



S3ABF THRU S3MBF

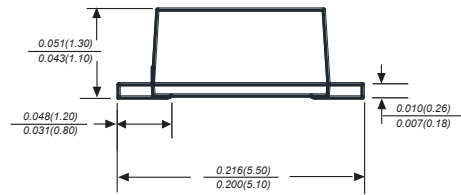
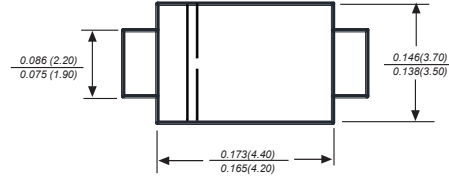
Reverse Voltage - 50 to 1000 Volts Forward Current - 3.0 Ampere

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

SMBF



Dimensions in inches and (millimeters)

Mechanical Data

Case: JEDEC ÛT BØ molded plastic body
 Terminals: Solderable per MIL-STD-750, Method 2026A
 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 | S3ABF | S3BBF | S3DBF | S3GBF | S3JBF | S3KBF | S3MBF | UNITS |
|---|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------------|
| | | MDD S3AB | MDD S3BB | MDD S3DB | MDD S3GB | MDD S3JB | MDD S3KB | MDD S3MB | |
| 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 $T_L=115^\circ\text{C}$ | $I_{(AV)}$ | 3 | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 80 | | | | | | | A |
| Maximum instantaneous forward voltage at 3.0A | V_F | 1.1 | | | | | | | V |
| Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$ | I_R | 5 150 | | | | | | | μA |
| Typical junction capacitance (NOTE 1) | C_J | 35 | | | | | | | pF |
| Typical thermal resistance (NOTE 2) | $R_{\theta JA}$ $R_{\theta JC}$ | 45 15 | | | | | | | $^\circ\text{C}/\text{W}$ |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | | | | | | | $^\circ\text{C}$ |

Note: 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 2. P.C.B. mounted with 2.0"x2.0" (5.0x5.0cm) copper pad areas



