

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

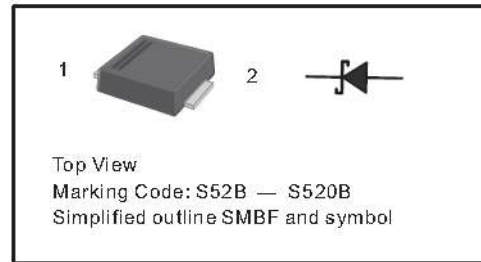
- Case: SMBF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 57mg / 0.002oz

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 %

PINNING

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



| Parameter | Symbol | 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 |
| Max Instantaneous Forward Voltage at 5 A | V_F | 0.45 | 0.55 | 0.70 | | 0.85 | | | | V |
| Maximum DC Reverse Current $T_a = 25^\circ\text{C}$ at Rated DC Reverse Voltage $T_a = 100^\circ\text{C}$ | I_R | | | | | 1.0 | | | | mA |
| | | | | | | 50 | | | | |
| Typical Junction Capacitance ¹⁾ | C_j | 800 | | 500 | | | | | | pF |
| Typical Thermal Resistance ²⁾ | $R_{\theta JA}$ | 40 | | | | | | | | °C/W |
| Operating Junction Temperature Range | T_j | -55 ~ +125 | | | | | | | | °C |
| Storage Temperature Range | T_{stg} | -55 ~ +150 | | | | | | | | °C |

1) Measured at 1MHz and applied reverse voltage of 4 V D.C. 2) P.C.B. mounted with 0.5 X 0.5" (12.7 X 12.7 mm) copper pad areas.

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Fig.1 Forward Current Derating Curve

