

# FR1AF SERIES

## SURFACE MOUNT FAST RECOVERY RECTIFIER

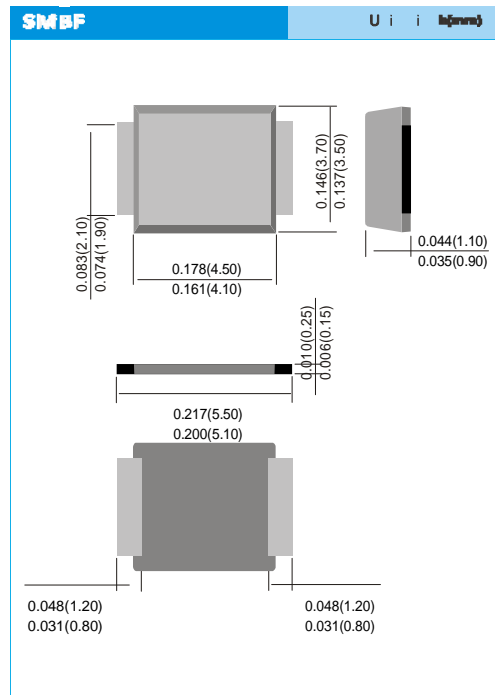
<b>VOLTAGE</b>	<b>50 to 600 Volts</b>	<b>CURRENT</b>	<b>1.0 Ampere</b>
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### FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Fast Recovery times for high efficiency
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated junction
- Lead free in comply with EU RoHS 2002/95/EC directives.

### MECHANICAL DATA

- Case: SMBF molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0018 ounce, 0.05 grams
- Polarity: Color band denotes cathode end



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

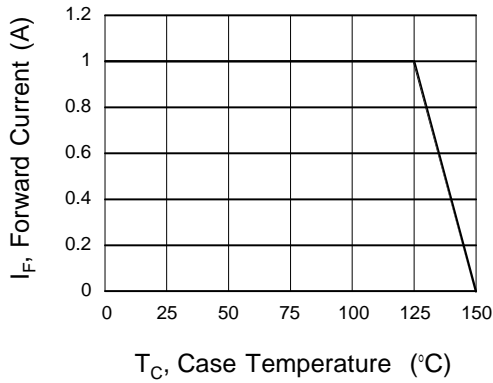
Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

PARAMETER	SYMBOL	FR1AF	FR1BF	FR1DF	FR1GF	FR1JF	UNITS
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
Maximum Average Forward Rectified Current	$I_{F(AV)}$	1.0					A
Peak Forward Surge Current :8.3ms single half sine-wave superimposed on rated load(JEDEC method)per diode	$I_{FSM}$	30					A
Maximum Forward Voltage at 1A	$V_F$	1.3					V
Maximum DC Reverse Current $T_J = 25^\circ C$	$I_R$	1.0					$\mu A$
Typical Junction Capacitance (VR=4V f=1MHZ)	$C_J$	16				9	pF
Typical Thermal Resistance (Note 1) (Note 2)	$R_{\theta JL}$ $R_{\theta JA}$	21 135					$^\circ C / W$
Maximum Reverse Recovery Time	$T_{rr}$	150				250	nS
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150					$^\circ C$

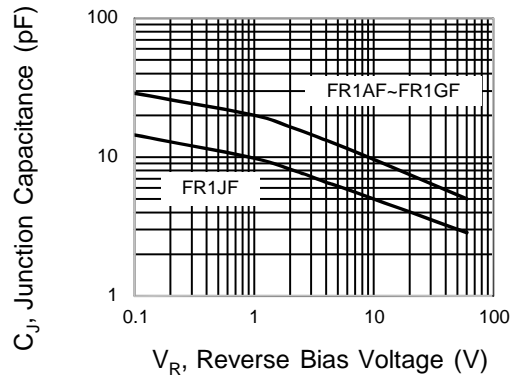
NOTES : 1. Mounted on an FR4 PCB, single-sided copper, with 48cm<sup>2</sup> copper pad area.  
2. Mounted on an FR4 PCB, single-sided copper, mini pad.

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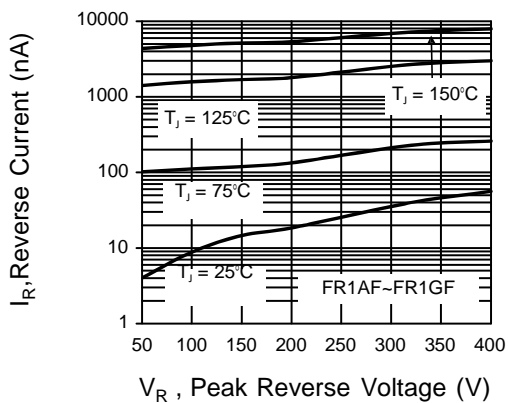
## RATING AND CHARACTERISTIC CURVES



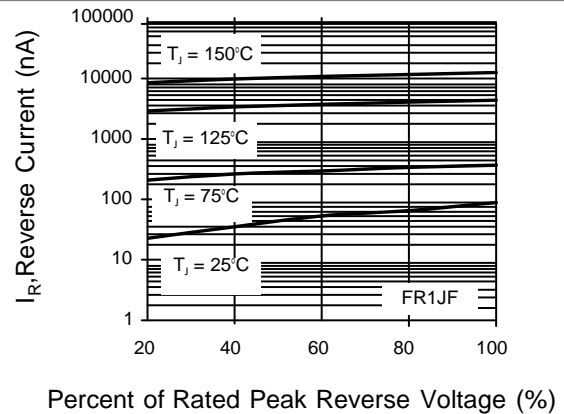
**Fig.1 Forward Current Derating Curve**



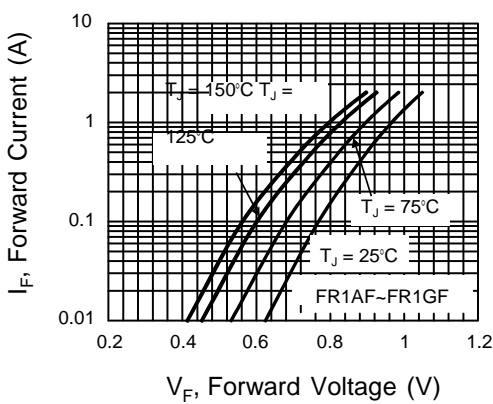
**Fig.2 Typical Junction Capacitance**



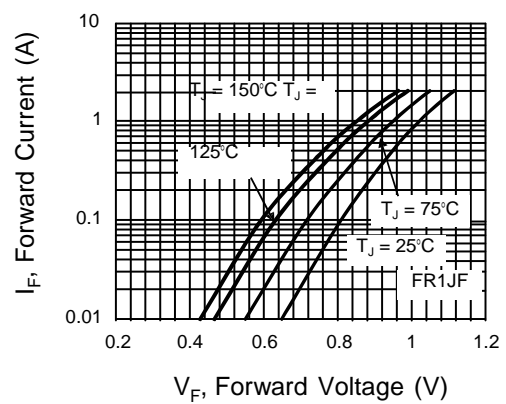
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Reverse Characteristics**



**Fig.5 Typical Forward Characteristics**



**Fig.6 Typical Forward Characteristics**