



# S1AF THRU S1MF

**Surface Mount General Purpose Silicon Rectifiers    Reverse Voltage - 50 to 1000 V    Forward Current - 1 A**

## FEATURES

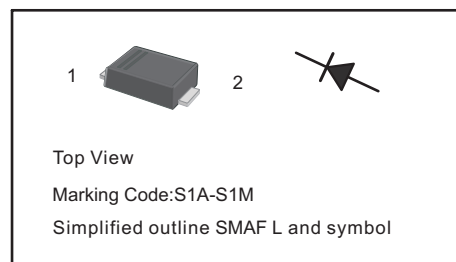
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Easy to pick and place
- Lead free in comply with EU RoHS 2011/65/EU directives

## MECHANICAL DATA

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 27mg 0.00086oz

## PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



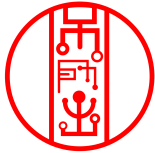
## Maximum Ratings and Electrical characteristics

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

| Parameter                                                                                                     | Symbols         | S1AF       | S1BF | S1DF | S1GF | S1JF | S1KF | S1MF | Units              |
|---------------------------------------------------------------------------------------------------------------|-----------------|------------|------|------|------|------|------|------|--------------------|
| 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 $T_a = 65^\circ\text{C}$                                         | $I_{F(AV)}$     | 1          |      |      |      |      |      |      | A                  |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)             | $I_{FSM}$       | 25         |      |      |      |      |      |      | A                  |
| Maximum Instantaneous Forward Voltage at 1 A                                                                  | $V_F$           | 1.1        |      |      |      |      |      |      | V                  |
| Maximum DC Reverse Current $T_a = 25^\circ\text{C}$<br>at Rated DC Blocking Voltage $T_a = 125^\circ\text{C}$ | $I_R$           | 5<br>50    |      |      |      |      |      |      | $\mu\text{A}$      |
| Typical Junction Capacitance <sup>1)</sup>                                                                    | $C_j$           | 4          |      |      |      |      |      |      | pF                 |
| Typical Thermal Resistance <sup>2)</sup>                                                                      | $R_{\theta JA}$ | 180        |      |      |      |      |      |      | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range                                                                       | $T_j, T_{stg}$  | -55 ~ +150 |      |      |      |      |      |      | $^\circ\text{C}$   |

1 ) Measured at 1 MHz and applied reverse voltage of 4 V D.C

2 ) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted



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Fig.1 Forward Current Derating Curve

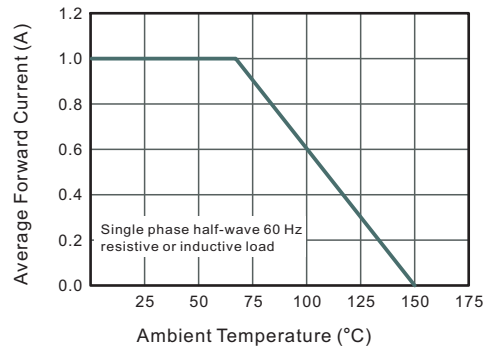


Fig.2 Typical Instantaneous Reverse Characteristics

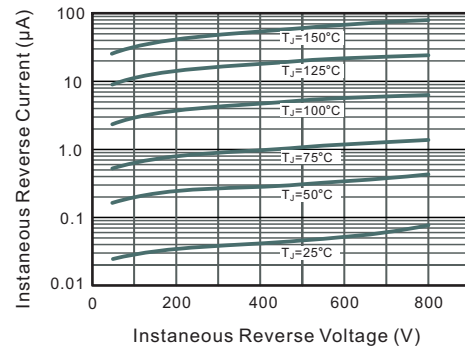


Fig.3 Typical Forward Characteristic

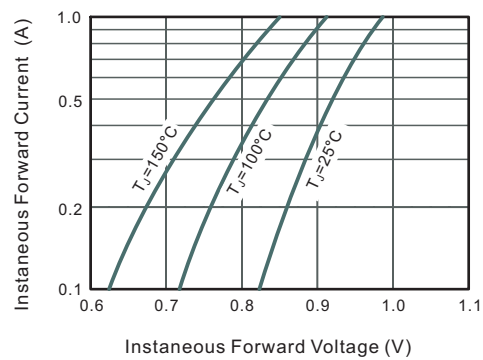
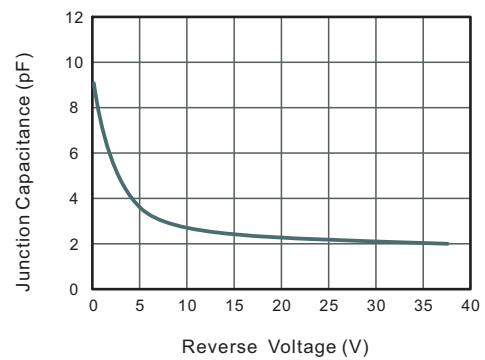
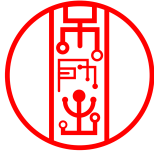


Fig.4 Typical Junction Capacitance



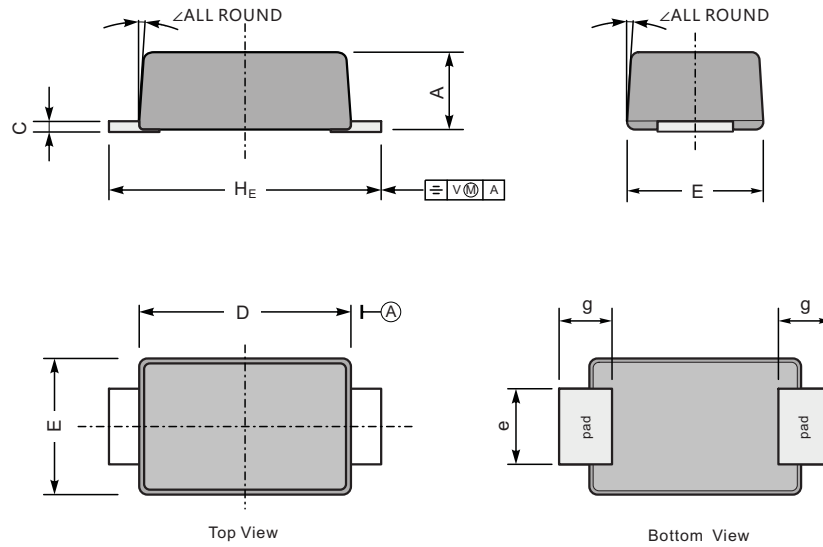


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## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SMAF



| UNIT |     | A   | C    | D   | E   | e   | g   | H <sub>E</sub> | ∠  |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----|
| 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            |    |

The recommended mounting pad size

