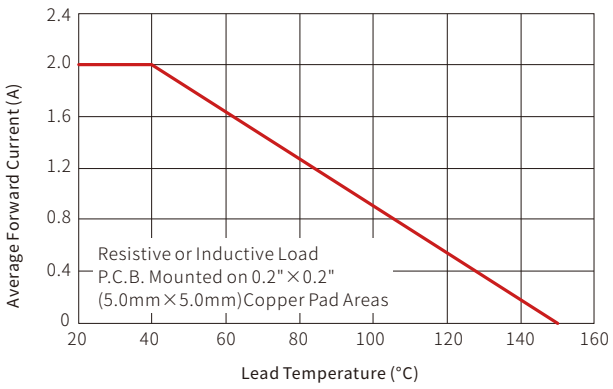


Fig. 2-Surge Forward Current Capability

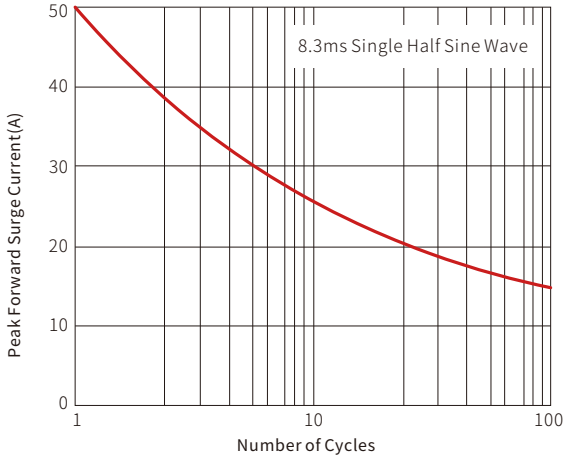


Fig. 3-Typical Forward Voltage

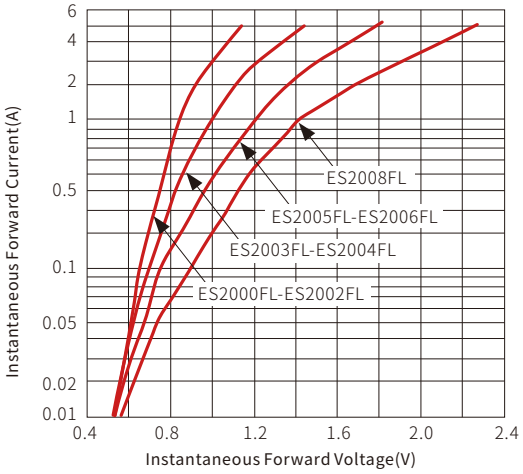


Fig. 4-Typical Reverse Characteristics

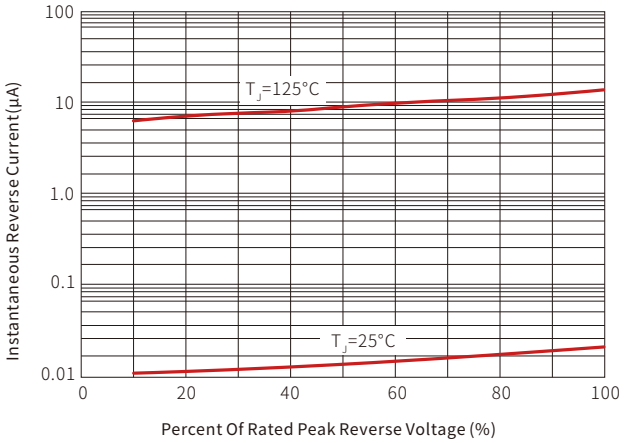
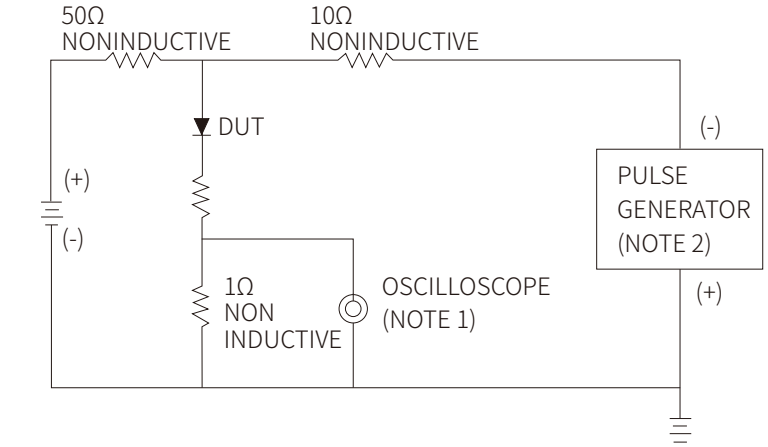
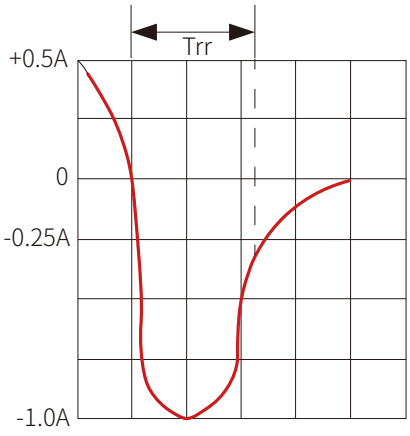


