



FR3A THRU FR3M

3.0 AMP Surface Mount Fast Recovery Rectifier

1. Features

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

2. Mechanical Data

- Case:Molded Plastic,SMB(DO-214AA) .
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750,Method-2026.
- Marking:marked on body.

SMB(DO-214AA)



3. Maximum Ratings and Electrical Characteristics

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

PARAMETER	SYMBOL	FR3A	FR3B	FR3D	FR3G	FR3J	FR3K	FR3M	UNIT
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)	3.0							A
Peak Forward Surge Current 8.3ms @Tj=25°C	IFSM	110							A
Single half sine-wave superimposed @Tj=125°C on rated load (JEDEC Method)		88							
I²t Rating for Fusing (t < 8.3ms)	I²t	50.2							A²S
Maximum Instantaneous Forward Voltage @IF=3A	VFM	1.3							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	150				250	500		ns
Typical Junction Capacitance (Note 2)	Cj	65				25			pF
Typical Thermal Resistance	RθJA	80							°C/W
	RθJL	15							
	RθJC	10							
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



4. Rating And Characteristic Curves

Fig. 1 Forward Current Derating Curve

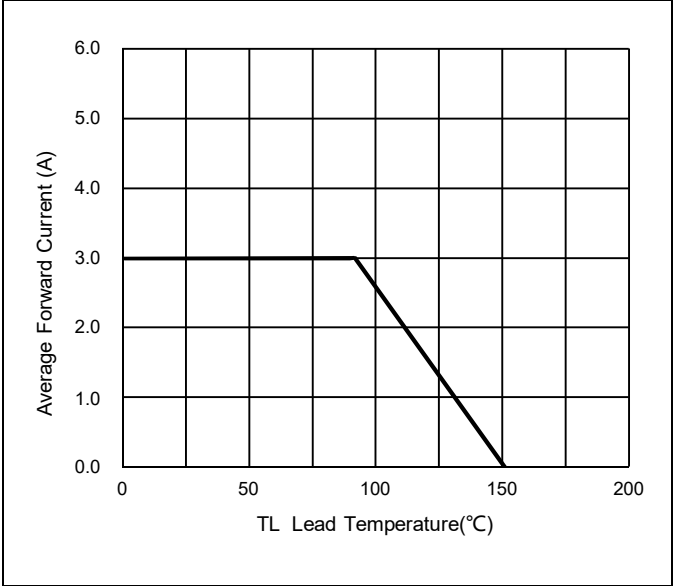


