

1.0A Surface Mount General Purpose Rectifiers - 50V-1000V

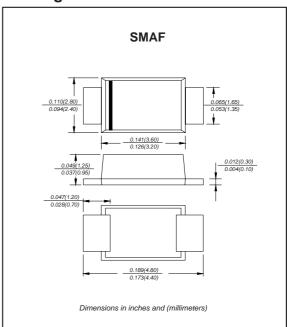
#### **Features**

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Low reverse leakage
- ◆ Built-in strain relief,ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds at terminals
- ◆ Glass passivated chip junction
- ◆ Compliant to RoHS Directive 2011/65/EU
- ◆ Compliant to Halogen-free

#### Mechanical data

- ◆ Case: JEDEC SMAF molded plastic body
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- ◆ Polarity: Color band denotes cathode end
- ◆ Mounting Position: Any

### Package outline



## Maximum ratings and Electrical Characteristics (AT T<sub>A</sub>=25°C unless otherwise noted)

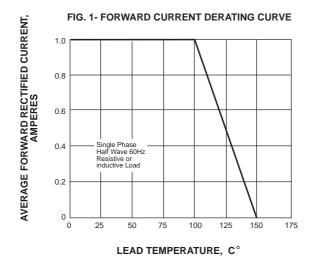
|   | SYMBOLS | M1F         | M2F  | M3F | M4F | M5F  | M6F | M7F  | UNITS |
|---|---------|-------------|------|-----|-----|------|-----|------|-------|
| Maximum repetitive peak reverse voltage   |         | 50          | 100  | 200 | 400 | 600  | 800 | 1000 | V     |
| Maximum RMS voltage   |         | 35          | 70   | 140 | 280 | 420  | 560 | 700  | V     |
| Maximum DC blocking voltage   | VDC     | 50          | 100  | 200 | 400 | 600  | 800 | 1000 | V     |
| Maximum average forward rectified current at TL =110℃                             |         | 1.0         |      |     |     | Α    |     |      |       |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load |         |             | 30.0 |     |     |      | А   |      |       |
| Maximum instantaneous forward voltage at 1.0A                                     |         | 1.1         |      |     |     |      | V   |      |       |
| Maximum DC reverse current Ta=25℃ at rated DC blocking voltage Ta=100℃            | lR      | 5.0<br>50.0 |      | μΑ  |     |      |     |      |       |
| Typical junction capacitance (NOTE 1)   |         | 15.0        |      |     |     | pF   |     |      |       |
| Typical thermal resistance (NOTE 2)   |         | 55.0        |      |     |     | °C/W |     |      |       |
| Operating junction and storage temperature range                                  |         | -55 to +150 |      |     |     | °C   |     |      |       |

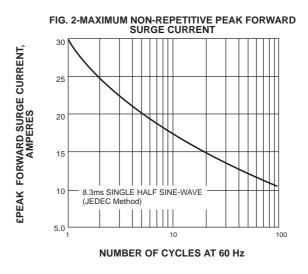
Note:1.Measured at 1MHz and applied reverse voltage of 4.0V D.C. 2.P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas

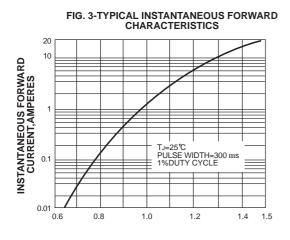


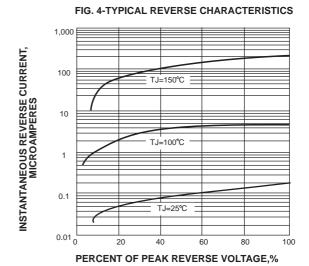
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### Rating and characteristic curves

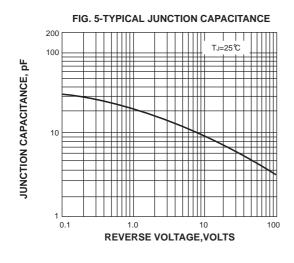


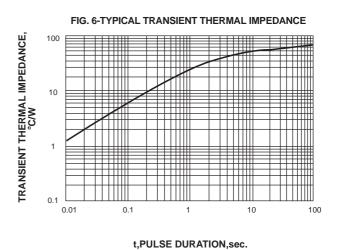






INSTANTANEOUS FORWARD VOLEAGE, VOLTS







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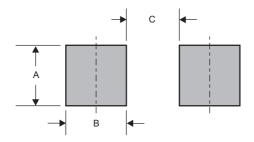
## **Pinning information**

| Pin                        | Simplified outline | Symbol |  |  |
|----------------------------|--------------------|--------|--|--|
| Pin1 cathode<br>Pin2 anode | 1 2                | 1 2    |  |  |

## Marking

| Type number                                   | Marking code                                  | Example |
|---|---|---------|
| M1F<br>M2F<br>M3F<br>M4F<br>M5F<br>M6F<br>M7F | M1F<br>M2F<br>M3F<br>M4F<br>M5F<br>M6F<br>M7F | M7F     |

## Suggested solder pad layout



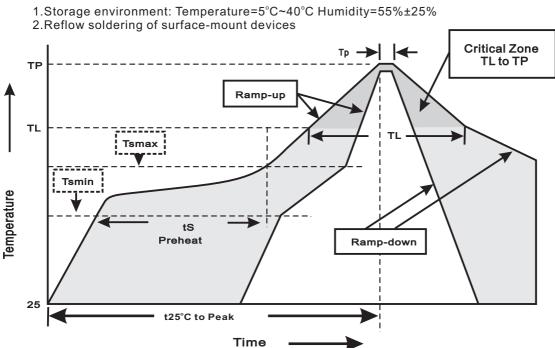
Dimensions in inches and (millimeters)

| PACKAGE | А            | В            | С            |  |  |
|---------|--------------|--------------|--------------|--|--|
| SMAF    | 0.110 (2.80) | 0.063 (1.60) | 0.087 (2.20) |  |  |



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## Suggested thermal profiles for soldering processes



#### 3.Reflow soldering

| Profile Feature  | Soldering Condition         |  |  |
|--|-----------------------------|--|--|
| Average ramp-up rate(T∟ to T <sub>P</sub> )  | <3°C/sec                    |  |  |
| Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t <sub>s</sub> ) | 150°C<br>200°C<br>60~120sec |  |  |
| Tsmax to T∟<br>-Ramp-upRate  | <3°C/sec                    |  |  |
| Time maintained above: -Temperature(TL) -Time(tL)  | 217°C<br>60~260sec          |  |  |
| Peak Temperature(T <sub>P</sub> )  | 255°C-0/+5°C                |  |  |
| Time within 5°C of actual Peak<br>Temperature(t <sub>P</sub> )                             | 10~30sec                    |  |  |
| Ramp-down Rate   | <6°C/sec                    |  |  |
| Time 25°C to Peak Temperature  | <6minutes                   |  |  |

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