

## SMAF Plastic-Encapsulate Diodes

### Schottky Rectifier

#### Features

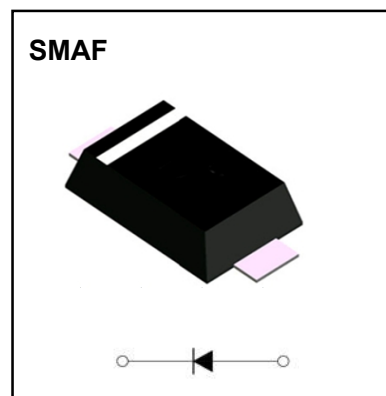
- $I_O$  1A
- $V_{RRM}$  20V-200V
- High surge current capability
- Polarity: Color band denotes cathode

#### Applications

- Rectifier

#### Marking

- SS12F-SS120F : SS12-SS120



#### Limiting Values (Absolute Maximum Rating)

| Item                                 | Symbol             | Unit | Test Conditions                                 | SS<br>12F  | SS<br>13F | SS<br>14F | SS<br>15F | SS<br>16F | SS<br>18F | SS<br>110F | SS<br>115F | SS<br>120F |
|--------------------------------------|--------------------|------|-------------------------------------------------|------------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| Repetitive Peak Reverse Voltage      | V <sub>RRM</sub>   | V    |                                                 | 20         | 30        | 40        | 50        | 60        | 80        | 100        | 150        | 200        |
| Maximum RMS Voltage                  | V <sub>RMS</sub>   | V    |                                                 | 14         | 21        | 28        | 35        | 42        | 56        | 70         | 105        | 140        |
| Average Forward Current              | I <sub>F(AV)</sub> | A    | 60HZ Half-sine wave, Resistance load, TL(Fig.1) | 1.0        |           |           |           |           |           |            |            |            |
| Surge(Non repetitive)Forward Current | I <sub>FSM</sub>   | A    | 60Hz Half-sine wave ,1 cycle , Ta =25℃          | 30         |           |           |           |           |           |            |            |            |
| Junction Temperature                 | T <sub>J</sub>     | ℃    |                                                 | -55~+125   |           |           | -55~+150  |           |           |            |            |            |
| Storage Temperature                  | T <sub>STG</sub>   | ℃    |                                                 | -55 ~ +150 |           |           |           |           |           |            |            |            |

#### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ Unless otherwise specified)

| Item                        | Symbol               | Unit | Test Condition                    |                     | SS<br>12F        | SS<br>13F | SS<br>14F | SS<br>15F | SS<br>16F | SS<br>18F | SS<br>110F | SS<br>115F | SS<br>120F |
|-----------------------------|----------------------|------|-----------------------------------|---------------------|------------------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| Peak Forward Voltage        | V <sub>F</sub>       | V    | I <sub>F</sub> =1.0A              |                     | 0.55             |           |           | 0.70      |           | 0.85      |            | 0.95       |            |
| Peak Reverse Current        | I <sub>RRM1</sub>    | mA   | V <sub>RM</sub> =V <sub>RRM</sub> | T <sub>a</sub> =25℃ | 0.5              |           |           |           |           | 0.1       |            |            |            |
|                             | T <sub>a</sub> =100℃ |      |                                   | 10                  |                  |           |           |           | 5.0       |           |            |            |            |
| Thermal Resistance(Typical) | R <sub>θJ-A</sub>    | ℃/W  | Between junction and ambient      |                     | 88 <sup>1)</sup> |           |           |           |           |           |            |            |            |
|                             | R <sub>θJ-L</sub>    |      | Between junction and terminal     |                     | 28 <sup>1)</sup> |           |           |           |           |           |            |            |            |

