

## Surface Mount Schottky Barrier Rectifier

Reverse Voltage - 20 to 200 V

Forward Current - 1 A

### FEATURES

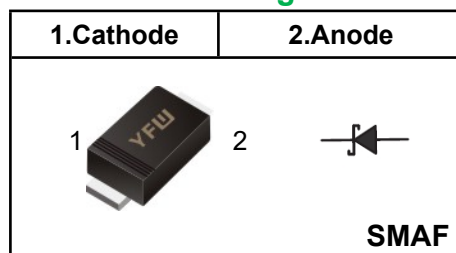
- ♦Metal silicon junction, majority carrier conduction
- ♦For surface mounted applications
- ♦Low power loss, high efficiency
- ♦High forward surge current capability
- ♦For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ♦Lead free in comply with EU RoHS 2011/65/EU directives



### MECHANICAL DATA

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

### Pinning



### Marking Code

|        |       |
|--------|-------|
| SS12F  | SS12  |
| SS14F  | SS14  |
| SS16F  | SS16  |
| SS18F  | SS18  |
| SS110F | SS110 |
| SS112F | SS112 |
| SS115F | SS115 |
| SS120F | SS120 |

### Absolute Maximum Ratings and Electrical characteristics

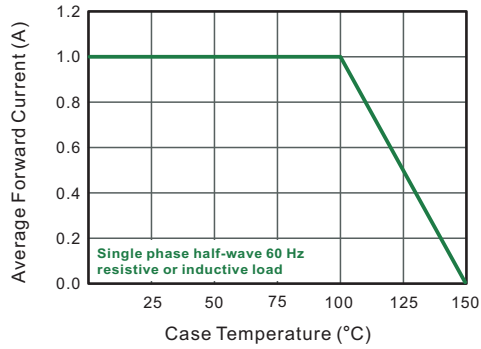
Ratings at 25 ° ambient temperature unless otherwise specified.Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20 %

| For capacitive load, derate by 20 %                                                                              |                 |            |       |       |       |          |        |          |        |       |
|------------------------------------------------------------------------------------------------------------------|-----------------|------------|-------|-------|-------|----------|--------|----------|--------|-------|
| Parameter                                                                                                        | Symbols         | SS12F      | SS14F | SS16F | SS18F | SS110F   | SS112F | SS115F   | SS120F | Units |
| Maximum Repetitive Peak Reverse Voltage                                                                          | $V_{RRM}$       | 20         | 40    | 60    | 80    | 100      | 120    | 150      | 200    | V     |
| Maximum RMS voltage                                                                                              | $V_{RMS}$       | 14         | 28    | 42    | 56    | 70       | 84     | 105      | 140    | V     |
| Maximum DC Blocking Voltage                                                                                      | $V_{DC}$        | 20         | 40    | 60    | 80    | 100      | 120    | 150      | 200    | V     |
| Maximum Average Forward Rectified Current                                                                        | $I_{F(AV)}$     | 1.0        |       |       |       |          |        |          |        | A     |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load (JEDEC method)                | $I_{FSM}$       | 40         |       |       |       | 30       |        |          |        | A     |
| Maximum Instantaneous Forward Voltage at 1 A                                                                     | $V_F$           | 0.55       |       | 0.70  |       | 0.85     |        | 0.90     |        | V     |
| Maximum Instantaneous Reverse Current at Rated DC Reverse Voltage<br>$T_A = 25^{\circ}C$<br>$T_A = 100^{\circ}C$ | $I_R$           | 0.3<br>10  |       |       |       | 0.2<br>5 |        | 0.1<br>2 |        | mA    |
| Typical Junction Capacitance <sup>(1)</sup>                                                                      | $C_j$           | 110        |       | 80    |       |          |        |          |        | pF    |
| Typical Thermal Resistance <sup>(2)</sup>                                                                        | $R_{\theta JA}$ | 95         |       |       |       |          |        |          |        | °C/W  |
| Operating Junction Temperature Range                                                                             | $T_j$           | -55 ~ +150 |       |       |       |          |        |          |        | °C    |
| Storage Temperature Range                                                                                        | $T_{stg}$       | -55 ~ +150 |       |       |       |          |        |          |        | °C    |

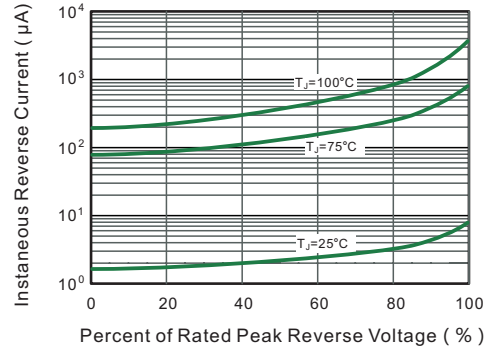
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

