

## Surface Mount Schottky Barrier Rectifiers

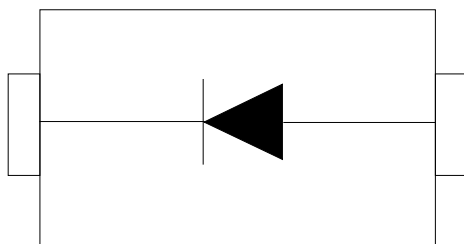
### Description

General Application Schottky barrier rectifier, encapsulated in a SMBF Surface-Mounted Device (SMD) plastic package.

### Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications
- Built-in strain relief, ideal for automated placement
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed 260 °C /10 seconds at terminals

### Dimensions and Pin Configuration



Graphic symbol

### Package



SMBF (Top View)

### Mechanical Characteristics

- Case: SMBF
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Polarity symbol marking on body
- Case Material: “Green” Molding Compound

### Applications

- Switch Mode Power Supply (SMPS)
- For use in low voltage high frequency inverters, freewheeling
- DC/DC converters, and polarity protection applications

### Ordering Information

| Part Number | Shipping         | Reel Size |
|-------------|------------------|-----------|
| SS12BF      | 3000/Tape & Reel | 11 inch   |
| SS14BF      | 3000/Tape & Reel | 11 inch   |
| SS145BF     | 3000/Tape & Reel | 11 inch   |
| SS16BF      | 3000/Tape & Reel | 11 inch   |
| SS18BF      | 3000/Tape & Reel | 11 inch   |
| SS110BF     | 3000/Tape & Reel | 11 inch   |
| SS115BF     | 3000/Tape & Reel | 11 inch   |
| SS120BF     | 3000/Tape & Reel | 11 inch   |

**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

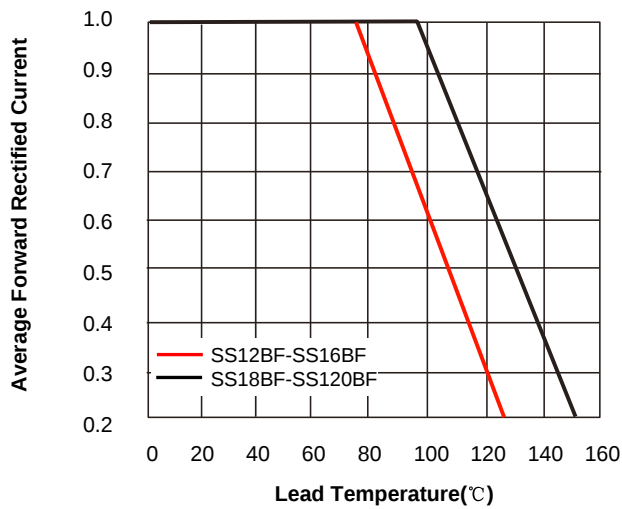
| Items                                                                                   | Symbol             | SS12BF      | SS14BF | SS145BF | SS16BF | SS18BF     | SS110BF | SS115BF | SS120BF | UNIT |
|-----------------------------------------------------------------------------------------|--------------------|-------------|--------|---------|--------|------------|---------|---------|---------|------|
| Maximum repetitive peak reverse voltage                                                 | V <sub>RRM</sub>   | 20          | 40     | 45      | 60     | 80         | 100     | 150     | 200     | V    |
| Maximum RMS voltage                                                                     | V <sub>RMS</sub>   | 14          | 28     | 31.5    | 42     | 56         | 70      | 105     | 140     | V    |
| Maximum DC blocking voltage                                                             | V <sub>DC</sub>    | 20          | 40     | 45      | 60     | 80         | 100     | 150     | 200     | V    |
| Maximum average forward rectified current                                               | I <sub>F(AV)</sub> | 1.0         |        |         |        |            |         |         |         | A    |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load | I <sub>FSM</sub>   | 30.0        |        |         |        |            |         |         |         | A    |
| Typical thermal resistance                                                              | R <sub>QJA</sub>   | 85.0        |        |         |        |            |         |         |         | ℃/W  |
| Operating junction temperature range                                                    | T <sub>J</sub>     | -55 ~ + 125 |        |         |        | -55 ~ +150 |         |         |         | ℃    |
| Storage temperature range                                                               | T <sub>STG</sub>   | -55 ~ +150  |        |         |        |            |         |         |         | ℃    |