#### Notes:

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

## Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

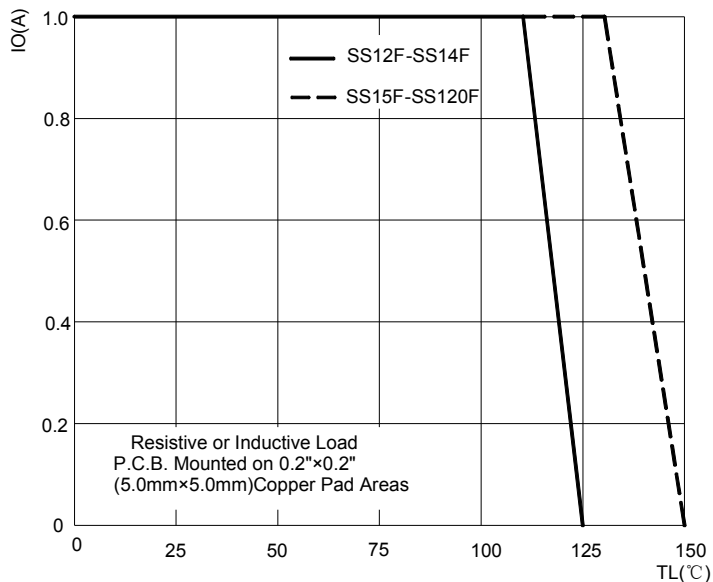


FIG2: Surge Forward Current Capability

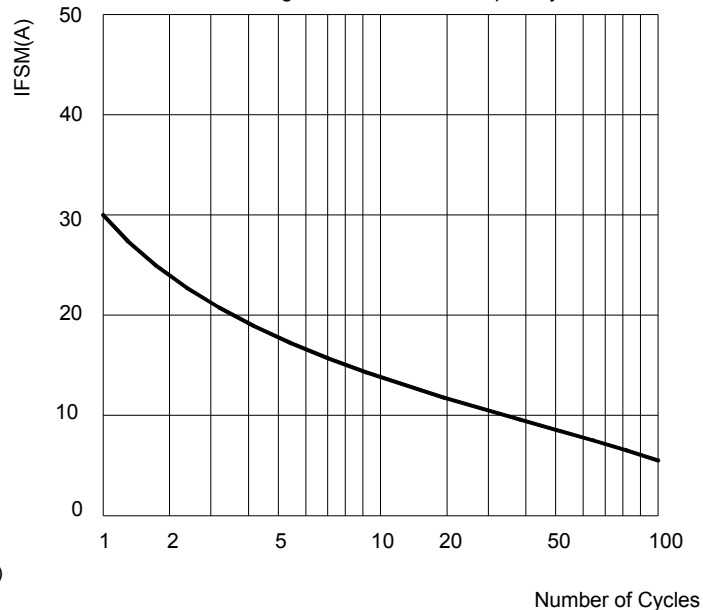


FIG.3: TYPICAL FORWARD CHARACTERISTICS

