

## Surface Mount Schottky Barrier Rectifier

Reverse Voltage - 20 to 200 V

Forward Current - 5 A

### FEATURES

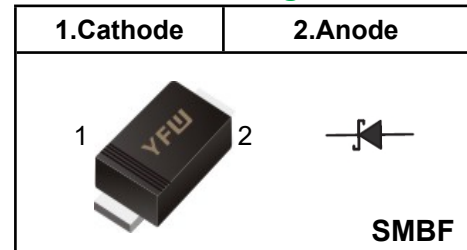
- ◆Metal silicon junction, majority carrier conduction
- ◆For surface mounted applications
- ◆Low power loss, high efficiency
- ◆High forward surge current capability
- ◆For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ◆Lead free in comply with EU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



### MECHANICAL DATA

- ◆Case: SMBF
- ◆Terminals: Solderable per MIL-STD-750, Method 2026
- ◆Approx. Weight: 57mg / 0.002oz

### Pinning



### Marking Code

|                |              |
|----------------|--------------|
| <b>SS52BF</b>  | <b>S52B</b>  |
| <b>SS54BF</b>  | <b>S54B</b>  |
| <b>SS56BF</b>  | <b>S56B</b>  |
| <b>SS58BF</b>  | <b>S58B</b>  |
| <b>SS510BF</b> | <b>S510B</b> |
| <b>SS512BF</b> | <b>S512B</b> |
| <b>SS515BF</b> | <b>S515B</b> |
| <b>SS520BF</b> | <b>S520B</b> |

#### Absolute Maximum Ratings and Electrical characteristics

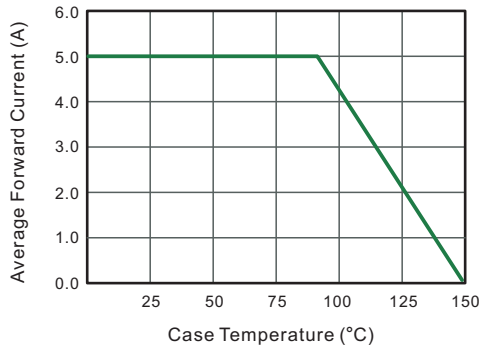
Ratings at 25 ° ambient temperature unless otherwise specified. Single phase, half wave, 60Hz resistive or inductive load, for capacitive load, derate by 20 %

| Parameter  | Symbols         | SS52BF     | SS54BF | SS56BF | SS58BF | SS510BF | SS512BF | SS515BF | SS520BF | 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  | $I_{F(AV)}$     | 5.0        |        |        |        |         |         |         |         | A     |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load (JEDEC method)  | $I_{FSM}$       | 150        |        |        |        |         |         |         |         | A     |
| Maximum Instantaneous Forward Voltage at 5 A   | $V_F$           | 0.55       |        | 0.70   |        | 0.85    |         | 0.95    |         | V     |
| Maximum Instantaneous Reverse Current at Rated DC Reverse Voltage<br><small><math>T_A = 25^{\circ}C</math><br/><math>T_A = 100^{\circ}C</math></small> | $I_R$           | 1.0<br>50  |        |        |        |         |         |         |         | mA    |
| Typical Junction Capacitance <sup>(1)</sup>  | $C_j$           | 800        |        |        |        | 500     |         |         |         | pF    |
| Typical Thermal Resistance <sup>(2)</sup>  | $R_{\theta JA}$ | 45         |        |        |        |         |         |         |         | °C/W  |
| Operating Junction Temperature Range   | $T_j$           | -55 ~ +150 |        |        |        |         |         |         |         | °C    |
| Storage Temperature Range  | $T_{stg}$       | -55 ~ +150 |        |        |        |         |         |         |         | °C    |

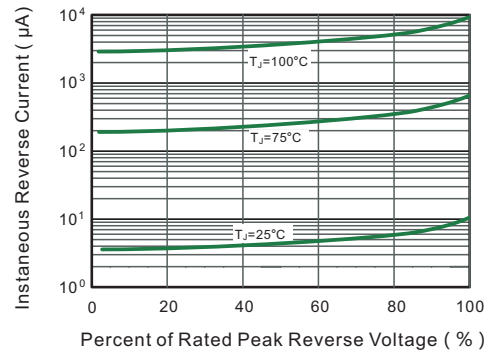
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

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

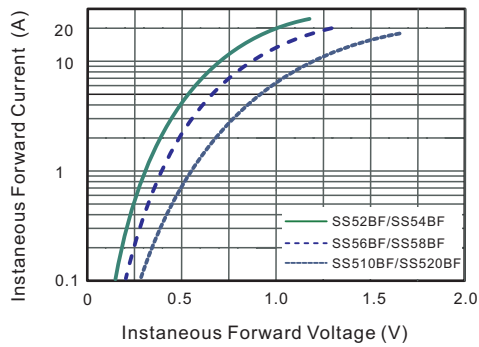
**Fig.1 Forward Current Derating Curve**