**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

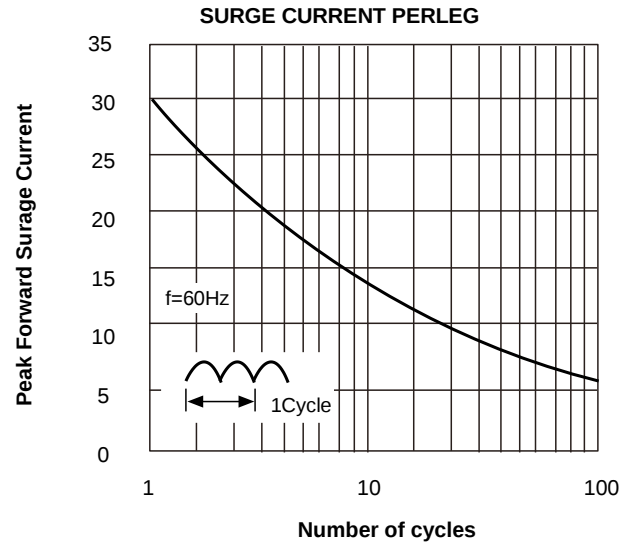
| Items                                 | Test conditions      | Symbol         | SS12BF~SS145BF | SS16BF | SS18BF~110BF | SS115BF~120BF | UNIT |
|---------------------------------------|----------------------|----------------|----------------|--------|--------------|---------------|------|
| Maximum instantaneous forward voltage | I <sub>F</sub> =1.0A | V <sub>F</sub> | 0.55           | 0.70   | 0.85         | 0.95          | V    |
| Maximum DC reverse current            | T <sub>A</sub> =25℃  | I <sub>R</sub> | 0.2            |        | 0.05         |               | mA   |
| rated DC blocking voltage             | T <sub>A</sub> =100℃ |                | 10             |        | 5            |               |      |

**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**

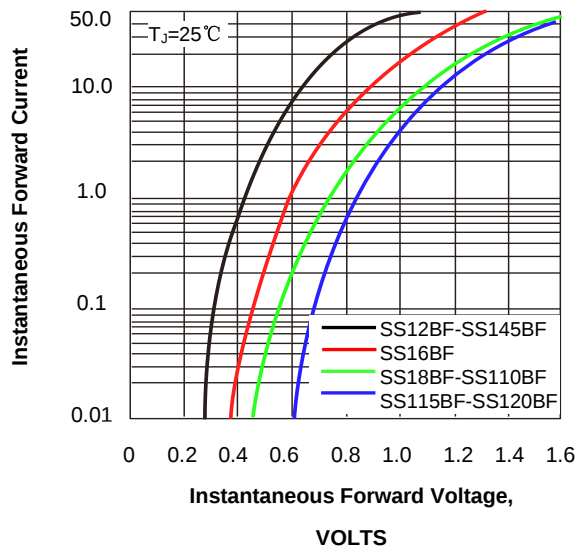
**FIG.1-DERATING CURVE OUTPUT RECTIFIED CURRENT**



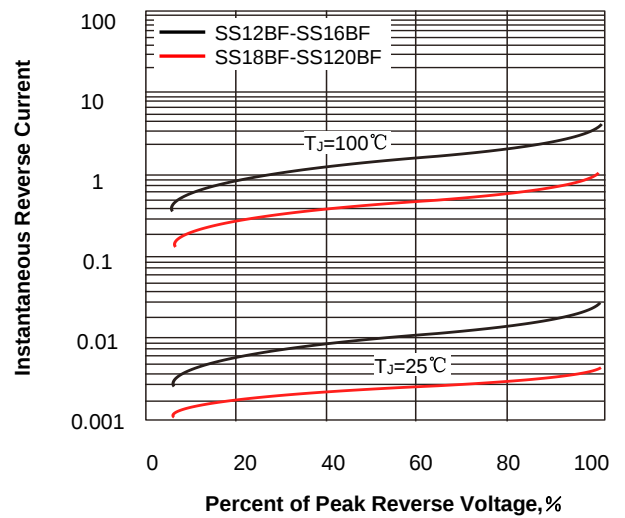
**FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG**