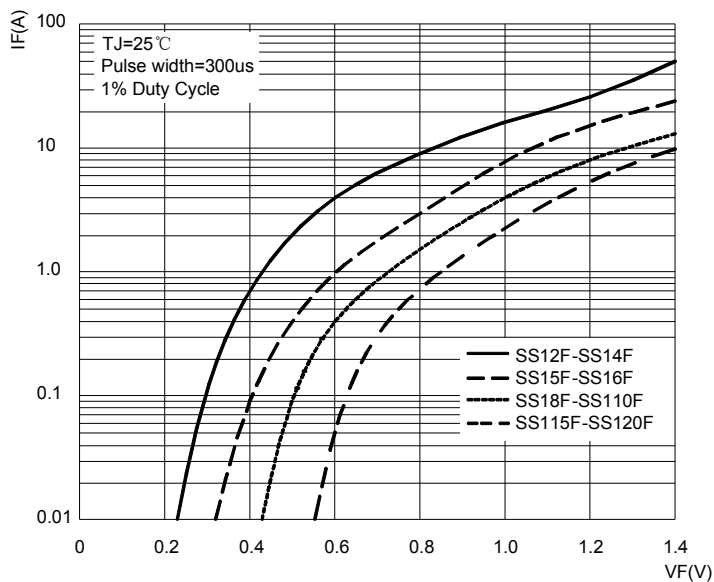
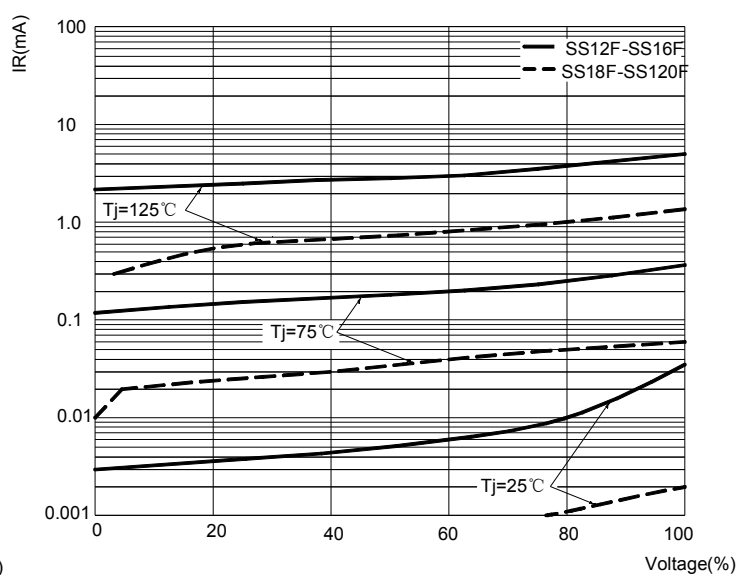
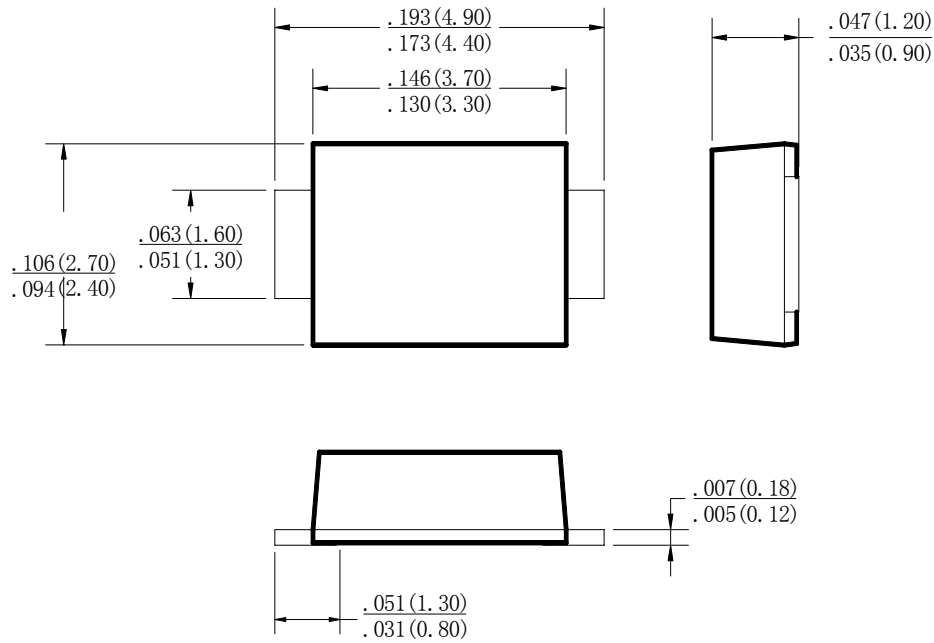


FIG.4: TYPICAL REVERSE CHARACTERISTICS

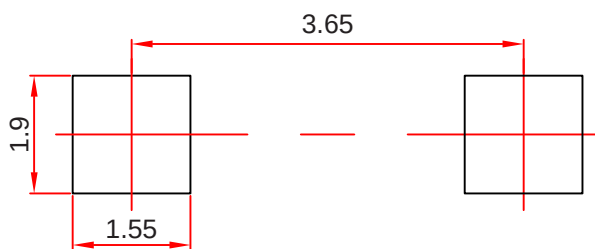


## SMAF Package Outline Dimensions



Dimensions in inches and (millimeters)

