

## SMAF Plastic-Encapsulate Diodes

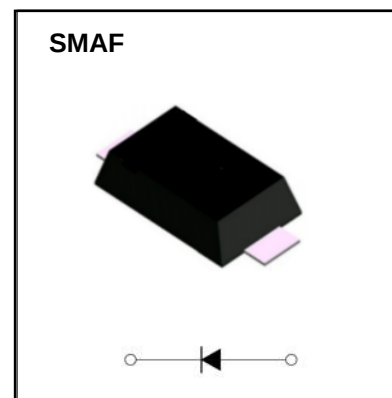
### General Purpose Rectifier

#### Features

- $I_o$  2A
- VRRM 50V-1000V
- Low forward voltage drop
- High surge current capability
- Glass passivated chip junction

#### Mechical Data

- Case: SMAF molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end



#### Limiting Values (Absolute Maximum Rating)

| Item                                 | Symbol             | Unit | Conditions                                    | S2- F      |     |     |     |     |     |      |
|--------------------------------------|--------------------|------|-----------------------------------------------|------------|-----|-----|-----|-----|-----|------|
|                                      |                    |      |                                               | A          | B   | D   | G   | J   | K   | M    |
| Repetitive Peak Reverse Voltage      | V <sub>RRM</sub>   | V    |                                               | 50         | 100 | 200 | 400 | 600 | 800 | 1000 |
| Maximum RMS Voltage                  | V <sub>RMS</sub>   | V    |                                               | 35         | 70  | 140 | 280 | 420 | 560 | 700  |
| Maximum DC Blocking Voltage          | V <sub>DC</sub>    | V    |                                               | 50         | 100 | 200 | 400 | 600 | 800 | 1000 |
| Average Forward Current              | I <sub>F(AV)</sub> | A    | 60Hz Half-sine wave, Resistance load, TL=105℃ | 2          |     |     |     |     |     |      |
| Surge(Non-repetitive)Forward Current | I <sub>FSM</sub>   | A    | 60Hz Half-sine wave,1 cycle, Ta=25℃           | 50         |     |     |     |     |     |      |
| Junction Temperature                 | T <sub>J</sub>     | ℃    |                                               | -55~+150   |     |     |     |     |     |      |
| Storage Temperature                  | T <sub>STG</sub>   | ℃    |                                               | -55 ~ +150 |     |     |     |     |     |      |

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

| Item                            | Symbol            | Unit | Test Condition                                                      |                       | Max |
|---------------------------------|-------------------|------|---------------------------------------------------------------------|-----------------------|-----|
| Peak Forward Voltage            | V <sub>FM</sub>   | V    | I <sub>FM</sub> =2.0A                                               |                       | 1.1 |
| Peak Reverse Current            | I <sub>RRM1</sub> | μA   | V <sub>RM</sub> =V <sub>RRM</sub>                                   | T <sub>a</sub> =25°C  | 5   |
|                                 | I <sub>RRM2</sub> |      |                                                                     | T <sub>a</sub> =125°C | 50  |
| Reverse Recovery Time (Typical) | T <sub>rr</sub>   | us   | I <sub>F</sub> =0.5A   I <sub>R</sub> =1A<br>I <sub>RR</sub> =0.25A |                       | 2.0 |
| Juction Capacitance (Typical)   | C <sub>j</sub>    | pF   | Measured at 1MHZ and Applied Reverse Voltage of 4.0 V.D.C.          |                       | 12  |
| Thermal Resistance (Typical)    | R <sub>θJA</sub>  | °C/W | Between junction and ambient                                        |                       | 78  |
|                                 | R <sub>θJL</sub>  |      | Between junction and lead                                           |                       | 20  |
|                                 | R <sub>θJC</sub>  |      | Between junction and case                                           |                       | 18  |

