



ES1AUL THRU ES1JUL

1.0AMP Surface Mount Super Fast Recovery Rectifier

1. Features

- Glass passivated chip junction
- For surface mounted application.
- Low forward voltage drop.
- High current capability.
- High reliability.
- Super Fast reverse recovery time.
- Meets MSL level 1, per J-STD-020.

SOD-123FL



2. Mechanical Data

- Case: Molded plastic SOD-123FL
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking:marked on body.

Cathode  Anode

3. Maximum Ratings and Electrical Characteristics

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	ES1AUL	ES1BUL	ES1DUL	ES1GUL	ES1JUL	UNIT
	Code	EAU	EBU	EDU	EGU	EJU	
Maximum Recurrent Peak Reverse Voltage	V _{RRM}	50	100	200	400	600	V
Maximum RMS Voltage	V _{RMS}	35	70	140	280	420	V
Maximum DC Blocking Voltage	V _{DC}	50	100	200	400	600	V
Average Rectified Output Current @T _L =100°C	I _{F(AV)}	1.0					A
Peak Forward Surge Current 8.3ms @T _j =25°C	I _{FSM}	35					A
Single half sine-wave superimposed @T _j =125°C on rated load (JEDEC Method)		28					
I ² t Rating for Fusing (t < 8.3ms)	I ² t	5.08					A ² S
Maximum Instantaneous Forward Voltage @I _F =1A	V _{FM}	0.95			1.3	1.7	V
Maximum DC reverse current @T _j =25°C	I _R	5.0					uA
at rated DC blocking voltage @T _j =125°C		100					
Maximum Reverse Recovery Time (Note 1)	T _{RR}	35					ns
Typical Junction Capacitance (Note 2)	C _j	20			7		pF
Typical Thermal Resistance	R _{θJA}	120					°C/W
	R _{θJL}	17					
	R _{θJC}	12					
Operating Temperature Range	T _j	-55 to+150					°C
Storage Temperature Range	T _{STG}	-55 to+150					°C

Note:

1. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A.
2. Measured at 1.0 MHz and Applied reverse Voltage of 4.0V D.C