## SMAF Suggested Pad Layout

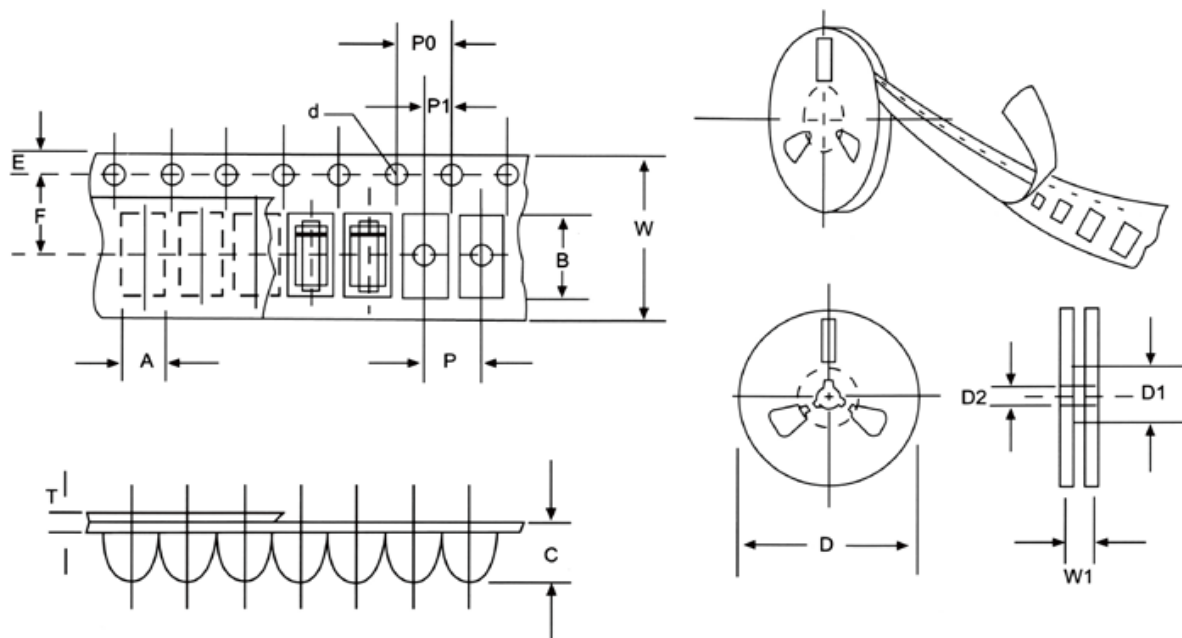


### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

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**FIG:CONFIGURATION OF AXIAL TAPING**

| ITEM                   | SYMBOL | SMAF mm(inch)          |
|------------------------|--------|------------------------|
| Carrier width          | A      | 2.83+0.1(0.112+0.004)  |
| Carrier length         | B      | 4.90+0.1(0.193+0.004)  |
| Carrier depth          | C      | 1.45+0.1(0.057+0.004)  |
| Sprocket hole          | d      | 1.55+0.05(0.061+0.002) |
| Reel outside diameter  | D      | 178+2.0( 7.0+0.079)    |
| Reel inner diameter    | D1     | 54±1.0( 2.13±0.039)    |
| Feed hole diameter     | D2     | 13+0.5(0.512+0.020)    |
| Strocket hole position | E      | 1.75+0.1(0.069+0.004)  |
| Punch hole position    | F      | 5.5+0.05(0.217+0.002)  |
| Punch hole pitch       | P      | 4.0+0.1(0.157+0.004)   |
| Sprocket hole pitch    | P0     | 4.0+0.1(0.157+0.004)   |
| Embossment center      | P1     | 2.0+0.1(0.079+0.004)   |
| Totall tape thickness  | T      | 0.23-0.29(0.009-0.011) |
| Tape width             | W      | 12.0+0.1(0.472+0.004)  |
| Reel width             | W1     | 16.8+2.0(0.661+0.079)  |

NOTE:Devices are packde in accordance with EIA standard RS-481-A and specification given above.