



**SURFACE MOUNT ULTRAFAST RECOVERY RECTIFIER**

**Reverse Voltage - 50 to 1000 V**

**Forward Current - 2 A**

**FEATURES**

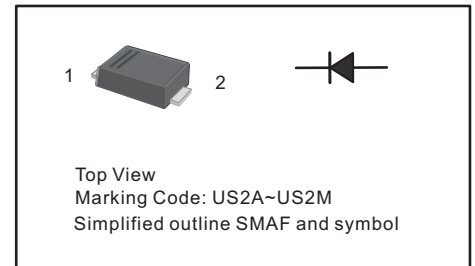
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Easy to pick and place
- High efficiency
- Lead free in comply with EU RoHS 2011/65/EU directives

**MECHANICAL DATA**

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 27mg 0.00095oz

**PINNING**

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



**Maximum Ratings and Electrical characteristics**

Ratings at 25 °C ambient temperature unless otherwise specified.

Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

| Parameter                                                                                                      | Symbols                              | US2AF      | US2BF | US2DF | US2GF | US2JF | US2KF | US2MF | Units |
|----------------------------------------------------------------------------------------------------------------|--------------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|
| 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 at T <sub>c</sub> = 125 °C                                           | I <sub>F(AV)</sub>                   | 2          |       |       |       |       |       |       | A     |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load                             | I <sub>FSM</sub>                     | 50         |       |       |       |       |       |       | A     |
| Maximum Instantaneous Forward Voltage at 2 A                                                                   | V <sub>F</sub>                       | 1.0        |       |       | 1.3   | 1.65  |       |       | V     |
| Maximum DC Reverse Current<br>T <sub>a</sub> = 25 °C<br>at Rated DC Blocking Voltage<br>T <sub>a</sub> =125 °C | I <sub>R</sub>                       | 5<br>100   |       |       |       |       |       |       | μA    |
| Maximum Reverse Recovery Time <sup>(1)</sup>                                                                   | t <sub>rr</sub>                      | 50         |       |       |       | 75    |       |       | ns    |
| Typical Thermal Resistance <sup>(2)</sup>                                                                      | R <sub>θJA</sub><br>R <sub>θJC</sub> | 65<br>20   |       |       |       |       |       |       | °C/W  |
| Operating and Storage Temperature Range                                                                        | T <sub>j</sub> , T <sub>stg</sub>    | -55 ~ +150 |       |       |       |       |       |       | °C    |

( 1 ) Measured with  $I_F = 0.5 A$ ,  $I_R = 1 A$ ,  $I_{rr} = 0.25 A$ .

( 2 ) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.



