



US1AL THRU US1ML

1.0 AMP Surface Mount High Efficient Rectifier

1. Features

- Glass passivated chip junction
- For surface mounted application.
- Low forward voltage drop.
- High current capability.
- High reliability.
- Fast switching for high efficiency
- Meets MSL level 1, per J-STD-020.

SOD-123FL



Cathode  Anode

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.

3. Maximum Ratings and Electrical Characteristics

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

PARAMETER	SYMBOL	US1AL	US1BL	US1DL	US1GL	US1JL	US1KL	US1ML	UNIT
	Code	UA	UB	UD	UG	UJ	UK	UM	
Maximum Recurrent Peak Reverse Voltage	VRRM	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	VRMS	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	VDC	50	100	200	400	600	800	1000	V
Average Rectified Output Current @TL=90 °C	IF(AV)	1.0							A
Peak Forward Surge Current 8.3ms @Tj=25°C	IFSM	30							A
Single half sine-wave superimposed @Tj=125°C on rated load (JEDEC Method)		24							
I²t Rating for Fusing (t < 8.3ms)	I²t	3.74							A²S
Maximum Instantaneous Forward Voltage @IF=1A	VFM	1.0			1.3	1.7			V
Maximum DC reverse current @Tj=25°C	IR	5.0							uA
at rated DC blocking voltage @Tj=125°C		100							
Maximum Reverse Recovery Time (Note 1)	TRR	50				75			ns
Typical Junction Capacitance (Note 2)	Cj	17			12	7			pF
Typical Thermal Resistance	RθJA	120							°C/W
	RθJL	20							
	RθJC	25							
Operating Temperature Range	Tj	-55 to+150							°C
Storage Temperature Range	TSTG	-55 to+150							°C

Note:

