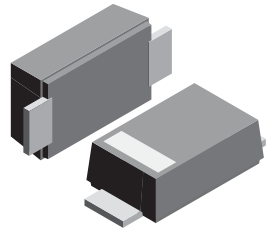
FR3ABF - FR3MBF

SURFACE MOUNT FAST RECOVERY RECTIFIER DIODES

VOLTAGE RANGE: 50-1000V
CURRENT: 3.0 A



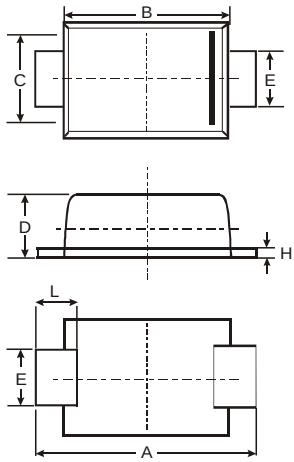
Features

- Glass Passivated Die Construction
- Fast Recovery Time for High Efficiency
  Low Forward Voltage Drop and High Current Capability
- Ideally Suited for Automatic Assembly
- Plastic Material: UL Flammability
- Classification Rating 94V-0

Mechanical Data

- Case:SMBF , Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.0018 ounces,0.05grams

RoHS COMPLIANT



SMBF			
Dim	**Min**	**Max**	**Typ**
A	5.45	5.55	5.50
B	4.27	4.33	4.30
C	3.57	3.63	3.60
D	1.32	1.38	1.35
E	1.96	2.00	1.98
H	0.019	0.021	0.20
L	0.73	0.77	0.75
All Dimensions in mm			

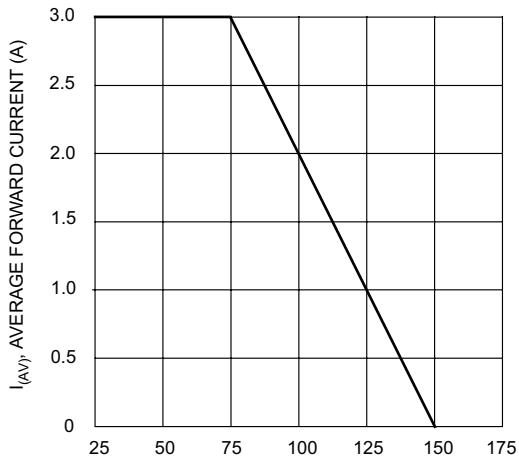
Maximum Ratings and Electrical Characteristics

T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

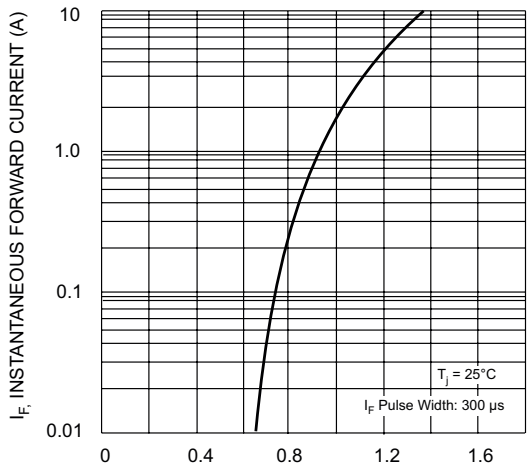
Characteristic	Symbol	FR3ABF	FR3BBF	FR3DBF	FR3GBF	FR3JBF	FR3KBF	FR3MBF	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current @ T_T = 75°C	I_O	3.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	100							A
Forward Voltage @ I_F = 3.0A	V_{FM}	1.3							V
Peak Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage @ TA = 125°C	I_{RM}	5.0 250							μA
Maximum Recovery Time (Note 3)	t_{rr}	150				250	500		ns
Typical Junction Capacitance (Note 2)	C_j	50							pF
Typical Thermal Resistance Junction to Terminal (Note 1)	$R_{\theta JT}$	25							K/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150							°C

Notes:
1. Thermal resistance: junction to terminal, unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pad as heat sink.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. Reverse recovery test conditions: I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See figure 5.



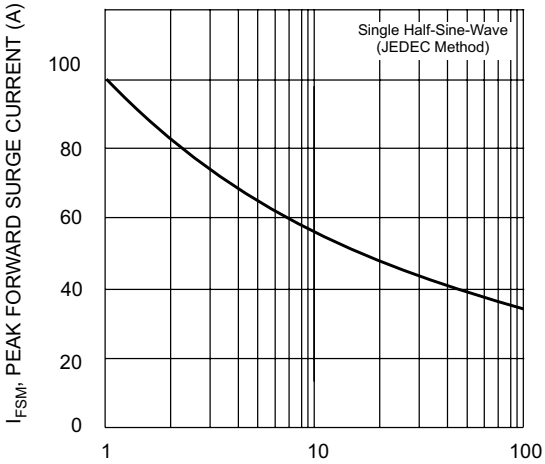
T_T, TERMINAL TEMPERATURE (°C)

Fig. 1 Forward Current Derating Curve



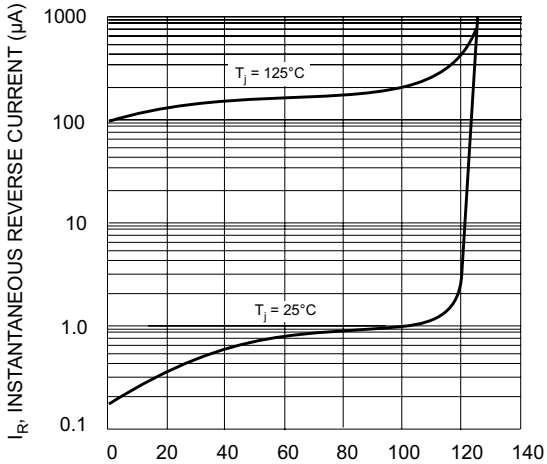
V_F, INSTANTANEOUS FORWARD VOLTAGE (V)

Fig. 2 Typical Forward Characteristics



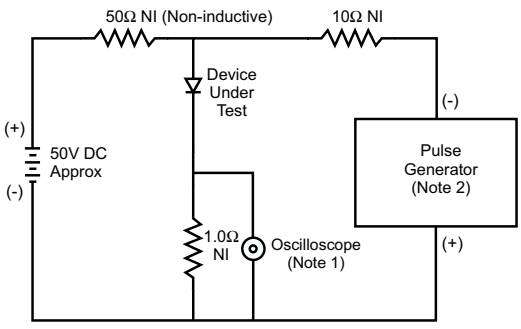
NUMBER OF CYCLES AT 60 Hz

Fig. 3 Forward Surge Current Derating Curve



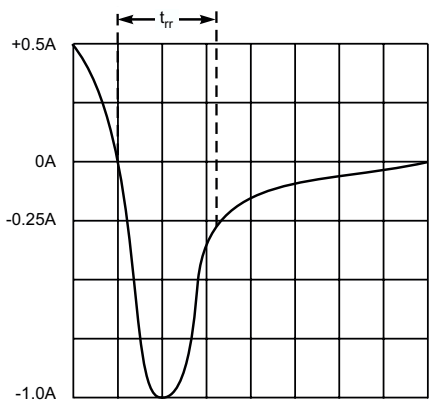
PERCENT OF RATED PEAK REVERSE VOLTAGE (%)

Fig. 4 Typical Reverse Characteristics



Notes:

1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit