



Surface Mount Schottky Barrier Rectifier  
Reverse Voltage - 20 to 200V  
Forward Current - 5.0A

#### FEATURES

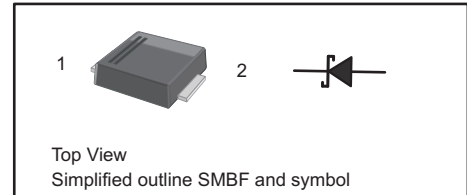
- Metal silicon junction, majority carrier conduction
- For surface mounted applications
- Low power loss, high efficiency
- High forward surge current capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

#### MECHANICAL DATA

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

#### PINNING

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



#### Absolute Maximum Ratings and Electrical characteristics

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

| Parameter                                                                                              | Symbols                                               | SS52 BF        | SS54 BF | SS56 BF | SS58 BF | SS510 BF | SS512 BF | SS515 BF | SS520 BF | 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 @ Fig.1                                                      | $I_{F(AV)}$                                           | 5.0            |         |         |         |          |          |          |          | A                |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)      | $I_{FSM}$                                             | 120            |         |         |         |          |          |          |          | A                |
| Peak Forward Surge Current, 1.0ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)      | $I_{FSM}$                                             | 240            |         |         |         |          |          |          |          | A                |
| $I^2t$ Rating for fusing ( $3ms \leq t \leq 8.3ms$ )                                                   | $I^2t$                                                | 59.7           |         |         |         |          |          |          |          | A <sup>2</sup> S |
| Max Instantaneous Forward Voltage at 5 A                                                               | $V_F$                                                 | 0.55           |         | 0.70    |         | 0.85     |          | 0.95     |          | V                |
| Maximum DC Reverse Current<br>$T_a = 25^\circ C$<br>at Rated DC Reverse Voltage<br>$T_a = 100^\circ C$ | $I_R$                                                 | 1.0<br>50      |         |         |         |          |          |          |          | mA               |
| Typical Junction Capacitance <sup>(1)</sup>                                                            | $C_j$                                                 | 270            |         | 220     |         | 160      |          | 100      | 80       | pF               |
| Typical Thermal Resistance <sup>(2)</sup>                                                              | $R_{\theta JA}$<br>$R_{\theta JC}$<br>$R_{\theta JL}$ | 42<br>10<br>15 |         |         |         |          |          |          |          | °C/W             |
| Operating Junction Temperature Range                                                                   | $T_j$                                                 | -55 ~ +125     |         |         |         |          |          |          |          | °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 1.5" X 1.5" (3.81 X 3.81 cm) copper pad areas.



