

**FEATURES**

- For surface mounted application
- Low forward voltage drop
- High current capability
- Easy pick and place
- Glass Passivated Chip Junction
- High surge current capability
- Plastic material used carries Underwriters Laboratory Classification 94V-0



SMAF



Cathode

**MECHANICAL DATA**

- Case: SMAF Molded plastic
- Terminals: Pure tin plated, lead free
- Polarity: Indicated by cathode band
- Weight: 27 mg (approx.)

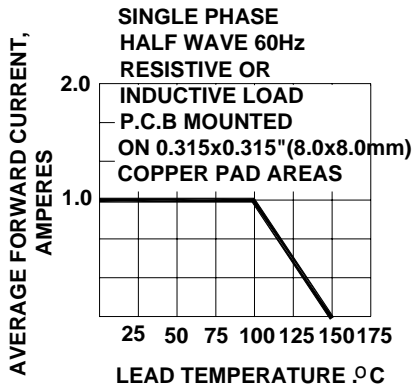
**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

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%.

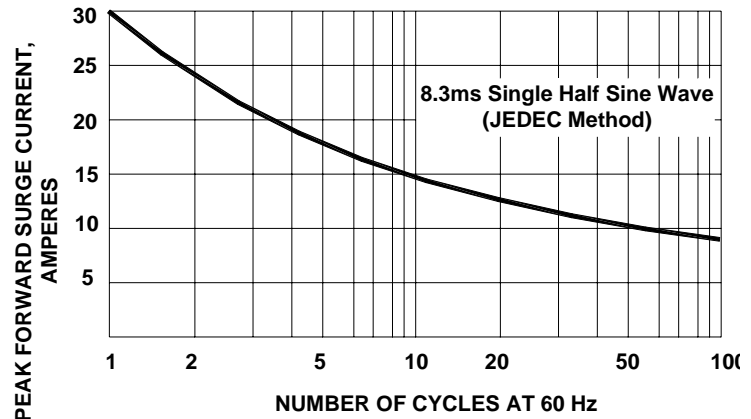
| Parameter   | Symbol          | M1F           | M2F | M3F | M4F | M5F | M6F | M7F  | Unit                  |         |
|---|-----------------|---------------|-----|-----|-----|-----|-----|------|-----------------------|---------|
| Maximum Repetitive Peak Reverse Voltage   | $V_{RRM}$       | 50            | 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 at TL =100 °C                                   | $I_{(A)}$       | 1             |     |     |     |     |     |      | A                     |         |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC) | $I_{FSM}$       | 30            |     |     |     |     |     |      | A                     |         |
| Maximum Instantaneous Forward Voltage at 1 A  | $V_F$           | 1.1           |     |     |     |     |     |      | V                     |         |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                   | $I_R$           |               |     |     |     |     |     |      | $T_A = 25\text{ °C}$  | $\mu A$ |
|   |                 |               |     |     |     |     |     |      | $T_A = 125\text{ °C}$ |         |
| Typical Junction Capacitance 1)   | $C_J$           | 15            |     |     |     |     |     |      | pF                    |         |
| Maximum Thermal Resistance 2)   | $R_{\theta JA}$ | 75            |     |     |     |     |     |      | °C/W                  |         |
| Operating and Storage Temperature Range   | $T_{J, TS}$     | - 50 to + 150 |     |     |     |     |     |      | °C                    |         |

- Note
1. Measured at 1 MHz and Applied Vr=4.0 volts
  2. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

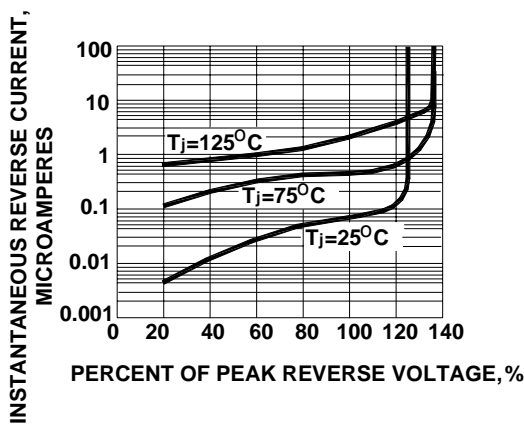
**Typical Characteristics**



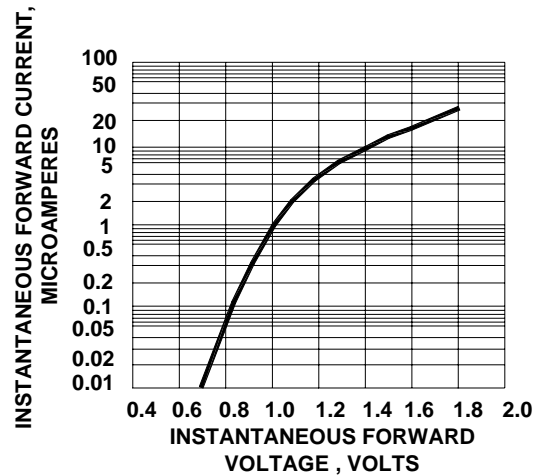
**Fig. 1-FORWARD CURRENT DERATING CURVE**



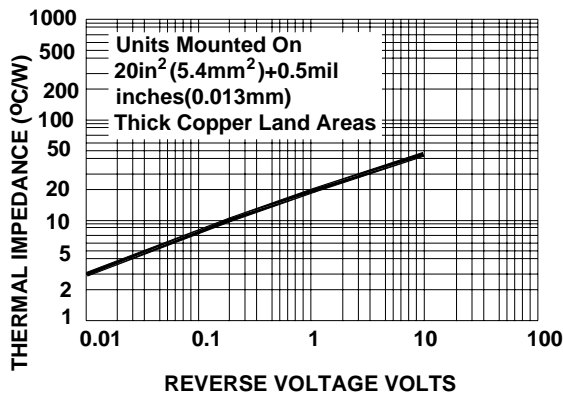
**Fig. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



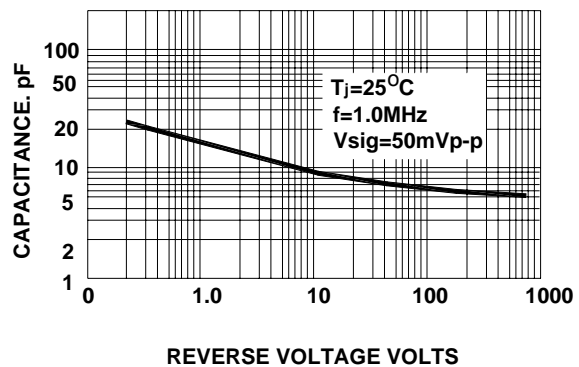
**Fig. 3-TYPICAL REVERSE CHARACTERISTICS**



**Fig. 4-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

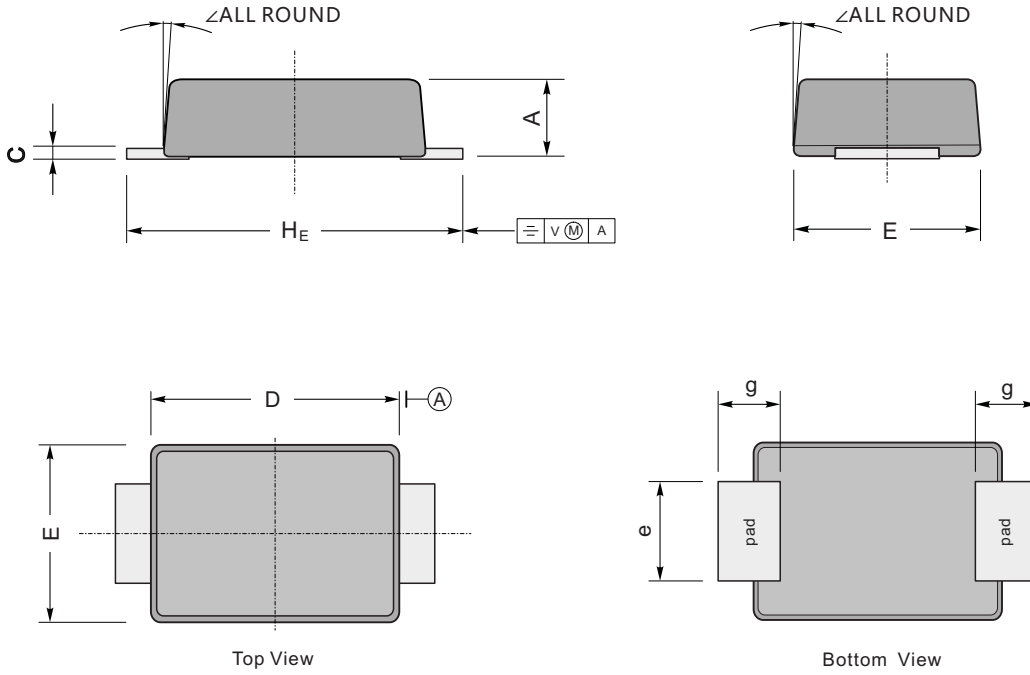


**Fig. 5-TRANSIENT THERMAL IMPEDANCE**



**Fig. 6-TYPICAL JUNCTION CAPACITANCE**

**SMAF Package Outline Dimensions**



| UNIT |     | A   | C    | D   | E   | e   | g   | $H_E$ | $\sphericalangle$ |
|------|-----|-----|------|-----|-----|-----|-----|-------|-------------------|
| mm   | max | 1.1 | 0.20 | 3.7 | 2.7 | 1.6 | 1.2 | 4.9   | 7°                |
|      | min | 0.9 | 0.12 | 3.3 | 2.4 | 1.3 | 0.8 | 4.4   |                   |
| mil  | max | 43  | 7.9  | 146 | 106 | 63  | 47  | 193   |                   |
|      | min | 35  | 4.7  | 130 | 94  | 51  | 31  | 173   |                   |