

## SURFACE MOUNT FAST RECOVERY RECTIFIER

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Fast switching for high efficiency
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
260°C/10 seconds at terminals  
Glass passivated chip junction

### Mechanical Data

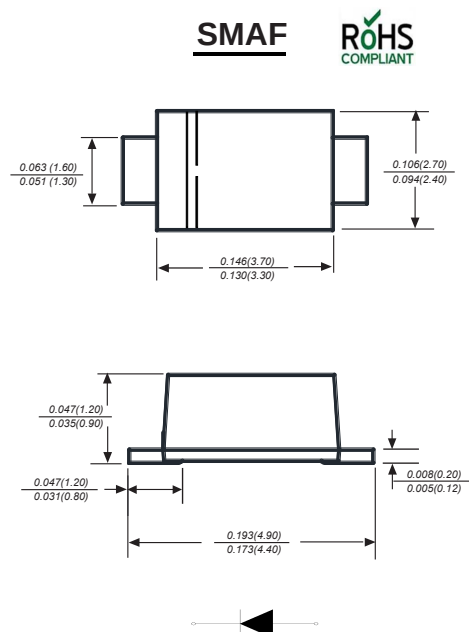
**Case :** JEDEC SMAF Molded plastic body

**Terminals :** Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity :** Polarity symbol marking on body

**Mounting Position :** Any

**Weight :** 0.00095ounce, 0.027grams



Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

| Parameter                                                                                             | SYMBOLS                          | MDD<br>RS2AF | MDD<br>RS2BF | MDD<br>RS2DF | MDD<br>RS2GF | MDD<br>RS2JF | MDD<br>RS2KF | MDD<br>RS2MF | UNITS |
|-------------------------------------------------------------------------------------------------------|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|
| Marking Code                                                                                          |                                  |              |              |              |              |              |              |              |       |
| Maximum repetitive peak reverse voltage                                                               | V <sub>RRM</sub>                 | 50           | 100          | 200          | 400          | 600          | 800          | 1000         | V     |
| Maximum RMS voltage                                                                                   | V <sub>RMS</sub>                 | 35           | 70           | 140          | 280          | 420          | 560          | 700          | V     |
| Maximum DC blocking voltage                                                                           | V <sub>DC</sub>                  | 50           | 100          | 200          | 400          | 600          | 800          | 1000         | V     |
| Maximum average forward rectified current at TL=125℃                                                  | I <sub>(AV)</sub>                | 2.0          |              |              |              |              |              |              | A     |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed onrated load (JEDEC Method) | I <sub>FSM</sub>                 | 50           |              |              |              |              |              |              | A     |
| Maximum instantaneous forward voltage at 2.0A                                                         | V <sub>F</sub>                   | 1.30         |              |              |              |              |              |              | V     |
| Maximum DC reverse current    TA=25℃<br>at rated DCblocking voltage    TA=125℃                        | I <sub>R</sub>                   | 5.0<br>100.0 |              |              |              |              |              |              | uA    |
| Maximum reverse recovery time    (NOTE 1)                                                             | t <sub>rr</sub>                  | 150          |              |              |              | 250          | 500          |              | ns    |
| Typical junction capacitance (NOTE 2)                                                                 | C <sub>J</sub>                   | 22.0         |              |              |              |              |              |              | pF    |
| Typical thermal resistance (NOTE 3)                                                                   | R <sub>θJA</sub>                 | 65.0         |              |              |              |              |              |              | ℃/W   |
|                                                                                                       | R <sub>θJC</sub>                 | 20.0         |              |              |              |              |              |              |       |
| Operating junction and storage temperature range                                                      | T <sub>J</sub> ,T <sub>STG</sub> | -55 to +150  |              |              |              |              |              |              | ℃     |

**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $t_{rr}=0.25\text{A}$   
2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
3. P.C.B. mounted with 2.0"x2.0" (5.0x5.0cm) copper pad areas