1. Reverse RecoveryTest Conditions:IF=0.5A,IR=1.0A,IRR=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

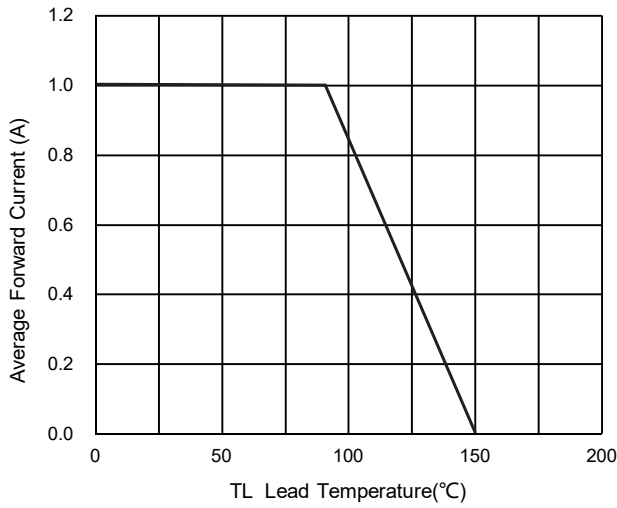


Fig. 2 Typical Forward Characteristics

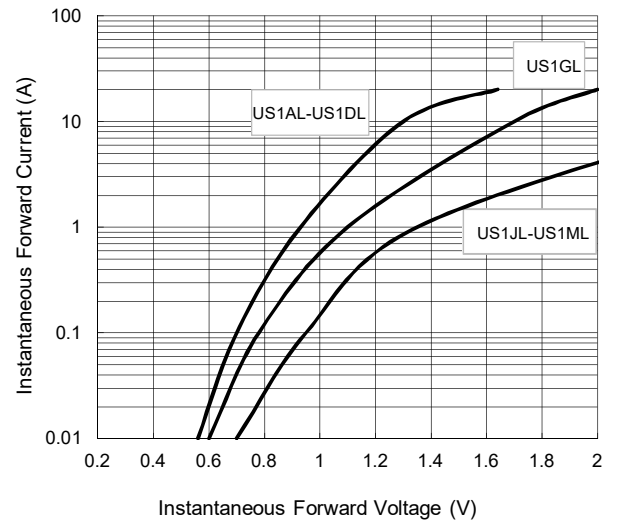


Fig. 3 Forward Surge Current Capability

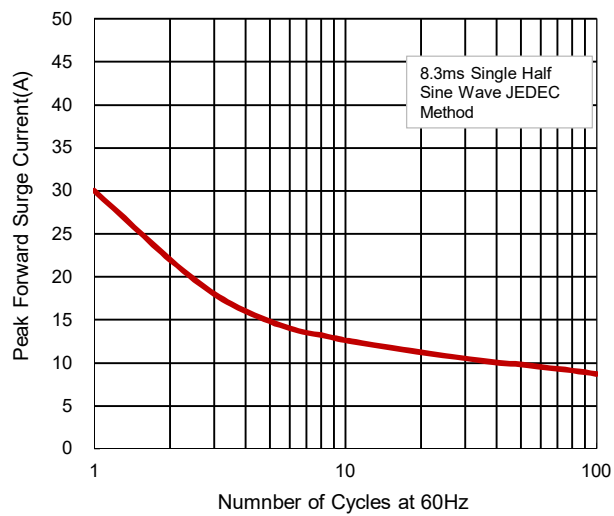
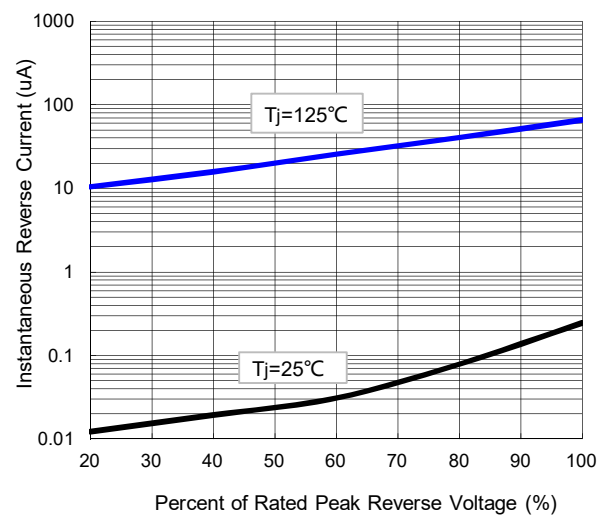


Fig.4 Typical Reverse Characteristics

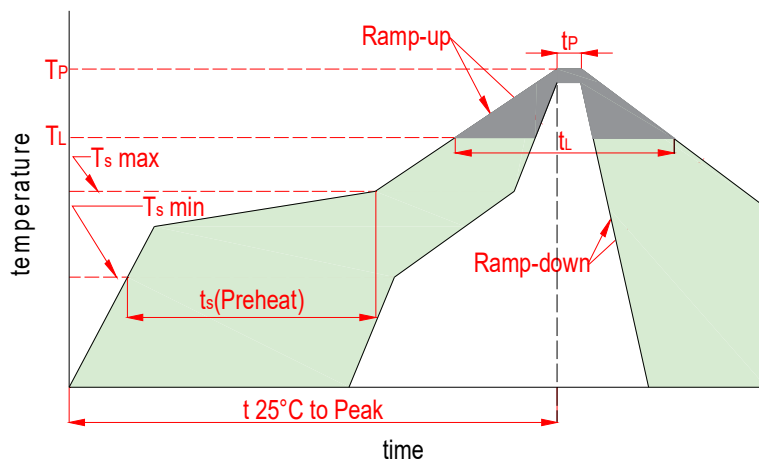




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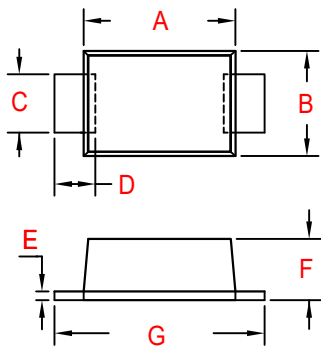
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6. Soldering Parameters



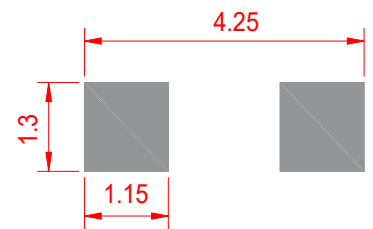
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_p)		260 ^{+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

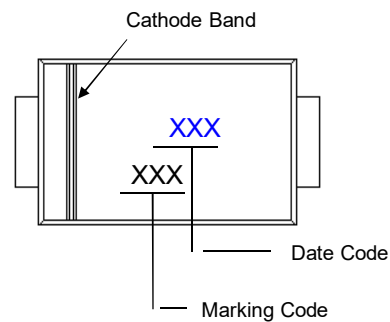
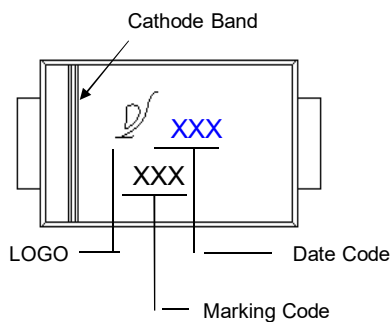


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.094	0.110	2.4	2.8
B	0.063	0.079	1.6	2.0
C	0.031	0.047	0.8	1.2
D	0.022	0.037	0.55	0.95
E	0.004	0.008	0.1	0.2
F	0.035	0.043	0.9	1.1
G	0.134	0.150	3.4	3.8

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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