Fig.1 Forward Current Derating Curve

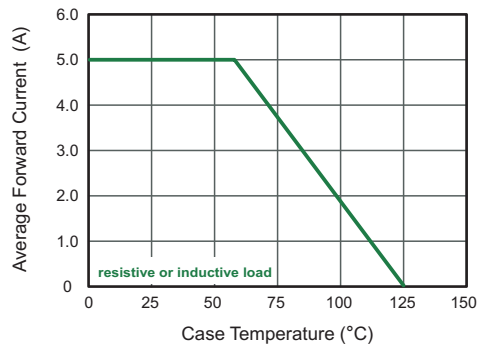


Fig.2 Typical Reverse Characteristics

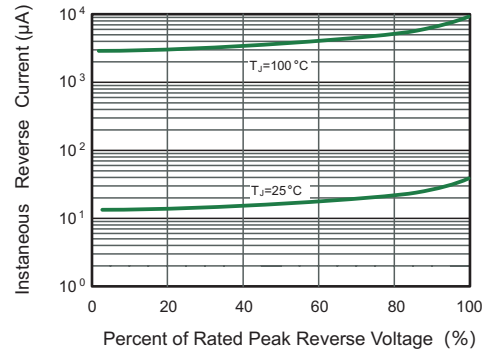


Fig.3 Typical Forward Characteristic

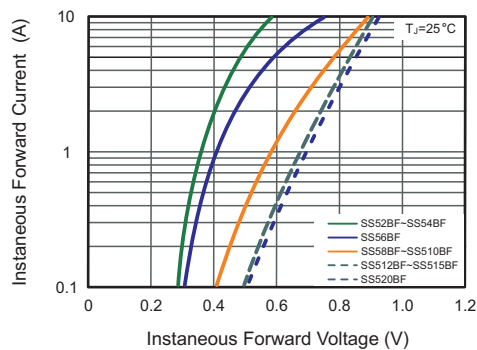


Fig.4 Typical Junction Capacitance

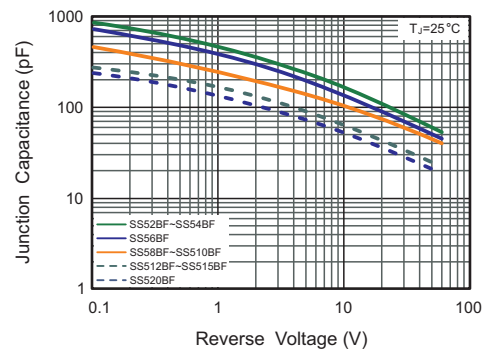
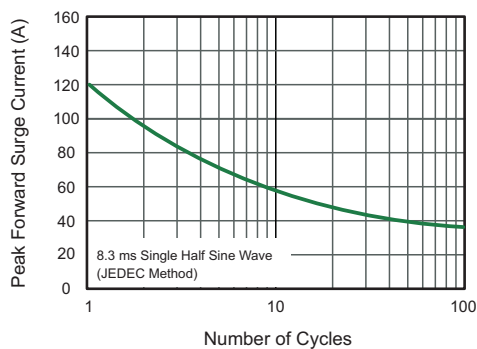


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

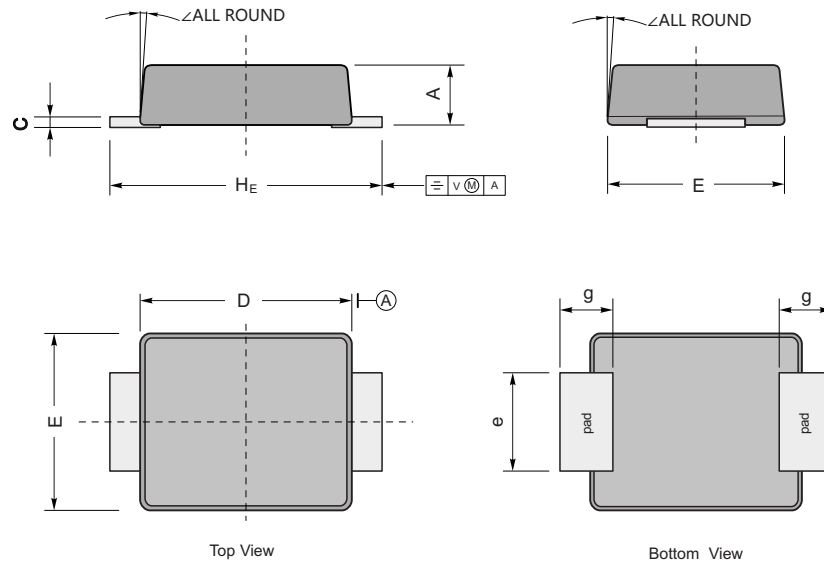




## PACKAGE OUTLINE

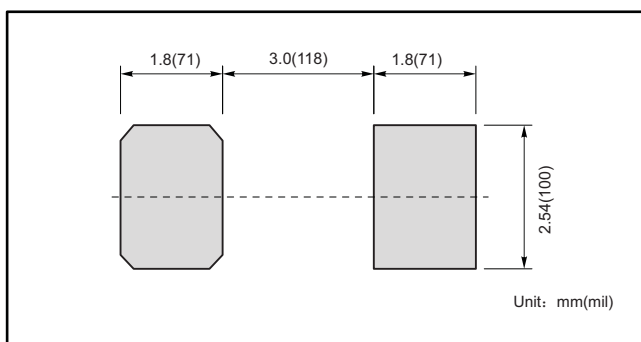
Plastic surface mounted package; 2 leads

SMBF



| UNIT |     | A   | C    | D   | E   | H <sub>E</sub> | e   | g   | ∠  |
|------|-----|-----|------|-----|-----|----------------|-----|-----|----|
| 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



### Marking

| Type number | Marking code |
|-------------|--------------|
| SS52BF      | S52B         |
| SS54BF      | S54B         |
| SS56BF      | S56B         |
| SS58BF      | S58B         |
| SS510BF     | S510B        |
| SS512BF     | S512B        |
| SS515BF     | S515B        |
| SS520BF     | S520B        |



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