## Ratings And Characteristic Curves

Fig.1 Forward Current Derating Curve

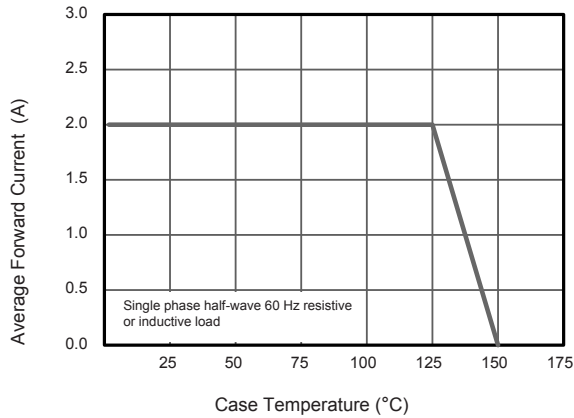


Fig.2 Typical Reverse Characteristics

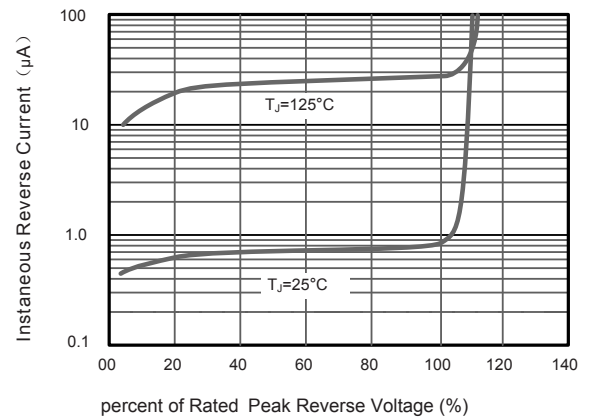


Fig.3 Typical Instantaneous Forward Characteristics  $T_J = 25^\circ C$

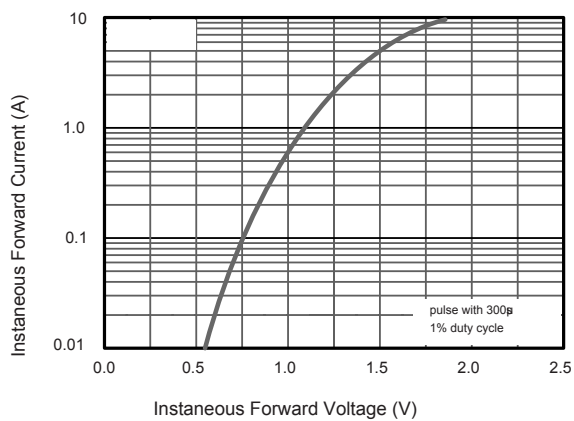


Fig.4 Typical Junction Capacitance

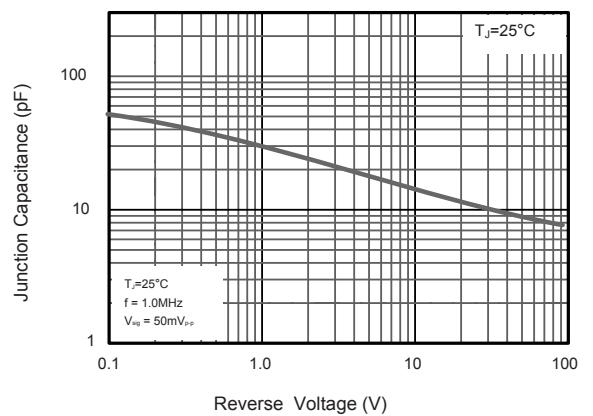
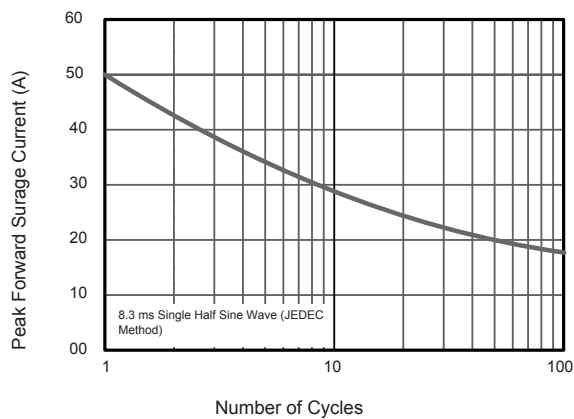
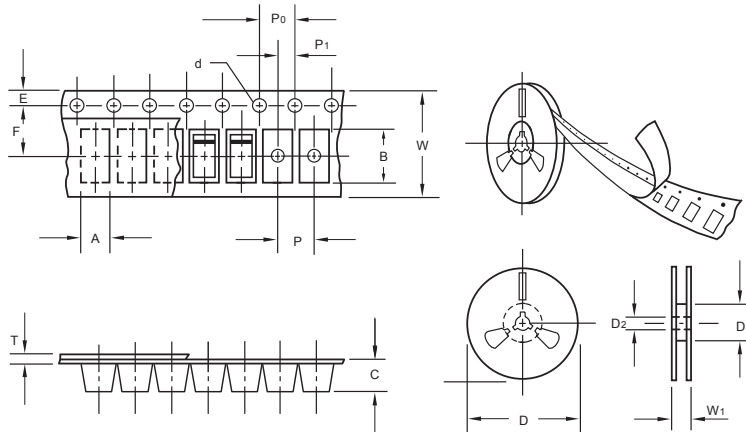


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



The curve above is for reference only.

## Packing information



unit:mm

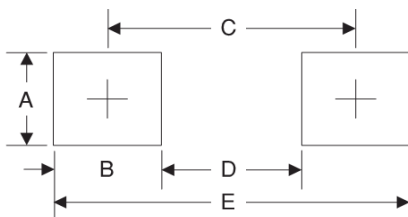
| Item                     | Symbol         | Tolerance | SMAF   |
|--------------------------|----------------|-----------|--------|
| Carrier width            | A              | 0.1       | 2.80   |
| Carrier length           | B              | 0.1       | 4.75   |
| Carrier depth            | C              | 0.1       | 1.42   |
| Sprocket hole            | d              | 0.05      | 1.50   |
| 7" Reel outside diameter | D              | 2.0       | 178.00 |
| 7" Reel inner diameter   | D <sub>1</sub> | min       | 54.40  |
| Feed hole diameter       | D <sub>2</sub> | 0.5       | 13.00  |
| Sprocket hole position   | E              | 0.1       | 1.75   |
| Punch hole position      | F              | 0.1       | 5.05   |
| Punch hole pitch         | P              | 0.1       | 4.00   |
| Sprocket hole pitch      | P <sub>0</sub> | 0.1       | 4.00   |
| Embossment center        | P <sub>1</sub> | 0.1       | 2.00   |
| Overall tape thickness   | T              | 0.1       | 0.30   |
| Tape width               | W              | 0.3       | 8.00   |
| Reel width               | W <sub>1</sub> | 1.0       | 12.30  |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

## Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| SMAF    | 7"        | 3,000      | 4.0                     | 6,000     | 210*208*203     | 178             | 400*265*400       | 120,000      | 10.0                      |

## Suggested Pad Layout



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 1.8       | 0.071       |
| B      | 1.6       | 0.063       |
| C      | 3.8       | 0.150       |
| D      | 2.2       | 0.087       |
| E      | 5.4       | 0.213       |