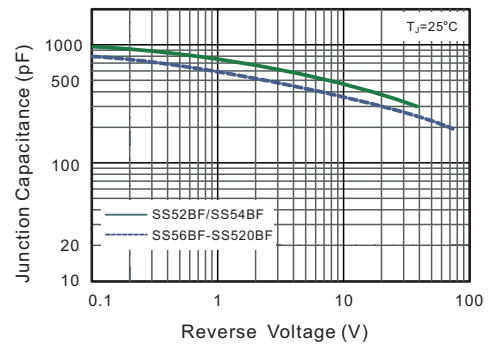
**Fig.2 Typical Reverse Characteristics**



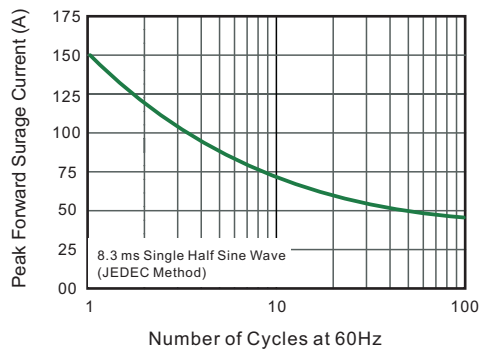
**Fig.3 Typical Forward Characteristic**



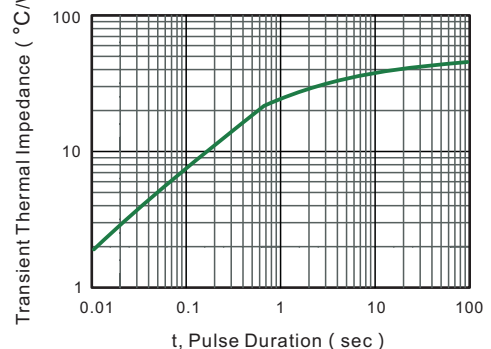
**Fig.4 Typical Junction Capacitance**



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



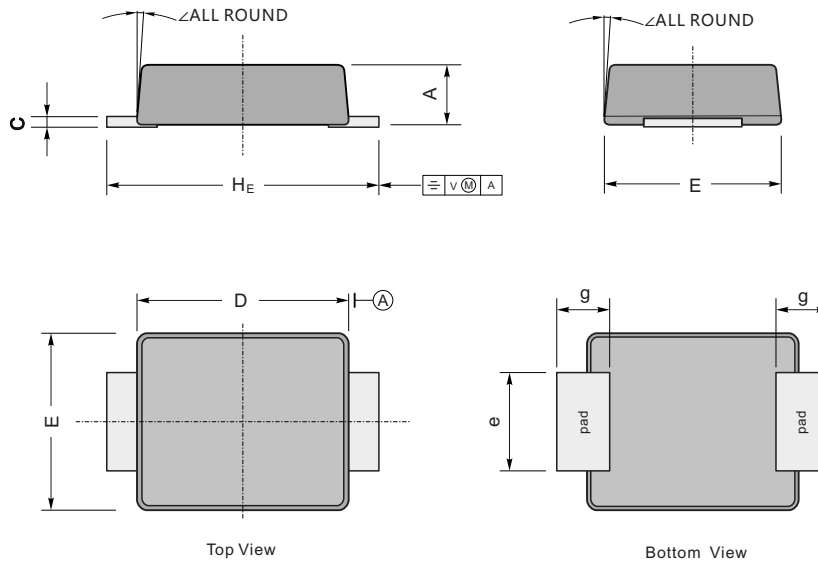
**Fig.6- Typical Transient Thermal Impedance**



**Package Outline**

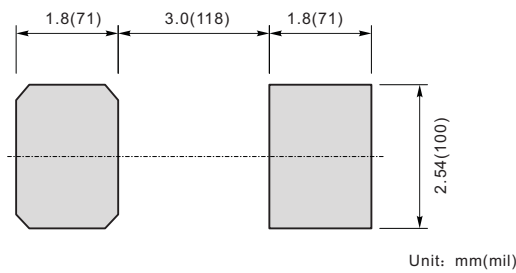
**SMBF**

Plastic surface mounted package; 2 leads



| UNIT |     | A   | C    | D   | E   | $H_E$ | e   | g   | $\angle$ |
|------|-----|-----|------|-----|-----|-------|-----|-----|----------|
| mm   | max | 1.3 | 0.26 | 4.4 | 3.7 | 5.5   | 2.2 | 1.0 | 9°       |
|      | min | 1.1 | 0.18 | 4.2 | 3.5 | 5.1   | 1.9 |     |          |
| mil  | max | 51  | 10   | 173 | 146 | 216   | 86  | 40  |          |
|      | min | 43  | 7    | 165 | 138 | 200   | 75  |     |          |

**The recommended mounting pad size**



**Summary of Packing Options**

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SMBF    | Tape/Reel, 13" reel | 5000             | EIA-481-1         |

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