Fig.1 Forward Current Derating Curve

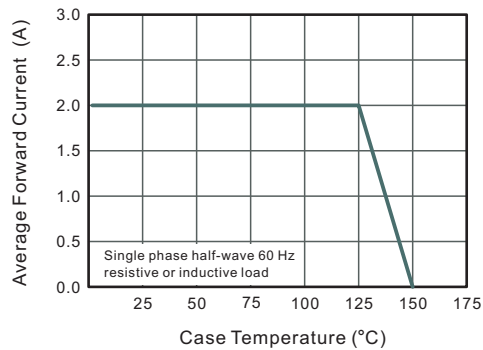


Fig.2 Typical Reverse Characteristics

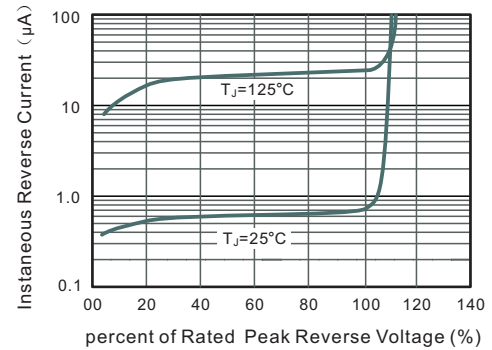


Fig.3 Typical Forward Characteristics

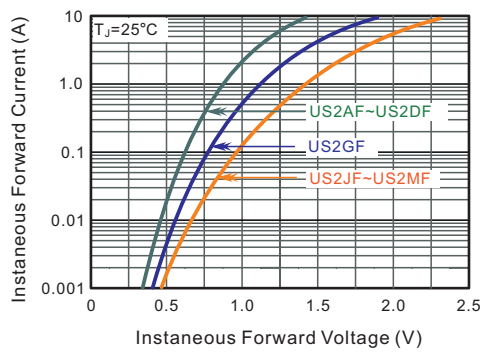
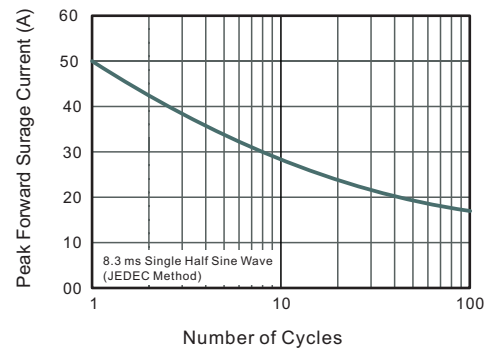


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

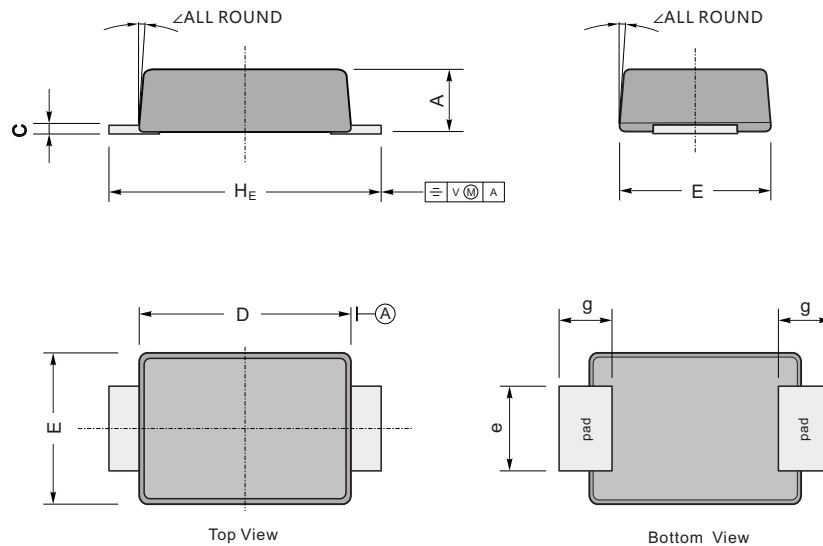




## PACKAGE OUTLINE

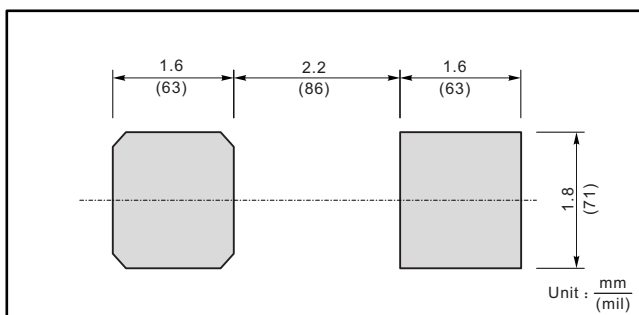
Plastic surface mounted package; 2 leads

SMAF



| UNIT |     | A   | C    | D   | E   | e   | g   | H <sub>E</sub> | ∠  |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----|
| mm   | max | 1.2 | 0.20 | 3.7 | 2.7 | 1.6 | 1.2 | 4.9            | 7° |
|      | min | 0.9 | 0.12 | 3.3 | 2.4 | 1.3 | 0.8 | 4.4            |    |
| mil  | max | 47  | 7.9  | 146 | 106 | 63  | 47  | 193            |    |
|      | min | 35  | 4.7  | 130 | 94  | 51  | 31  | 173            |    |

## The recommended mounting pad size



## Marking

| Type number | Marking code |
|-------------|--------------|
| US2AF       | US2A         |
| US2BF       | US2B         |
| US2DF       | US2D         |
| US2GF       | US2G         |
| US2JF       | US2J         |
| US2KF       | US2K         |
| US2MF       | US2M         |