

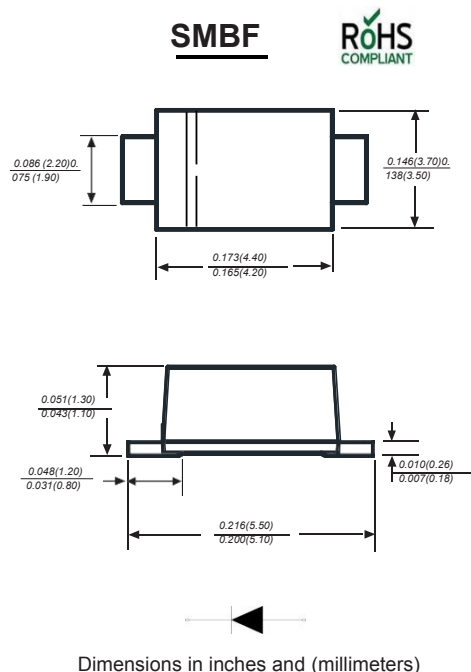
## SURFACE MOUNT GENERAL PURPOSE SILICON RECTIFIER

### Features

- ◆ For surface mounted applications
- ◆ Low profile package
- ◆ Glass Passivated Chip Junction
- ◆ Easy to pick and place
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

### Mechanical Data

Case : JEDEC SMBF molded plastic body  
Terminals : Solderable per MIL-STD-750, Method 2026  
Polarity : Polarity symbol marking on body  
Mounting Position : Any  
Weight : 0.002 ounce, 0.057 grams



### Maximum Ratings And Electrical Characteristics

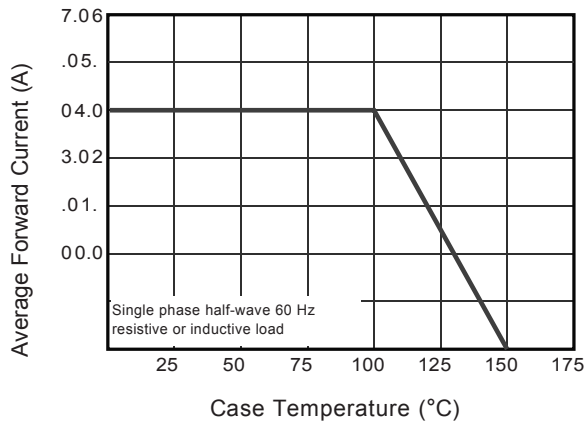
Ratings at 25 °C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

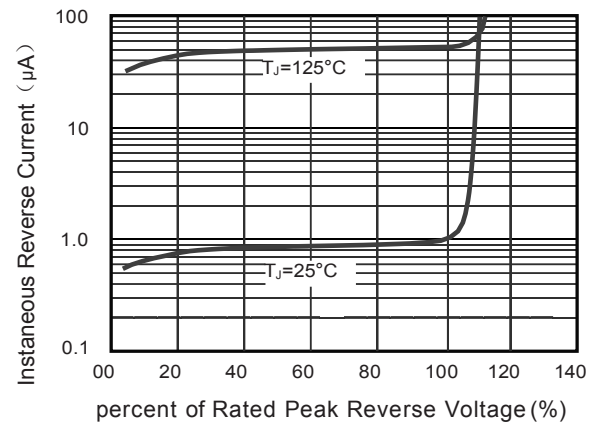
| Parameter                                                                                              | SYMBOLS         | S5ABF        | S5BBF        | S5DBF        | S5GBF        | S5JBF        | S5KBF        | S5MBF        | UNITS         |
|--------------------------------------------------------------------------------------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Marking Code                                                                                           |                 | RCD<br>S5ABF | RCD<br>S5BBF | RCD<br>S5DBF | RCD<br>S5GBF | RCD<br>S5JBF | RCD<br>S5KBF | RCD<br>S5MBF |               |
| Maximum repetitive peak reverse voltage                                                                | $V_{RRM}$       | 50           | 100          | 200          | 400          | 600          | 800          | 1000         | V             |
| Maximum RMS voltage                                                                                    | $V_{RMS}$       | 35           | 70           | 140          | 280          | 420          | 560          | 700          | V             |
| Maximum DC blocking voltage                                                                            | $V_{DC}$        | 50           | 100          | 200          | 400          | 600          | 800          | 1000         | V             |
| Maximum average forward rectified current at $T_L=65^{\circ}C$                                         | $I_{(AV)}$      | 5.0          |              |              |              |              |              |              | A             |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method) | $I_{FSM}$       | 125          |              |              |              |              |              |              | A             |
| Maximum instantaneous forward voltage at 5.0A                                                          | $V_F$           | 1.10         |              |              |              |              |              |              | V             |
| Maximum DC reverse current<br>$T_A=25^{\circ}C$<br>at rated DC blocking voltage<br>$T_A=125^{\circ}C$  | $I_R$           | 5.0<br>150.0 |              |              |              |              |              |              | $\mu A$       |
| Typical junction capacitance (NOTE 1)                                                                  | $C_J$           | 45.0         |              |              |              |              |              |              | pF            |
| Typical thermal resistance (NOTE 2)                                                                    | $R_{\theta JA}$ | 40.0         |              |              |              |              |              |              | $^{\circ}C/W$ |
| Operating junction and storage temperature range                                                       | $T_J, T_{STG}$  | -55 to +150  |              |              |              |              |              |              | $^{\circ}C$   |

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
2. P.C.B. mounted with 0.5x0.5" (12.7x12.7mm) copper pad areas