## Typical Characteristics

FIG.1: FORWARD CURRENT DERATING CURVE

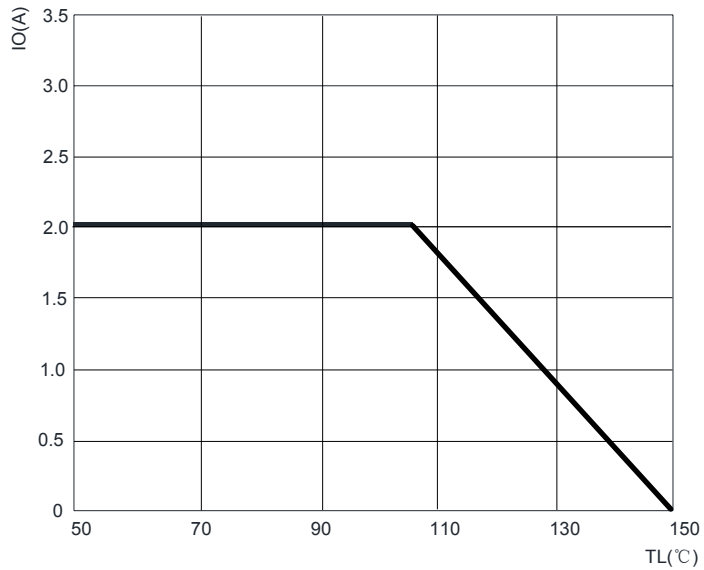


FIG.2: MAXIMUM NON-REPETITIVE FORWARD URGE CURRENT

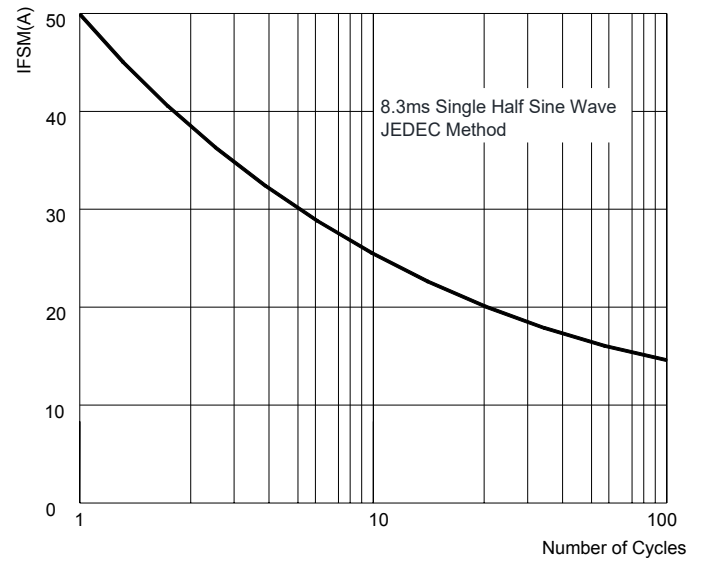


FIG.3: TYPICAL FORWARD CHARACTERISTICS

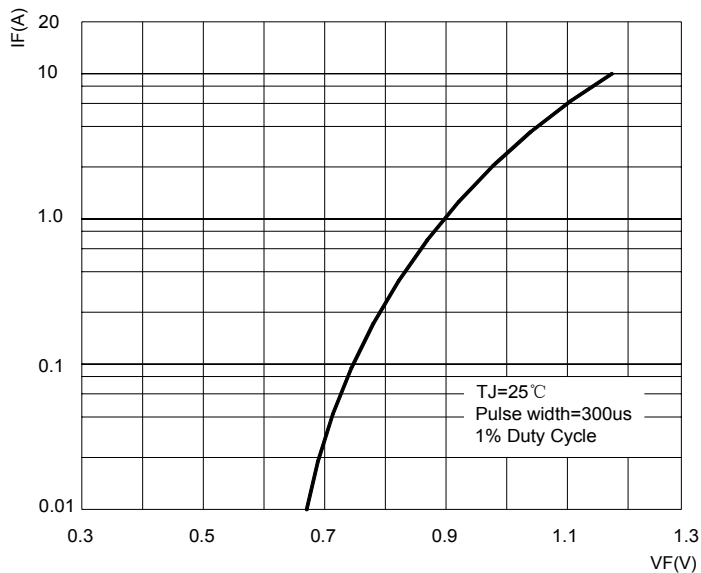
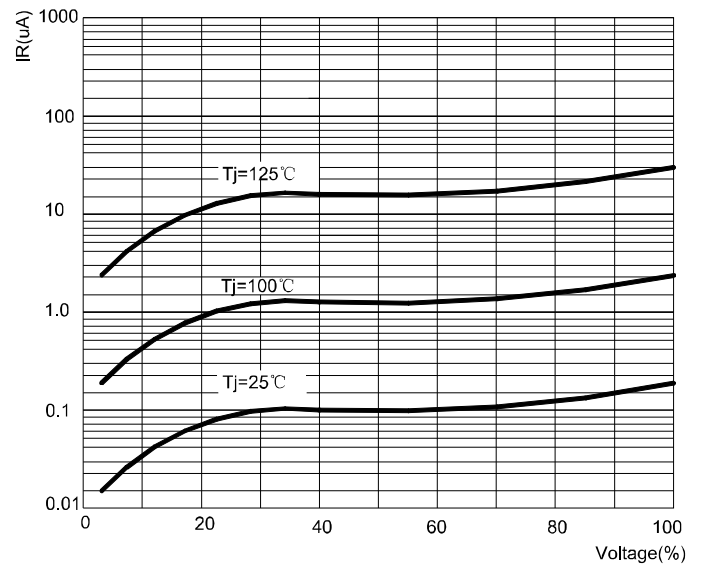
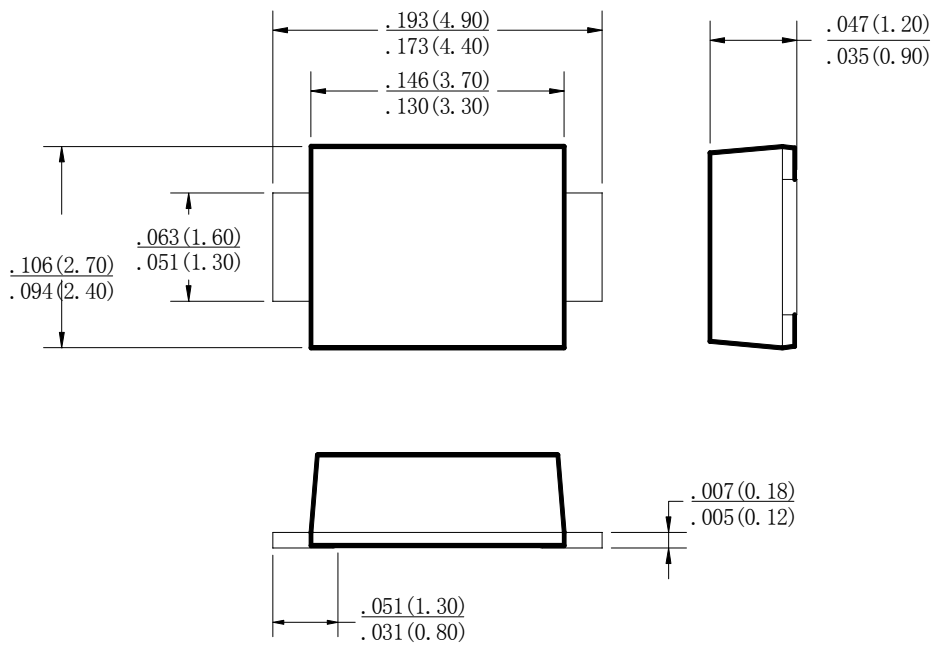