Fig. 5-Diagram Of Circuit And Testing Wave Form Of Reverse Recovery Time

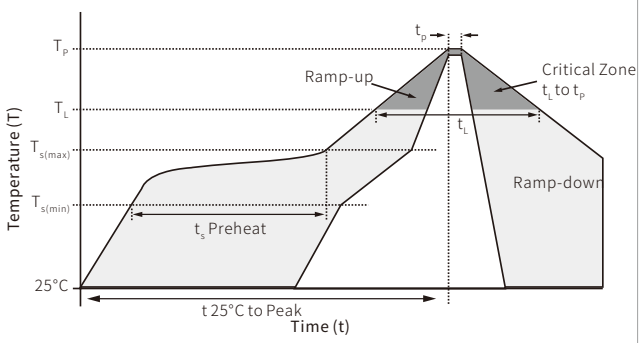




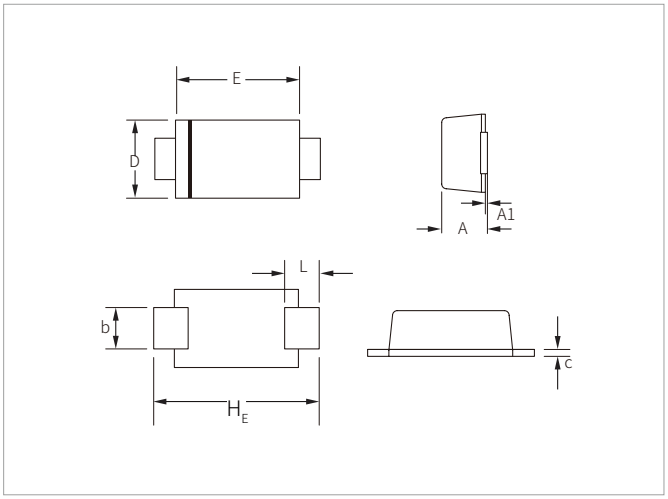
NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF
2. Rise time = 10 ns max., Source Impedance = 50Ω

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

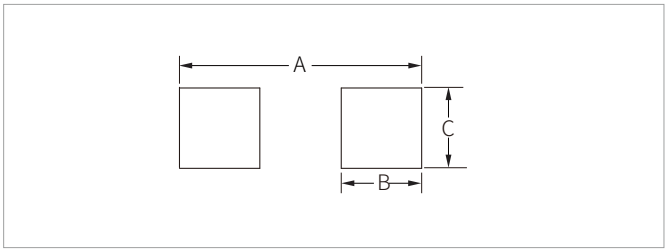


SOD-123FL PACKAGE INFORMATION



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
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
ES2000-2008FL	SOD-123FL	3000PCS	7”

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