Fig. 2 Typical Forward Characteristics

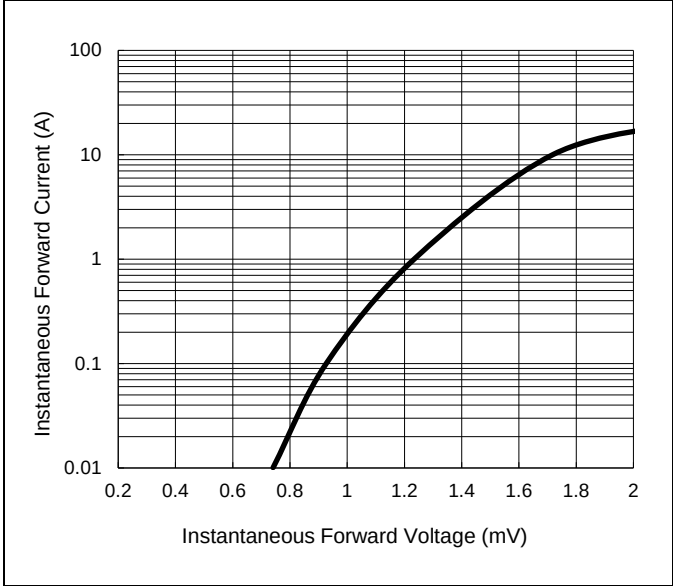


Fig. 3 Forward Surge Current Capability

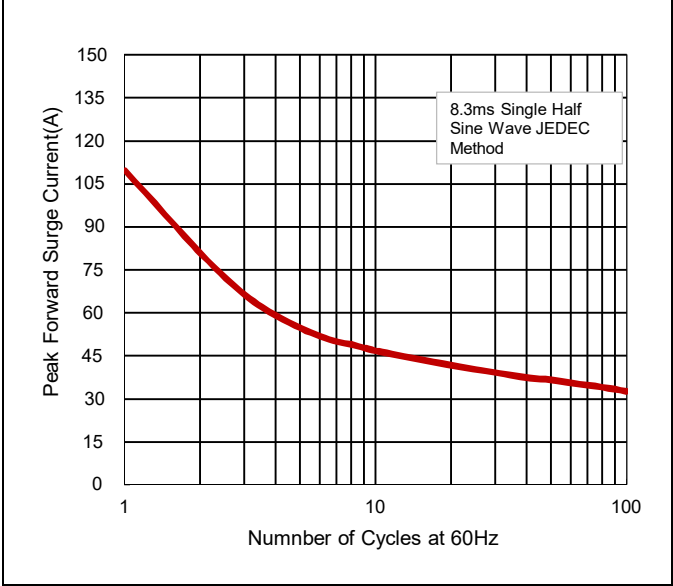
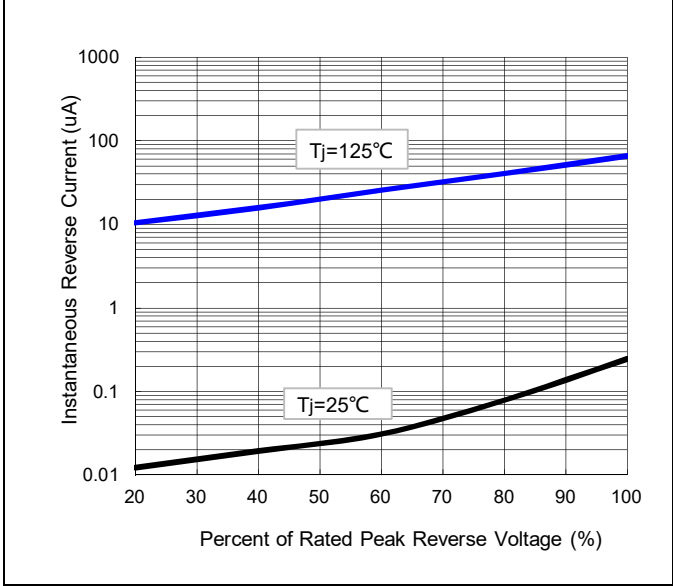


Fig.4 Typical Reverse Characteristics

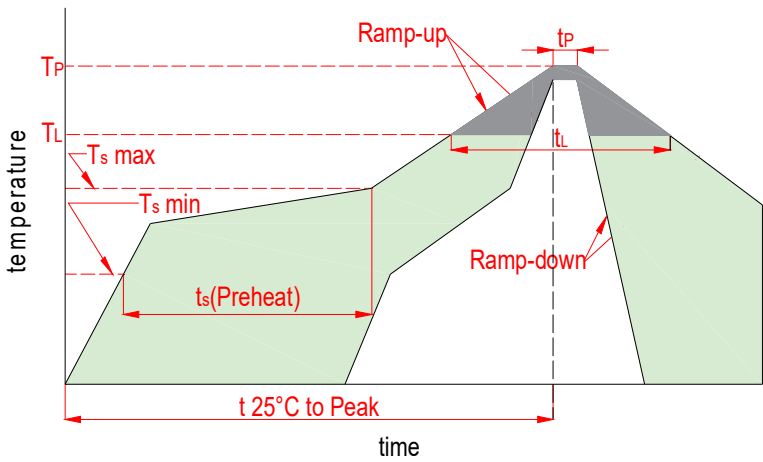




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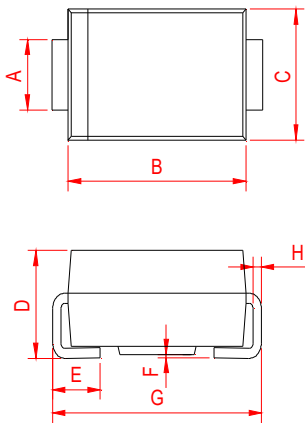
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5. Soldering Parameters



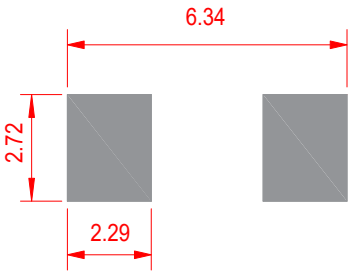
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260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

6. Dimensions

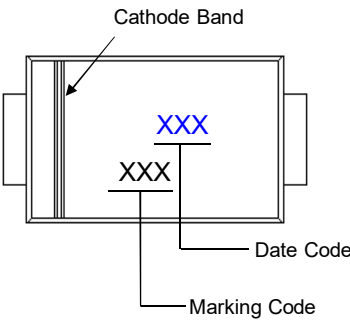
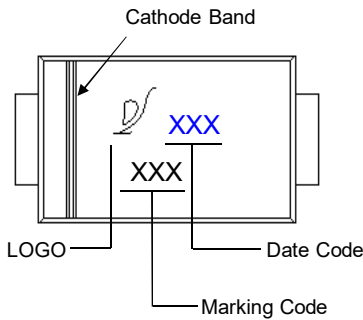


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.071	0.087	1.8	2.2
B	0.163	0.187	4.15	4.75
C	0.130	0.154	3.3	3.9
D	0.084	0.102	2.13	2.6
E	0.033	0.057	0.85	1.45
F	0.000	0.008	0.0	0.2
G	0.197	0.217	5.0	5.5
H	0.004	0.012	0.1	0.3

Mounting PAD Layout



7. Part Marking System



8. Package Information

Package	Tape Width (mm)	Reel Size		Quantity(pcs)
		mm	inch	
SMB(DO-214AA)	12	330	13	3000



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