FIG.4: TYPICAL REVERSE CHARACTERISTICS

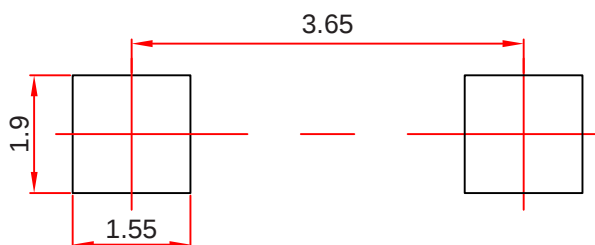


## SMAF Package Outline Dimensions



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.

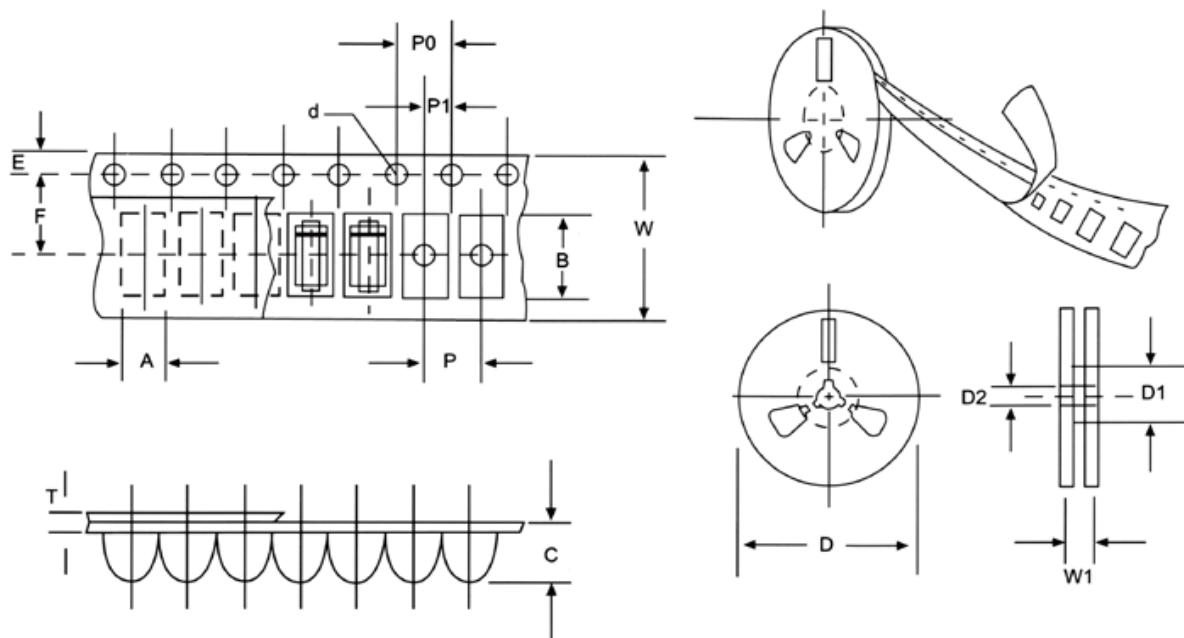
## Ordering Information

| Part Number | Package | Shipping Quantity |
|-------------|---------|-------------------|
| S2AF-S2MF   | SMAF    | 3000/tape&Reel    |

## Marking Diagram



X: From A To M



**FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES 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)    |
| Sprocket 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.