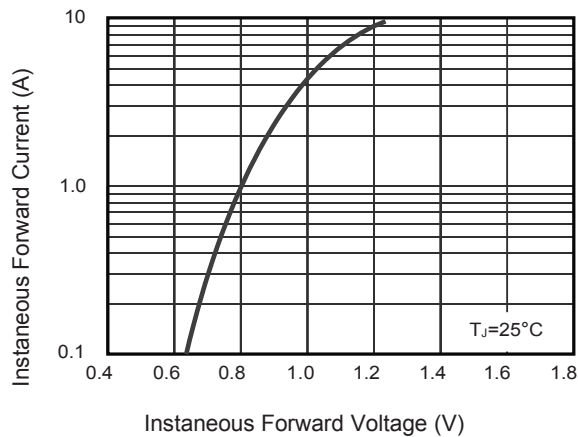
**Fig.1 Forward Current Derating Curve**



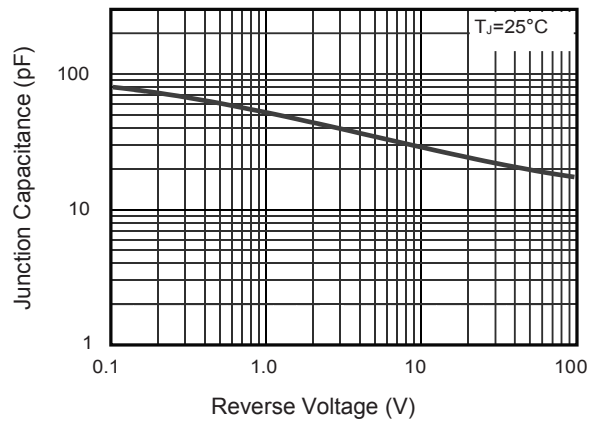
**Fig.2 Typical Reverse Characteristics**



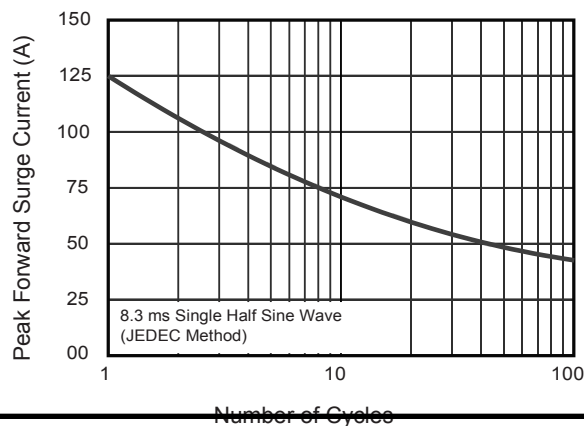
**Fig.3 Typical Forward Characteristic**

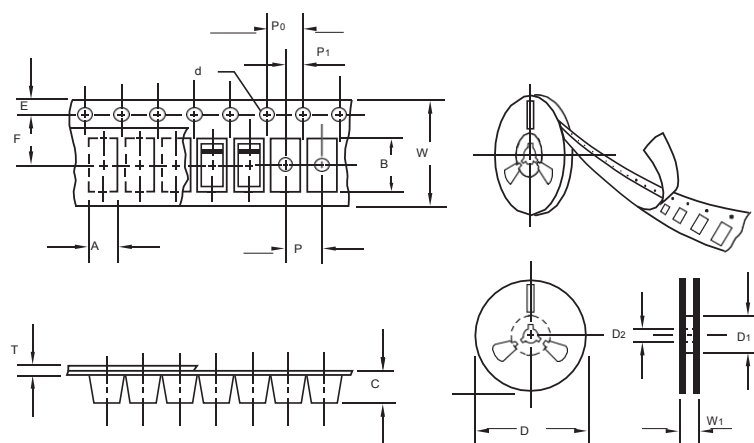


**Fig.4 Typical Junction Capacitance**



**Fig.6 Maximum Non-Repetitive Peak Forward Surge Current**





unit:mm

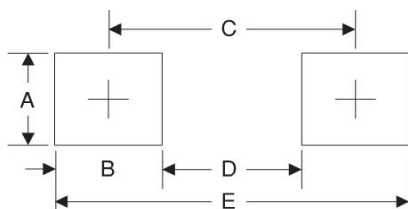
| Item                      | Symbol | Tolerance | SMBF   |
|---------------------------|--------|-----------|--------|
| Carrier width             | A      | 0.1       | 3.81   |
| Carrier length            | B      | 0.1       | 5.61   |
| Carrier depth             | C      | 0.1       | 1.60   |
| Sprocket hole             | d      | 0.05      | 1.50   |
| 13" Reel outside diameter | D      | 2.0       | 330.00 |
| 13" Reel inner diameter   | D1     | min       | 50.00  |
| Feed hole diameter        | D2     | 0.5       | 13.00  |
| Sprocket hole position    | E      | 0.1       | 1.75   |
| Punch hole position       | F      | 0.1       | 5.50   |
| Punch hole pitch          | P      | 0.1       | 4.00   |
| Sprocket hole pitch       | P0     | 0.1       | 4.00   |
| Embossment center         | P1     | 0.1       | 2.00   |
| Overall tape thickness    | T      | 0.1       | 0.30   |
| Tape width                | W      | 0.3       | 12.00  |
| Reel width                | W1     | 1.0       | 12.30  |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

## Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (mm) | BOX (pcs) | INNER BOX (mm) | REEL DIA, (mm) | CARTON SIZE (mm) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|------------------------|-----------|----------------|----------------|------------------|--------------|---------------------------|
| SMBF    | 13"       | 5,000      | 4.0                    | 10,000    | 190*190*41     | 330            | 365*365*360      | 80,000       | 14.0                      |

## Suggested Pad Layout



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A      | 2.54      | 0.100       |
| B      | 1.8       | 0.071       |
| C      | 4.8       | 0.189       |
| D      | 3.0       | 0.118       |
| E      | 6.6       | 0.260       |