

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°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	V
Maximum RMS Voltage		V _{RMS}	35	70	140	210	280	420	
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						A
Surge peak forward current,8.3ms single half sine-wave superimposed on rated load per diode		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	0.95			1.3		1.7	V
Maximum DC reverse current at rated DC blocking voltage	T _J =25°C	I _R	5						μA
	T _J =125°C		100						
Typical Thermal Resistance		R _{θJ-A}	60						°C/W
		R _{θJ-L}	20						
		R _{θJ-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 =0.5A,I _R =1.0A, I _{rr} =0.25A		t _{rr}	35						ns
Current squared time @1ms≤t≤8.3ms T _J =25°C		I ² t	3.735						A ² s
Operating junction and storage temperature range		T _J , T _{STG}	-55 to +150						°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- I_o -TL Curve

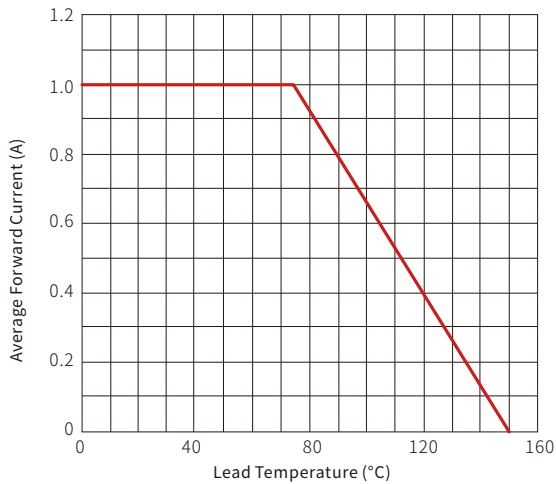


Fig. 2-Surge Forward Current Capability

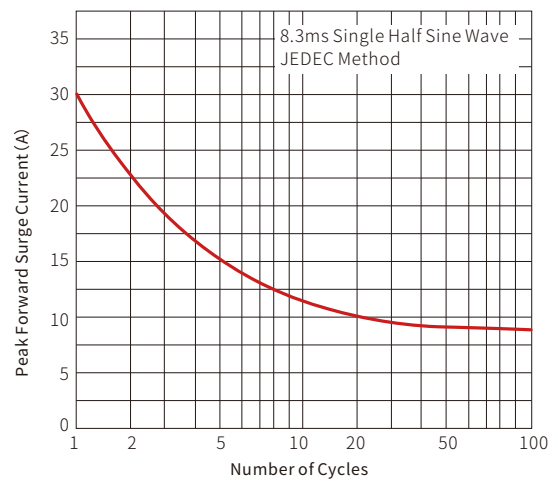


Fig. 3-Typical Forward Voltage

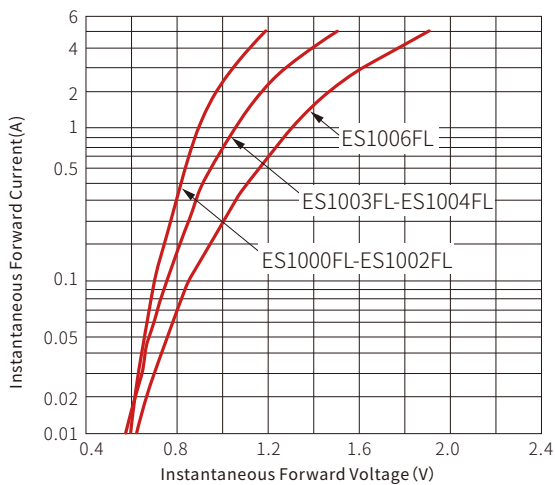
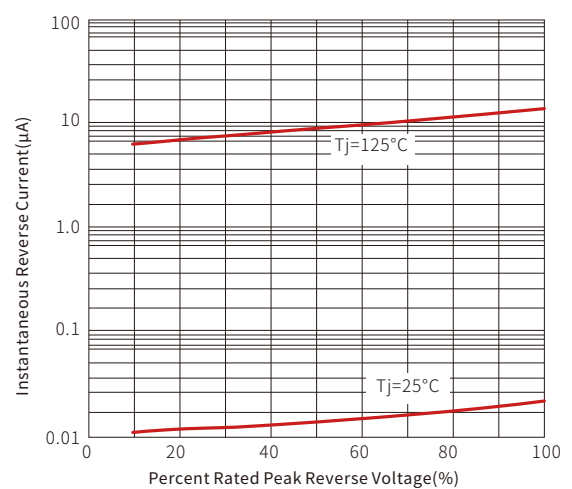
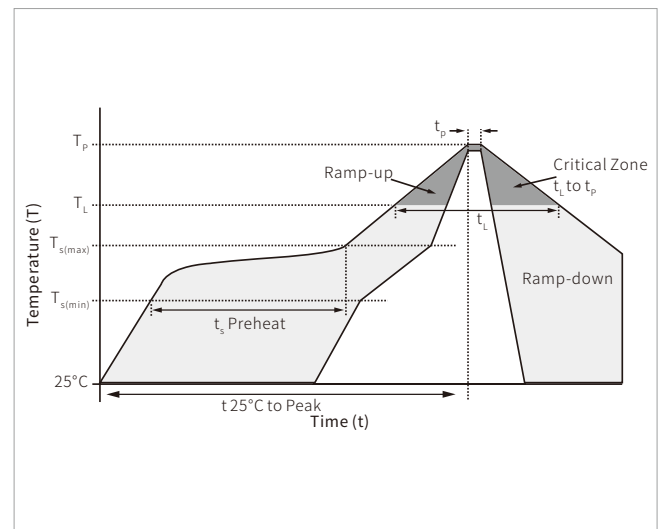


Fig. 4-Typical Reverse Characteristics

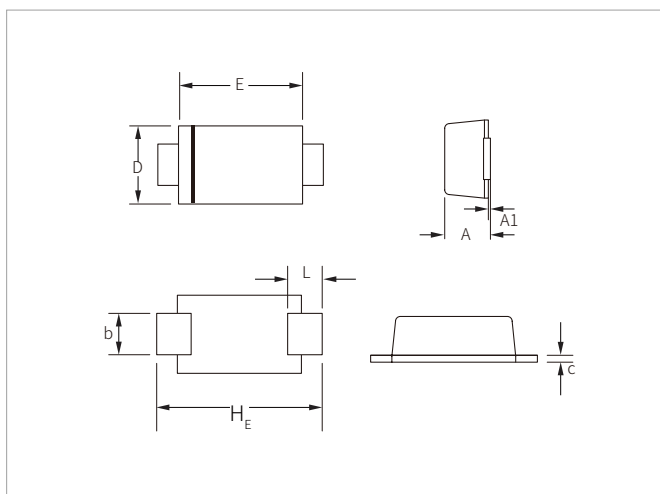


SOLDERING PARAMETERS

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
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

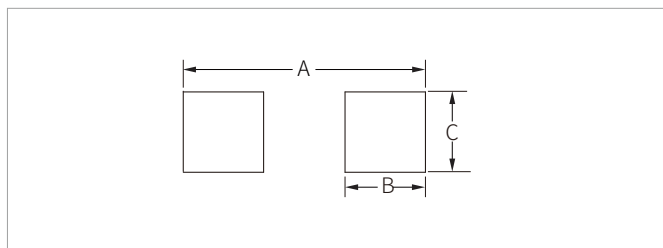


SOD-123FL PACKAGE INFORMATION



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
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>

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

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Website



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