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

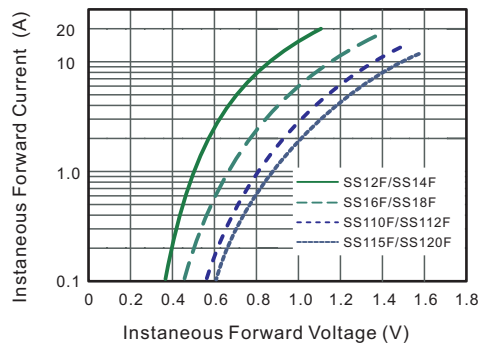
**Fig.1 Forward Current Derating Curve**



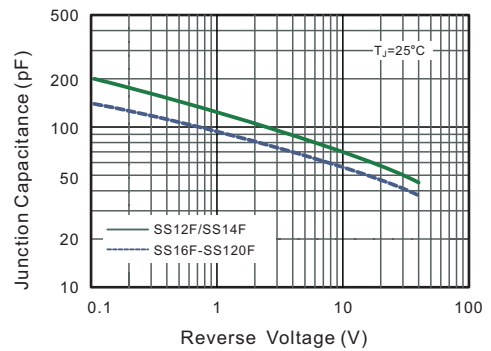
**Fig.2 Typical Reverse Characteristics**



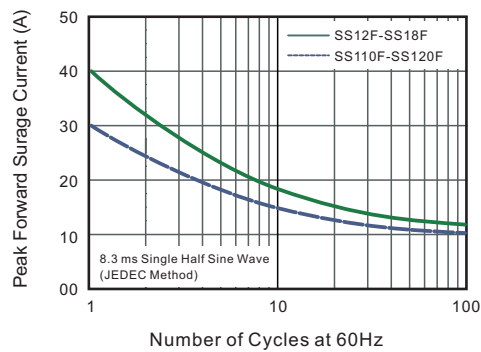
**Fig.3 Typical Forward Characteristic**



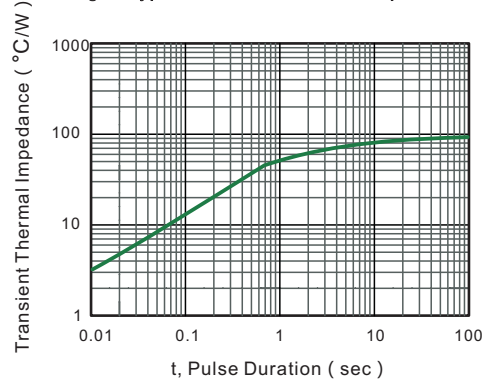
**Fig.4 Typical Junction Capacitance**



**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



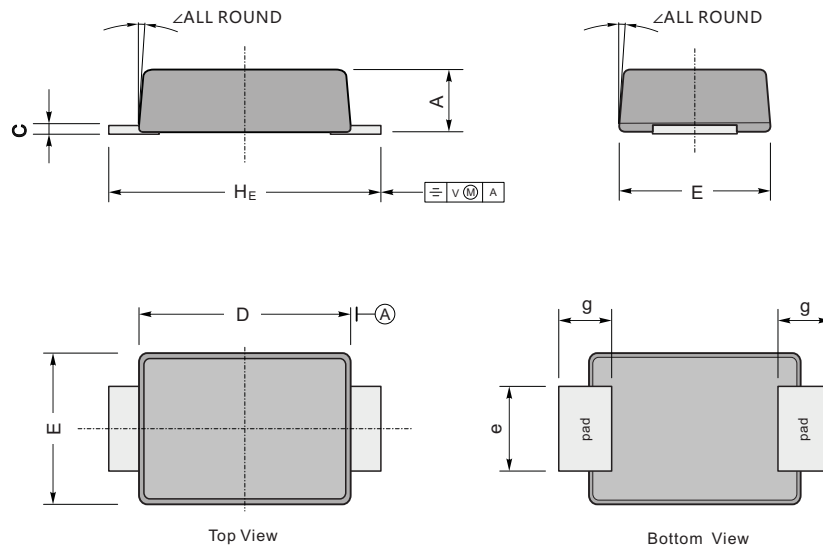
**Fig.6- Typical Transient Thermal Impedance**



## Package Outline

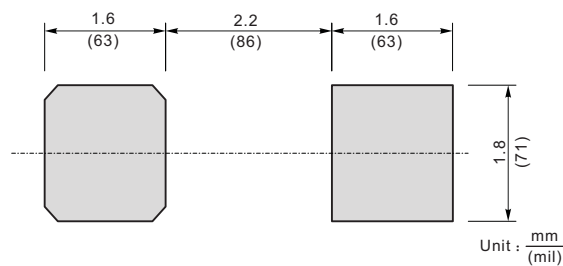
## SMAF

Plastic surface mounted package; 2 leads



| UNIT |     | A   | C    | D   | E   | e   | g   | H <sub>E</sub> | $\angle$ |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----------|
| mm   | max | 1.1 | 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 | 43  | 7.9  | 146 | 106 | 63  | 47  | 193            |          |
|      | min | 35  | 4.7  | 130 | 94  | 51  | 31  | 173            |          |

## The recommended mounting pad size



## Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SMAF    | Tape/Reel, 13" reel | 10000            | EIA-481-1         |
|         | Tape/Reel, 7" reel  | 3000             | EIA-481-1         |