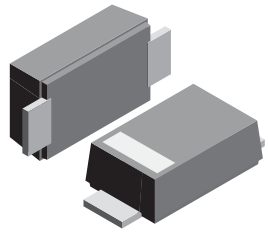
FR1AF - FR1MF

SURFACE MOUNT FAST RECOVERY RECTIFIER DIODES

VOLTAGE RANGE: 50 - 1000V
CURRENT: 1.0 A



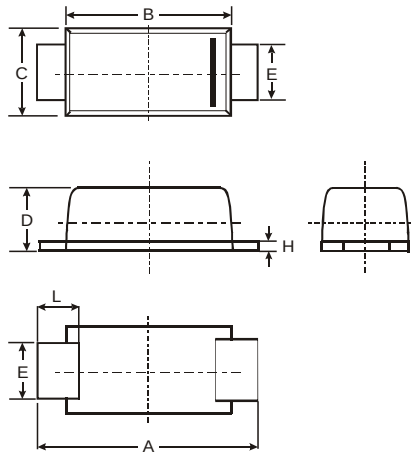
Features

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Voltage Drop, High Efficiency
- Low Power Loss
- Fast Recovery Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O

Mechanical Data

- Case: SMAF,Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity:Color band denotes cathode end
- Mounting Position:Any
- Weight:0.0018 ounce, 0.064 grams

RoHS COMPLIANT



SMAF			
Dim	Min	Max	Typ
A	4.75	4.85	4.80
B	3.68	3.72	3.70
C	2.57	2.63	2.60
D	0.097	1.03	1.00
E	1.38	1.42	1.40
H	0.13	0.17	0.15
L	0.63	0.67	0.65
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	FR1AF	FR1BF	FR1DF	FR1GF	FR1JF	FR1KF	FR1MF	Unit
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current @ T_A = 75°C	$I_{(AV)}$	1.0							A
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30							A
Maximum Instantaneous Forward Voltage at 1.0 A	V_F	1.3							V
Maximum DC Reverse Current at Rated DC Blocking Voltage @ T_A = 25°C	I_R	5.0							μA
@ T_A = 125°C		100							
Maximum Full Load Reverse Current Full Cycle Average @ T_A = 75°C		50							μA
Maximum Reverse Recovery Time (See Note 1)	t_{rr}	150				250	500	500	ns
Maximum Thermal Resistance (See Note 2)	$R_{\Theta JL}$	30							°C/W
Typical Junction Capacitance (See Note 3)	C_J	15							pF
Operating and Storage Temperature Rating	T_J, T_{STG}	-65 to +175							°C

Notes: 1. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A
2. Thermal Resistance from junction to lead with 6.0mm² copper pads
3. Measured at 1.0MHz and applied reverse voltage of 4.0V

RATINGS AND CHARACTERISTIC CURVES FR1AF THRU FR1MF

FIG. 1- FORWARD CURRENT DERATING CURVE

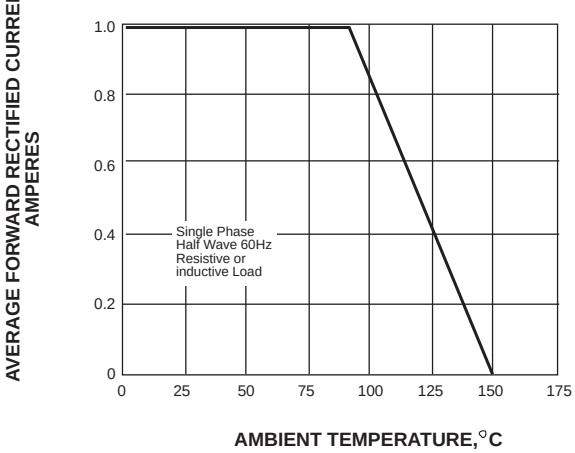


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

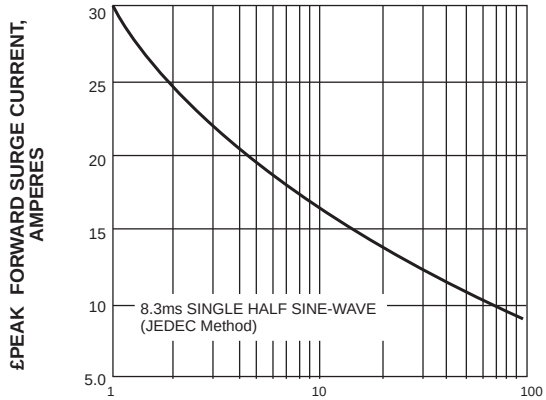


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

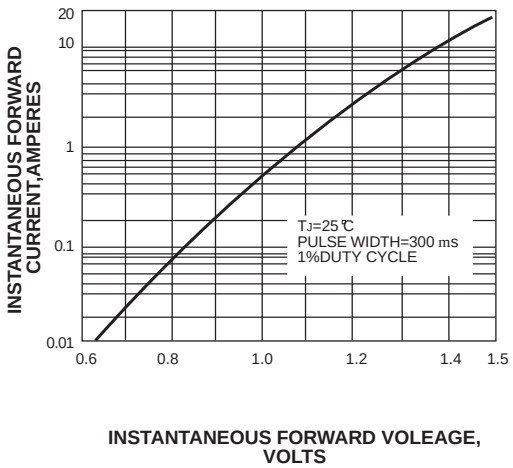


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

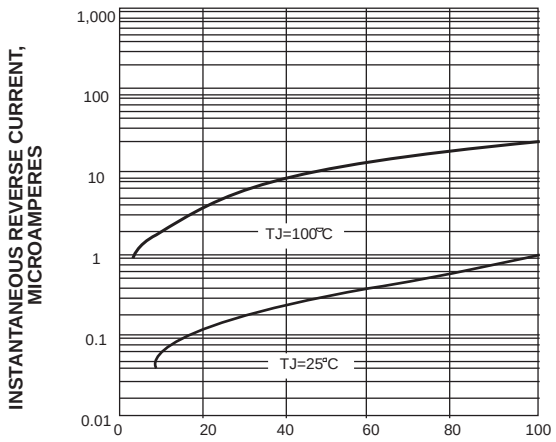


FIG. 5-TYPICAL JUNCTION CAPACITANCE

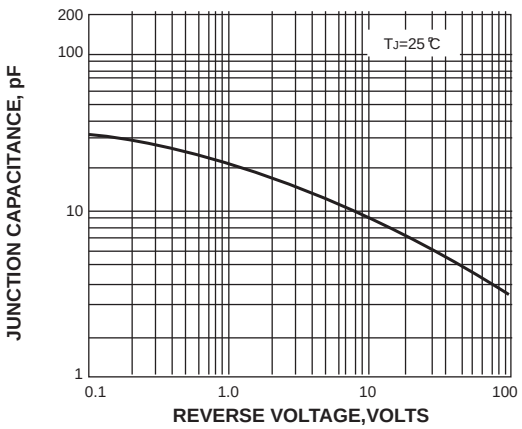


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE