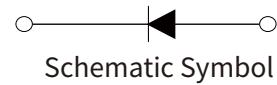


FEATURES

- | Ideal for automated placement
- | Glass passivated chip junction
- | Super fast switching for high efficiency
- | High forward surge capability



SOD-123FL



Schematic Symbol

MECHANICAL DATA

- | For use in super fast 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 ($T_A=25^\circ\text{C}$)

Parameter	Symbol	ES1000 FL	ES1001 FL	ES1002 FL	ES1003 FL	ES1004 FL	ES1006 FL	Unit
Marking		ES1A	ES1B	ES1D	ES1F	ES1G	ES1J	
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	300	400	600	
Maximum RMS Voltage	V_{RMS}	35	70	140	210	280	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	300	400	600	
Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)	I_o				1.0			
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}				30			A
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, $T_j=25^\circ\text{C}$					60			
Maximum instantaneous forward voltage $I_{FM}=1.0\text{A}$	V_F		0.95			1.3	1.7	V
Maximum DC reverse current at rated DC blocking voltage	$I_j=25^\circ\text{C}$				5			
	$T_j=125^\circ\text{C}$				100			μA
Typical Thermal Resistance	$R_{\theta J-A}$				60			
	$R_{\theta J-L}$				20			$^\circ\text{C}/\text{W}$
	$R_{\theta J-C}$				18			
Typical junction capacitance Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C_J		18		12	7		pF
Maximum reverse recovery time $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$	t_{rr}				35			ns
Current squared time @1ms $\leq t \leq 8.3\text{ms}$ $T_j=25^\circ\text{C}$	I^2t				3.735			A^2s
Operating junction and storage temperature range	T_J, T_{STG}				-55 to +150			$^\circ\text{C}$

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- Io-TL Curve

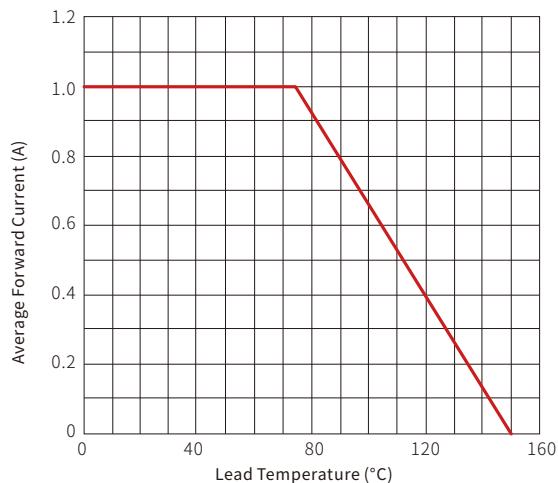


Fig. 2-Surge Forward Current Capability

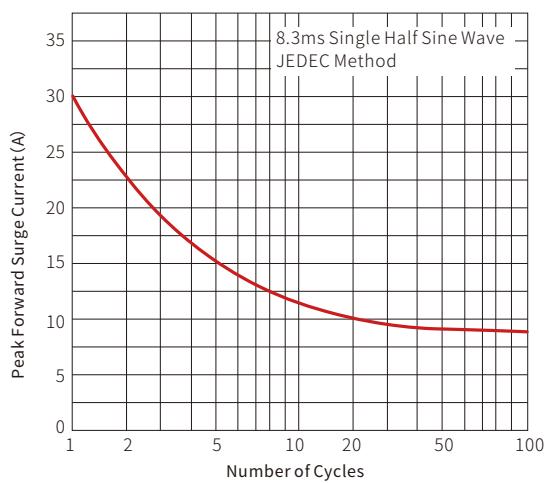


Fig. 3-Typical Forward Voltage

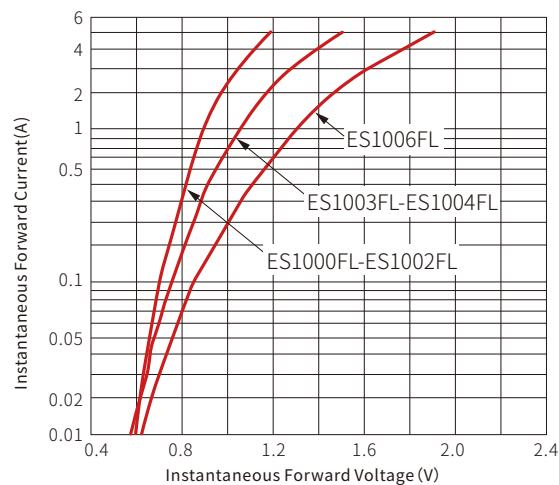
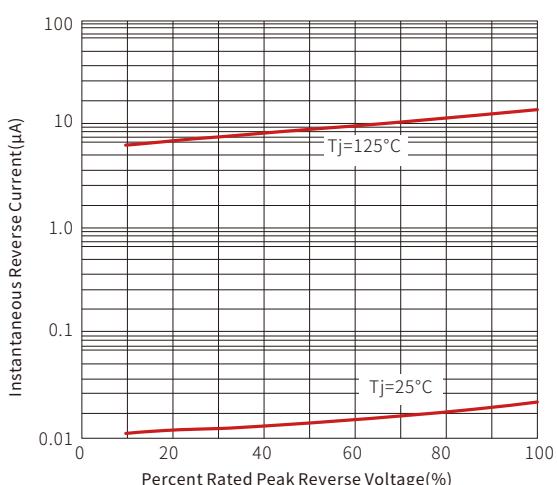
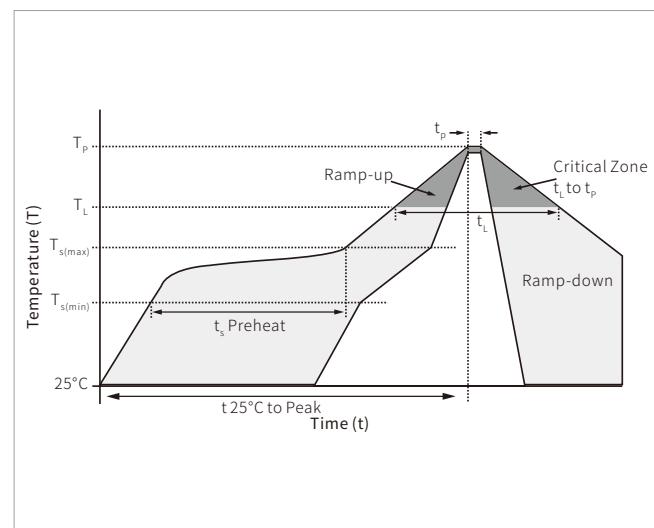


Fig. 4-Typical Reverse Characteristics

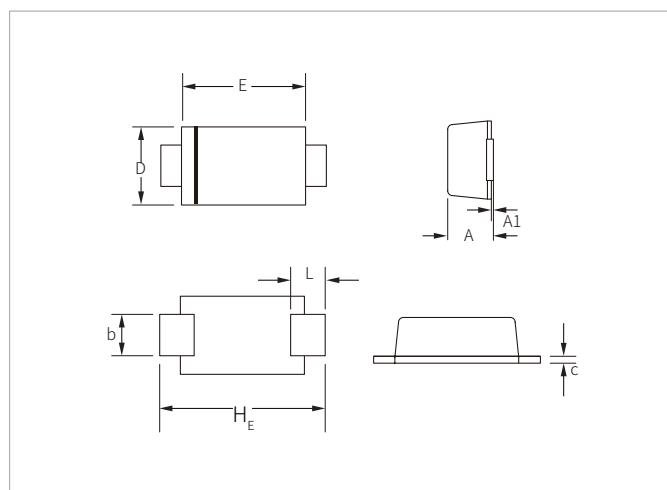


SOLDERING PARAMETERS

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
Reflow	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
	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

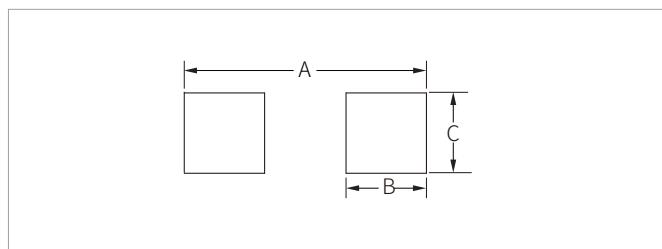


SOD-123FL PACKAGE INFORMATION



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
ES1000-1006FL	SOD-123FL	3000PCS	7"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

[Https://www.semiware.com](https://www.semiware.com)

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



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To find your local partner within Semiware's global website: www.semiware.com

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