



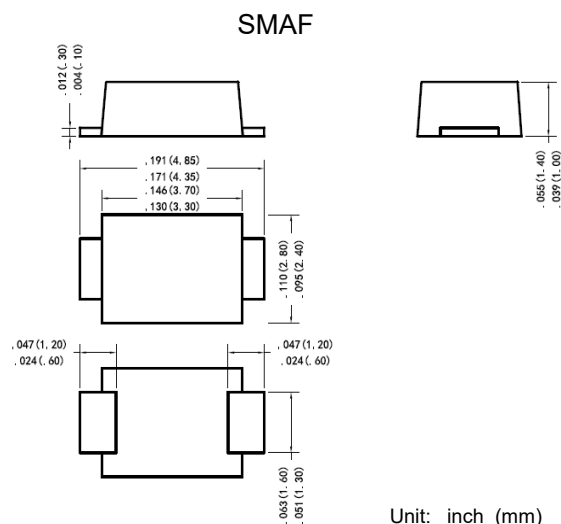
## Surface Mount Fast Recovery Rectifier Diode

### Feature

- Glass passivated junction chip
- Ideal for automated placement
- Built-in strain relief
- Fast switching for fast recovery
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

### Mechanical Data

- **Package:** SMAF  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end



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

| Parameter                                                                                              | Symbol                            | RS3A<br>AF  | RS3B<br>AF | RS3D<br>AF | RS3G<br>AF | RS3J<br>AF | RS3K<br>AF | RS3M<br>AF | Unit |
|--------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|------------|------------|------------|------------|------------|------------|------|
| 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                                                              | I <sub>F(AV)</sub>                | 3.0         |            |            |            |            |            |            | A    |
| Non-repetitive peak forward surge<br>current 8.3 ms singlehalf sine-wave                               | I <sub>FSM</sub>                  | 80          |            |            |            |            |            |            | A    |
| Maximum forward voltage@I <sub>F</sub> =3.0A                                                           | V <sub>F</sub>                    | 1.3         |            |            |            |            |            |            | V    |
| Maximum reverse current@V <sub>DC</sub> <div>T<sub>A</sub>= 25°C</div> <div>T<sub>A</sub>= 125°C</div> | I <sub>R</sub>                    | 5           |            |            |            |            |            |            | μA   |
|                                                                                                        |                                   | 100         |            |            |            |            |            |            |      |
| MAX. reverse recovery time<br>I <sub>F</sub> =0.5A , I <sub>R</sub> =1.0A ,I <sub>RR</sub> =0.25A      | T <sub>RR</sub>                   | 150         |            |            |            | 250        | 500        |            | nS   |
| Typical thermal resistance (Note 1)                                                                    | R <sub>θJA</sub>                  | 85          |            |            |            |            |            |            | °C/W |
| Type junction capacitance V <sub>R</sub> =4.0V,f=1MHz                                                  | C <sub>J</sub>                    | 45          |            |            |            |            |            |            | pF   |
| Operating junction and storage temperature rang                                                        | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |            |            |            |            |            |            | °C   |

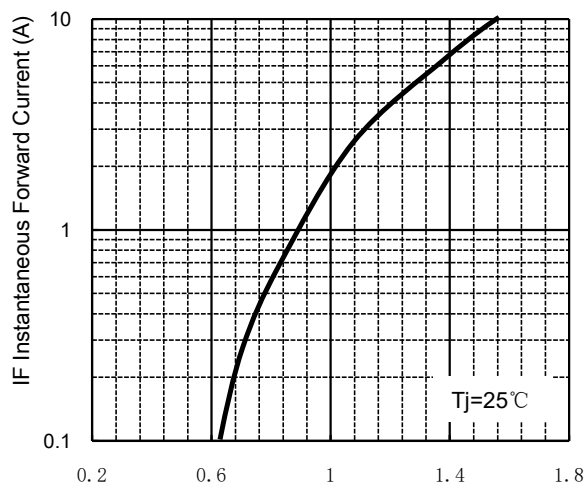
#### Note:

1) Thermal resistance from junction to ambient, PCB mounted.



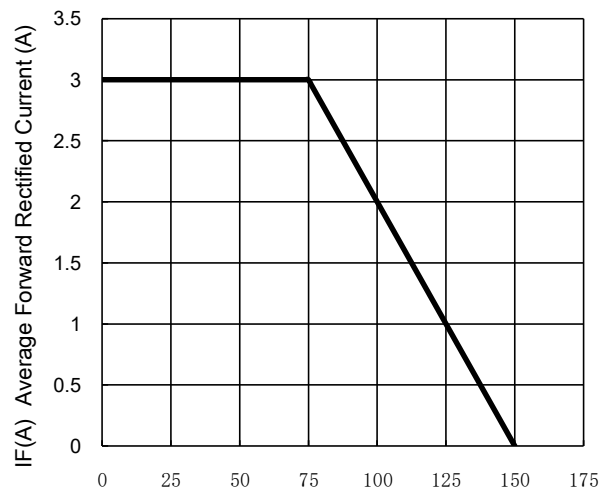
## Characteristic Curves

TYPICAL FORWARD CHARACTERISTIC



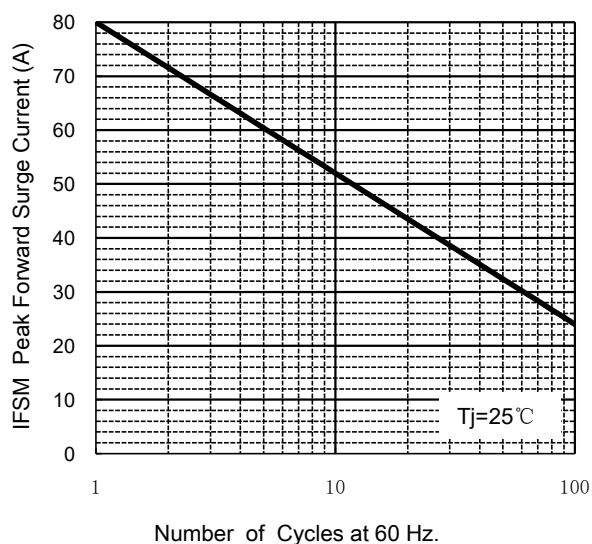
VF Instantaneous Forward Voltage (V)

FORWARD CURRENT DERATING CURVE



TL, Lead temperature ( $^\circ\text{C}$ )

MAXIMUM NON REPETITIVE PEAK  
FORWARD SURGE CURRENT



Number of Cycles at 60 Hz.

TYPICAL REVERSE CHARACTERISTICS