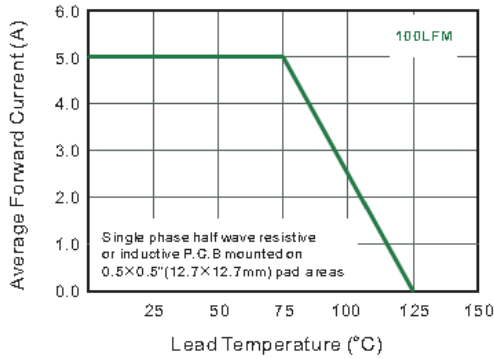


Fig.2 Typical Reverse Characteristics

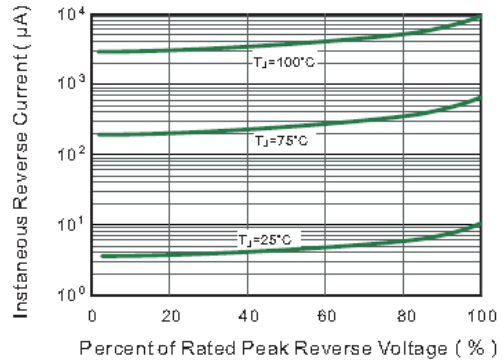


Fig.3 Typical Forward Characteristic

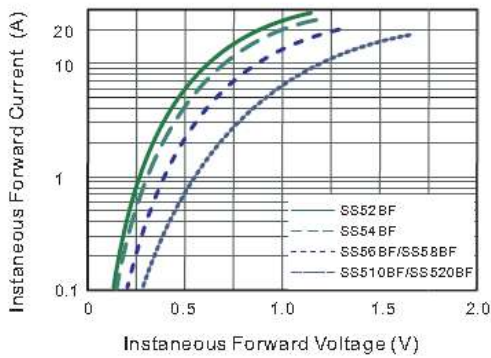


Fig.4 Typical Junction Capacitance

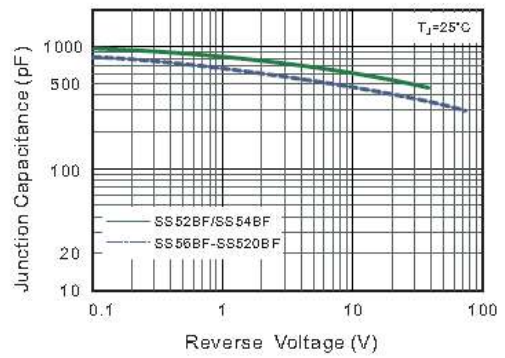


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

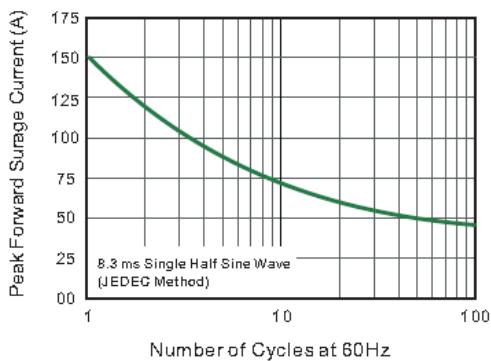
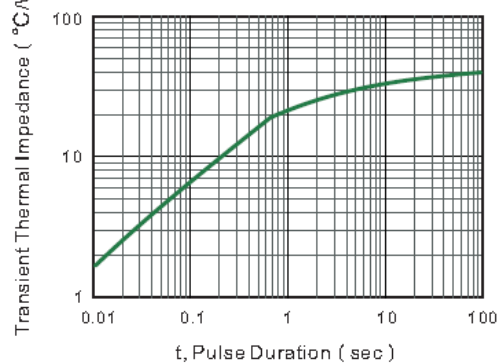


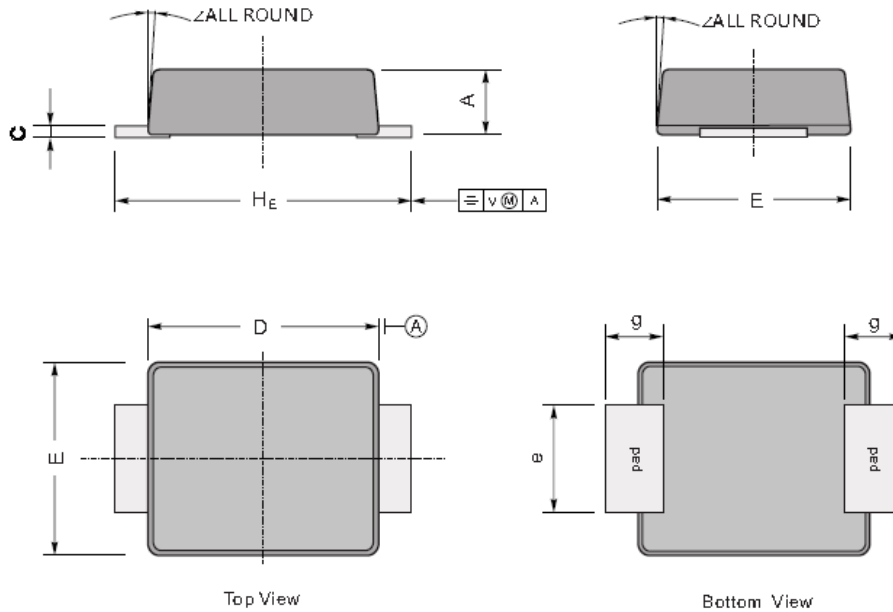
Fig.6- Typical Transient Thermal Impedance



PACKAGE OUTLINE

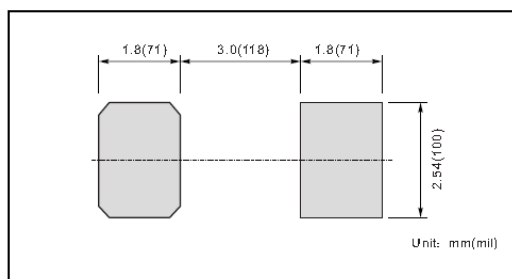
Plastic surface mounted package; 2 leads

SMBF



| UNIT | | A | C | D | E | H _E | 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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