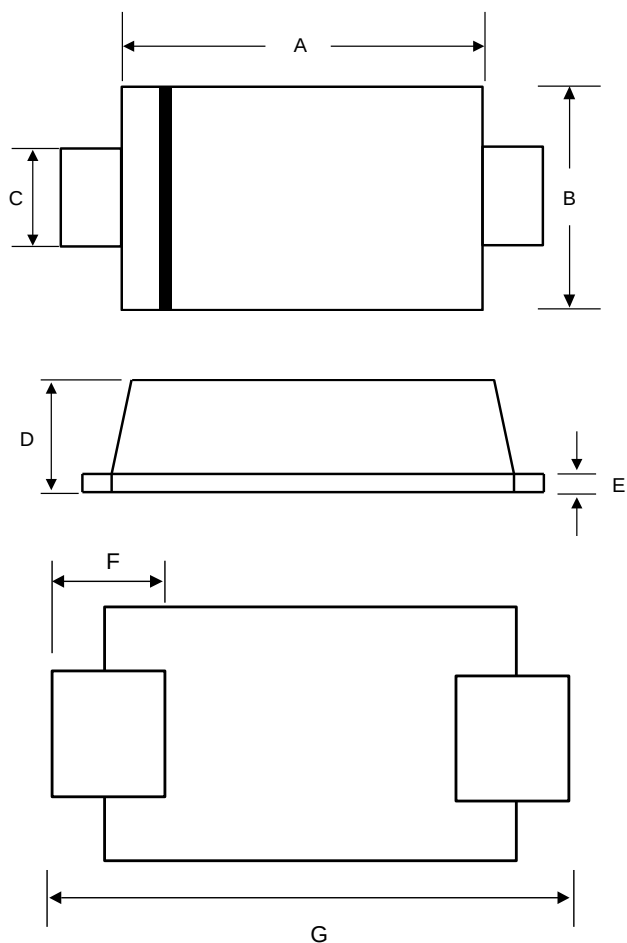
**FIG.3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS**



**FIG.4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS**

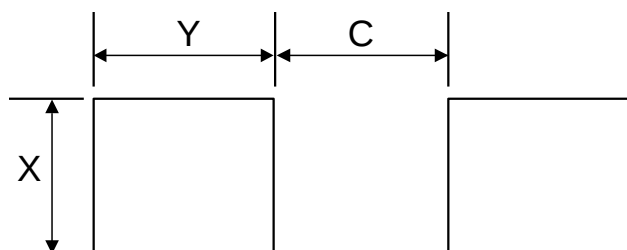


## SMBF Package Outline Drawing



| Dim | Millimeters |      | Inches |       |
|-----|-------------|------|--------|-------|
|     | Min         | Max  | Min    | Max   |
| A   | 4.15        | 4.45 | 0.163  | 0.175 |
| B   | 3.45        | 3.75 | 0.135  | 0.147 |
| C   | 1.90        | 2.10 | 0.074  | 0.083 |
| D   | 1.05        | 1.55 | 0.041  | 0.061 |
| E   | 0.15        | 0.25 | 0.006  | 0.010 |
| F   | 0.70        | 1.35 | 0.028  | 0.053 |
| G   | 5.10        | 5.50 | 0.200  | 0.217 |

## Suggested Land Pattern



| SYM | DIMENSIONS  |        |
|-----|-------------|--------|
|     | MILLIMETERS | INCHES |
| X   | 2.30        | 0.091  |
| Y   | 2.00        | 0.078  |
| C   | 2.10        | 0.083  |

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