5. Rating And Characteristic Curves

Fig. 1 Forward Current Derating Curve

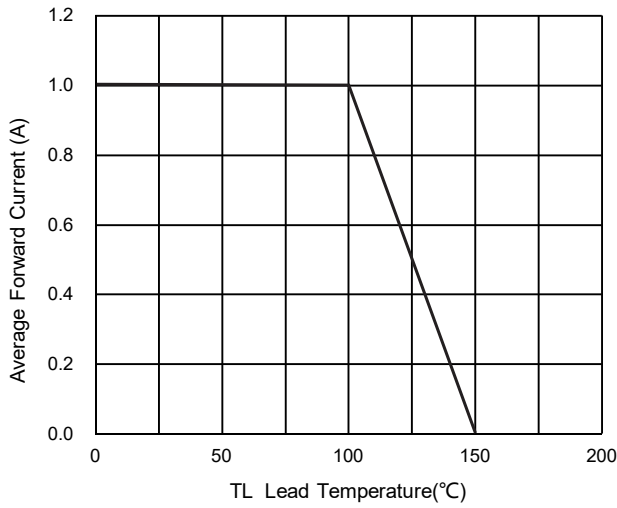


Fig. 2 Typical Forward Characteristics

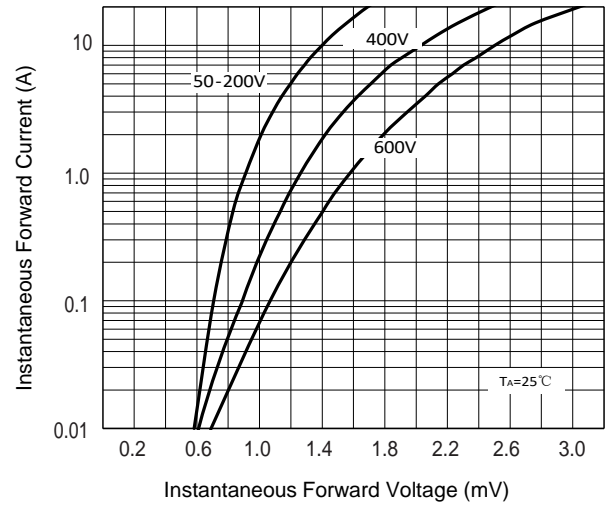


Fig. 3 Forward Surge Current Capability

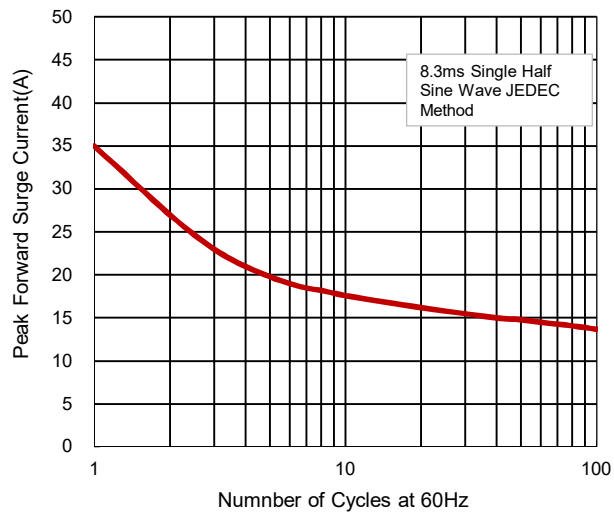
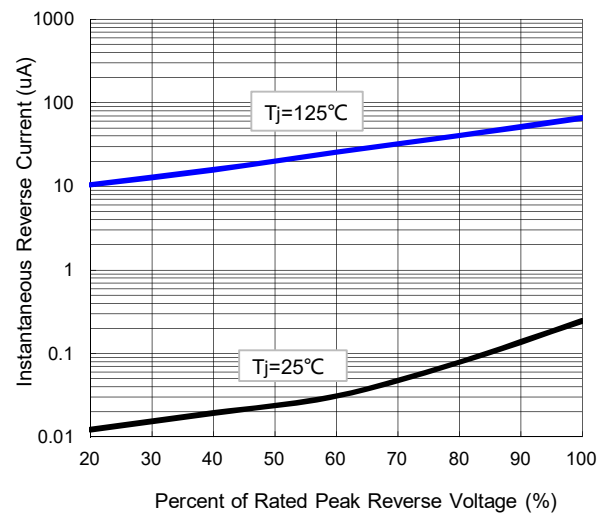
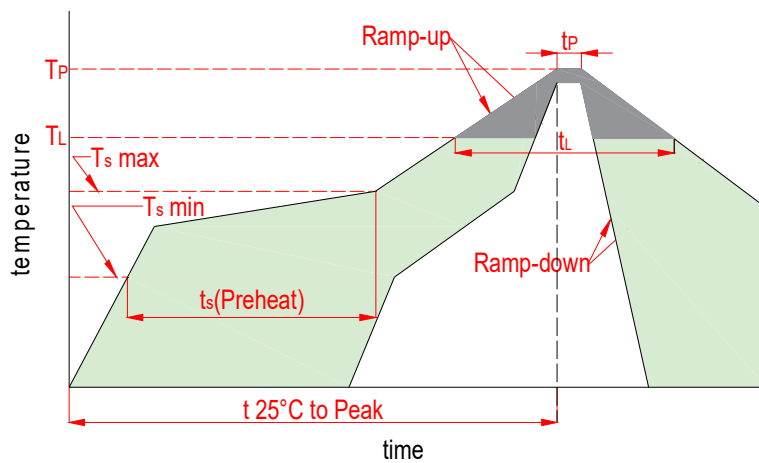


Fig.4 Typical Reverse Characteristics



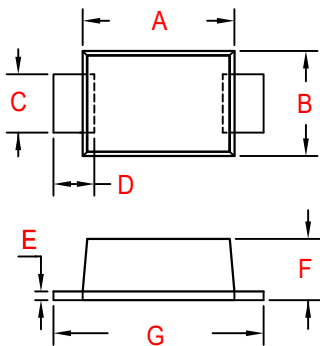


6. Soldering Parameters



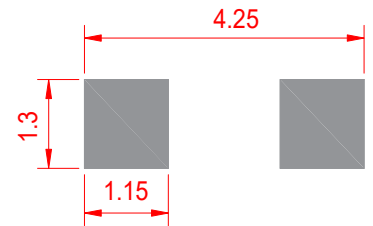
Reflow Condition		Lead-free
Pre Heat	Temp. min($T_s(\min)$)	150℃
	Temp. max($T_s(\min)$)	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
$T_s(\max)$ to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp. (T_L)(Liquidus)	217℃
	Temp. (t_L)(Liquidus)	60~150s
Peak Temp. (T_p)		260 ^{+0/-5} ℃
Time within actual peak Temp. (t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe. (T_p)		8 minutes max
Do not exceed		260℃

7. Dimensions

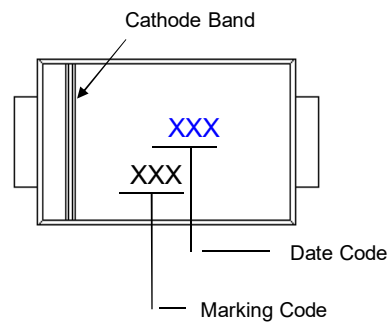
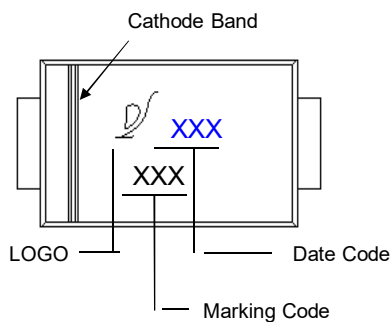


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.094	0.110	2.4	2.8
B	0.063	0.079	1.6	2.0
C	0.031	0.047	0.8	1.2
D	0.022	0.037	0.55	0.95
E	0.004	0.008	0.1	0.2
F	0.035	0.043	0.9	1.1
G	0.134	0.150	3.4	3.8

Mounting PAD Layout



8. Part Marking System



9. Package Information

Package	Tape Width (mm)	Reel Size		Quantity(pcs)
		mm	inch	
SOD-123FL	8	178	7	3000



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