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Typical Characteristics

Fig.1 Forward Current Derating Curve

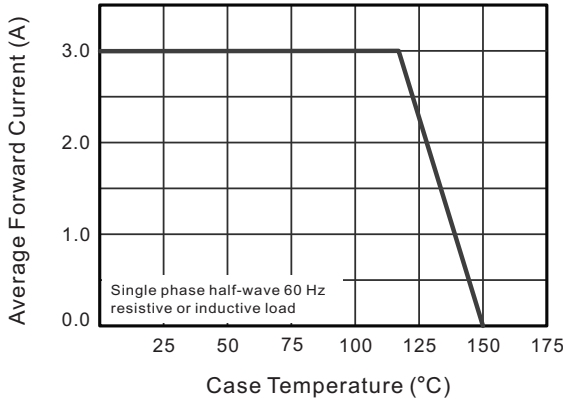


Fig.2 Typical Reverse Characteristics

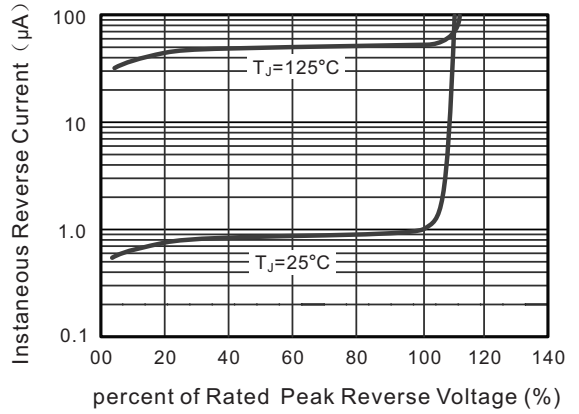


Fig.3 Typical Forward Characteristic

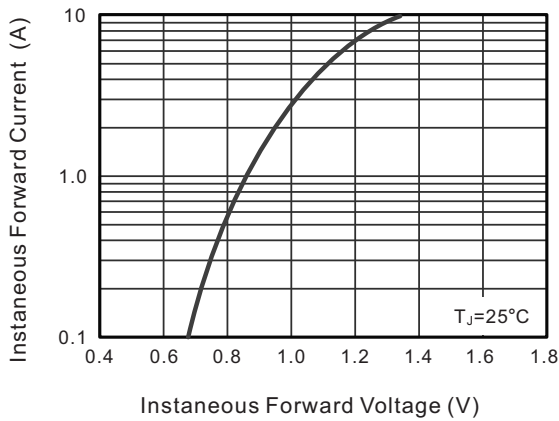


Fig.4 Typical Junction Capacitance

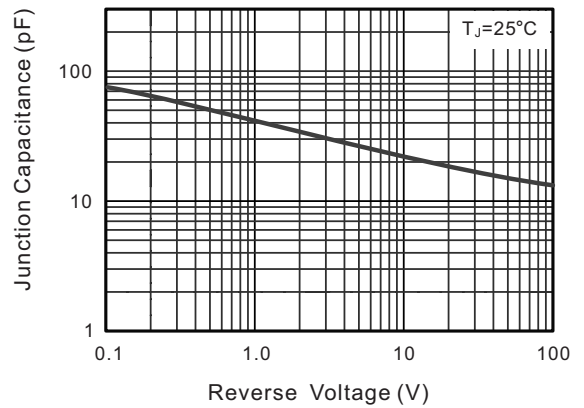
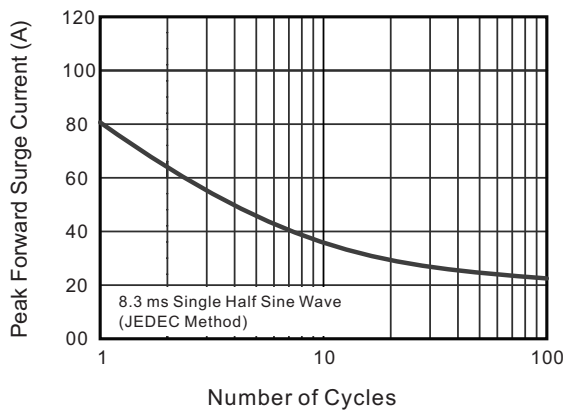


Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



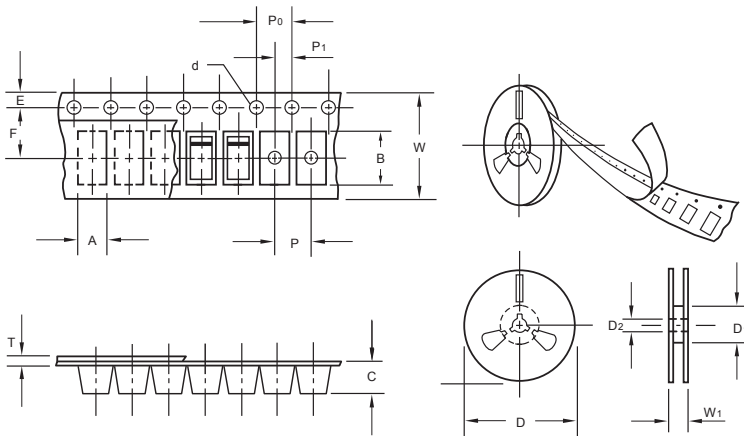
The curve above is for reference only.



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Packing information



unit:mm

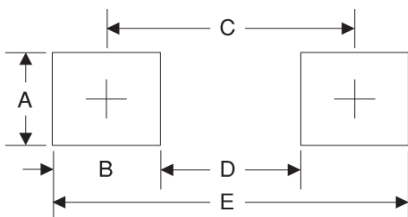
| Item | Symbol | Tolerance | SMBF |
|---------------------------|----------------|-----------|--------|
| Carrier width | A | 0.1 | 3.81 |
| Carrier length | B | 0.1 | 5.61 |
| Carrier depth | C | 0.1 | 1.60 |
| Sprocket hole | d | 0.05 | 1.50 |
| 13" Reel outside diameter | D | 2.0 | 330.00 |
| 13" Reel inner diameter | D ₁ | min | 50.00 |
| Feed hole diameter | D ₂ | 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 | P ₀ | 0.1 | 4.00 |
| Embossment center | P ₁ | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.30 |
| Tape width | W | 0.3 | 12.00 |
| Reel width | W ₁ | 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 |