

**General Purpose Surface Mount Rectifiers**

**Reverse Voltage: 50 to 1000V**  
**Forward Current: 1.0 Amp**

**Features**

- Low profile package
- For surface mounted applications
- Glass passivated chip junction
- High forward surge capability
- High temperature soldering guaranteed  
260°C/10 seconds at terminals

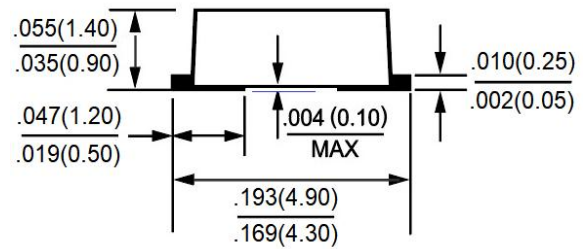
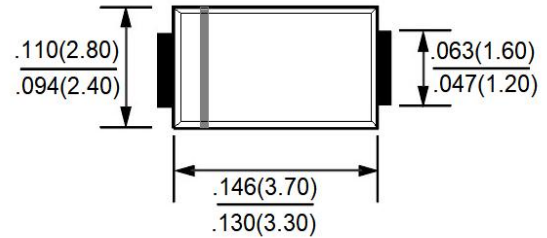
**Mechanical Data**

- **Package:** SMAF  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per MIL-STD-750, Method 2026
- **Polarity:** Cathode line denotes the cathode end

**Typical Applications**

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes for consumer and telecommunication.

**SMAF**



Package Outline Dimensions in Inches (Millimeters)

**Maximum Ratings and Electrical Characteristics**

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

| Parameter&Test Conditions                                                         | SYM.                              | M1F         | M2F | M3F | M4F | M5F | M6F | M7F  | Unit |
|-----------------------------------------------------------------------------------|-----------------------------------|-------------|-----|-----|-----|-----|-----|------|------|
| Device marking code                                                               |                                   | M1F         | M2F | M3F | M4F | M5F | M6F | M7F  |      |
| Maximum Recurrent 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    |
| Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)     | I <sub>O(AV)</sub>                | 1.0         |     |     |     |     |     |      | A    |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rated Load | I <sub>FSM</sub>                  | 30          |     |     |     |     |     |      | A    |
| Maximum Thermal Resistance, Junction To Ambient (Note1)                           | R <sub>θJA</sub>                  | 125         |     |     |     |     |     |      | °C/W |
| Operating junction and storage temperature range                                  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |     |     |     |     |     |      | °C   |

**Electrical Characteristics** (Ta=25°C Unless otherwise specified)

| Parameter&Test Conditions                               |           | SYM.            | M1F | M2F | M3F | M4F | M5F | M6F | M7F | Unit |
|---------------------------------------------------------|-----------|-----------------|-----|-----|-----|-----|-----|-----|-----|------|
| Maximum Instantaneous Forward Voltage    IFM =1A        |           | V <sub>FM</sub> | 1.1 |     |     |     |     |     |     | V    |
| Maximum DC reverse current at rated DC blocking voltage | TA = 25℃  | I <sub>R</sub>  | 5   |     |     |     |     |     |     | μA   |
|                                                         | TA = 125℃ |                 | 100 |     |     |     |     |     |     |      |
| Typical junction capacitance(Note2)                     |           | C <sub>J</sub>  | 8   |     |     |     |     |     |     | pF   |

**Notes:**

1. Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. The typical data above is for reference only.

## Rating and Characteristic Curves

FIG. 1- DERATING CURVE OUTPUT RECTIFIED

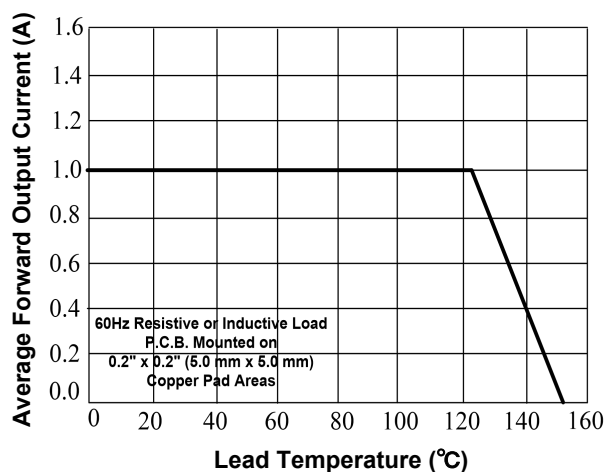


FIG. 2- -MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

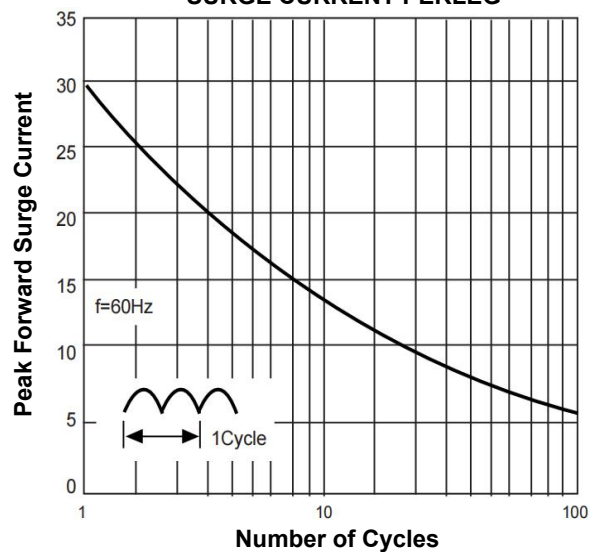


FIG. 3- TYPICAL FORWARD VOLTAGE

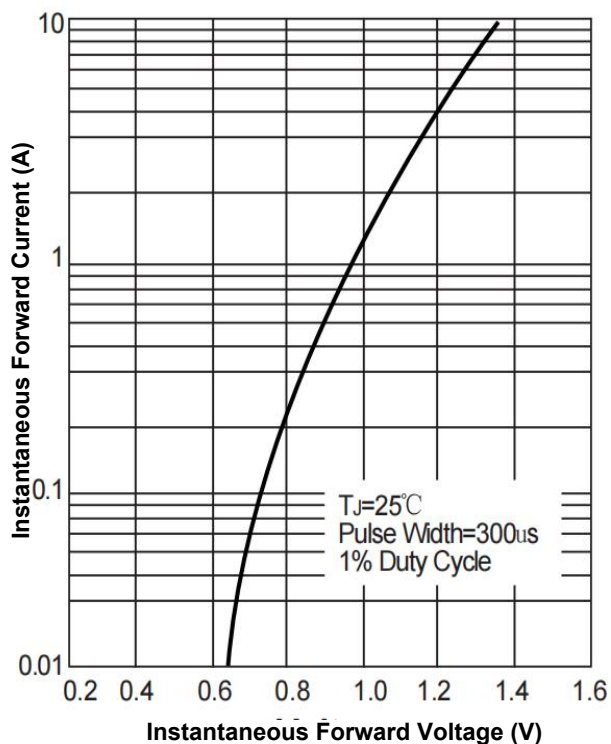
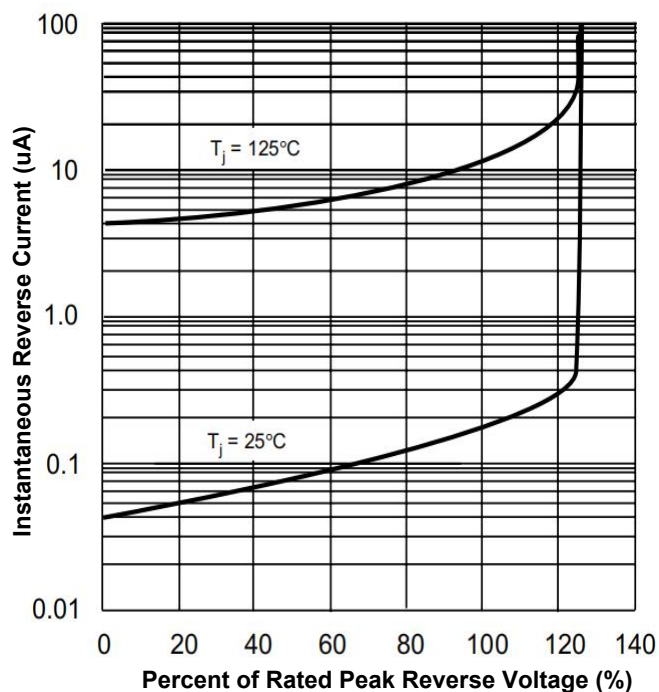
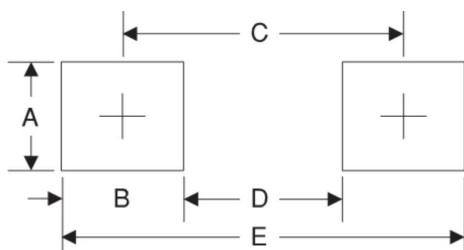


FIG. 4- TYPICAL REVERSE LEAKAGE



The curve above is for reference only.

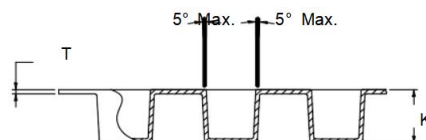
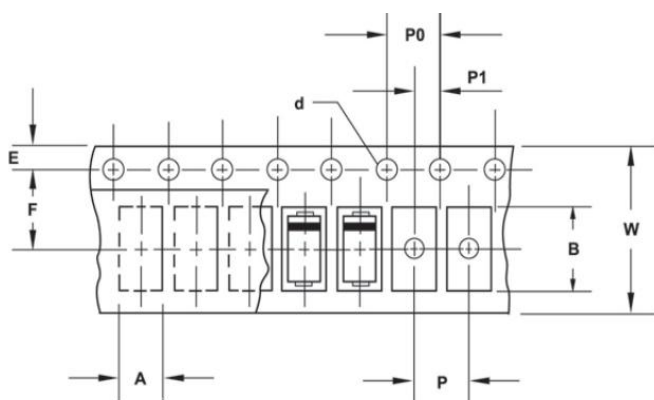
### Recommended Pad Layout



| SYMBOL | Millimeters |
|--------|-------------|
| A      | 1.70        |
| B      | 2.50        |
| C      | 3.90        |
| D      | 1.50        |
| E      | 6.50        |

### Package Information

#### Carrier Dimension(mm)



| W    | F    | d      | E         |
|------|------|--------|-----------|
| 12.0 | 5.5  | ∅ 1.55 | 1.75      |
| A    | B    | K      | T         |
| 2.9  | 4.95 | 1.35   | 0.25      |
| P0   | P1   | P      | Tolerance |
| 4.0  | 2.0  | 4.0    | 0.10      |

#### Package Specifications

| Package | Reel Size | Reel DIA.<br>(mm) | Q'TY/Reel<br>(Kpcs) | Box Size<br>(mm) | QTY/Box<br>(Kpcs) | Carton Size<br>(mm) | Q'TY/Carton<br>(Kpcs) |
|---------|-----------|-------------------|---------------------|------------------|-------------------|---------------------|-----------------------|
| SMAF    | 11'       | 278               | 5                   | 290              | 10                | 310*310*400         | 100                   |
|         | 13'       | 330               | 10                  | 340              | 20                | 370*360*360         | 200                   |

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