



**DC COMPONENTS CO., LTD.**  
RECTIFIER SPECIALISTS

**S3ABF  
THRU  
S3MBF**

**TECHNICAL SPECIFICATIONS OF GENERAL PURPOSE SILICON RECTIFIER**

**VOLTAGE RANGE - 50 to 1000 Volts**

**CURRENT - 3.0 Amperes**

**FEATURES**

- \* Ideal for surface mounted applications
- \* Glass passivated junction
- \* Low leakage current

**MECHANICAL DATA**

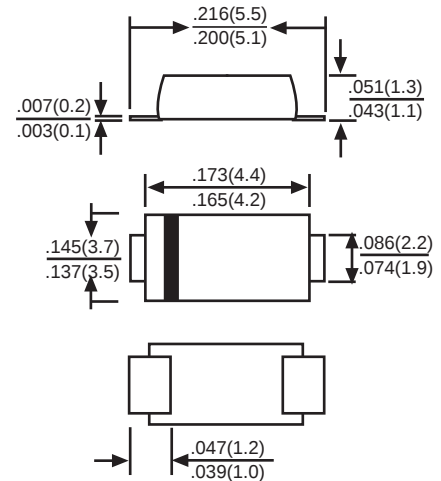
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rated flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any
- \* Weight: 0.06 gram approx.

**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 current by 20%.



**SMBFL**



Dimensions in inches and (millimeters)

|                                                                                                   |                                      | SYMBOL                           | S3ABF       | S3BBF | S3DBF | S3GBF | S3JBF | S3KBF | S3MBF | UNITS |
|---------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                            |                                      | V <sub>RRM</sub>                 | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | Volts |
| Maximum RMS Voltage                                                                               |                                      | V <sub>RMS</sub>                 | 35          | 70    | 140   | 280   | 420   | 560   | 700   | Volts |
| Maximum DC Blocking Voltage                                                                       |                                      | V <sub>DC</sub>                  | 50          | 100   | 200   | 400   | 600   | 800   | 1000  | Volts |
| Maximum Average Forward Rectified Current at T <sub>A</sub> = 65 <sup>o</sup> C                   |                                      | I <sub>O</sub>                   | 3.0         |       |       |       |       |       |       | Amps  |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) |                                      | I <sub>FSM</sub>                 | 100         |       |       |       |       |       |       | Amps  |
| Maximum Instantaneous Forward Voltage at 3.0A DC                                                  |                                      | V <sub>F</sub>                   | 1.1         |       |       |       |       |       |       | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                           | @ T <sub>A</sub> =25 <sup>o</sup> C  | I <sub>R</sub>                   | 5.0         |       |       |       |       |       |       | μAmps |
|                                                                                                   | @ T <sub>A</sub> =100 <sup>o</sup> C |                                  | 200         |       |       |       |       |       |       |       |
| Typical Junction Capacitance (Note 1)                                                             |                                      | C <sub>J</sub>                   | 45          |       |       |       |       |       |       | pF    |
| Typical Thermal Resistance (Note 2)                                                               |                                      | R <sub>θJA</sub>                 | 40          |       |       |       |       |       |       | °C/W  |
| Operating and Storage Temperature Range                                                           |                                      | T <sub>J</sub> ,T <sub>STG</sub> | -55 to +150 |       |       |       |       |       |       | °C    |

Note 1: Measured at 1 MHz and applied reverse voltage of 4.0 volts.

Note 2: Typical thermal resistance from junction to ambient.

# RATING AND CHARACTERISTIC CURVES (S3ABF THRU S3MBF)

FIG. 1  
TYPICAL FORWARD CURRENT  
DERATING CURVE

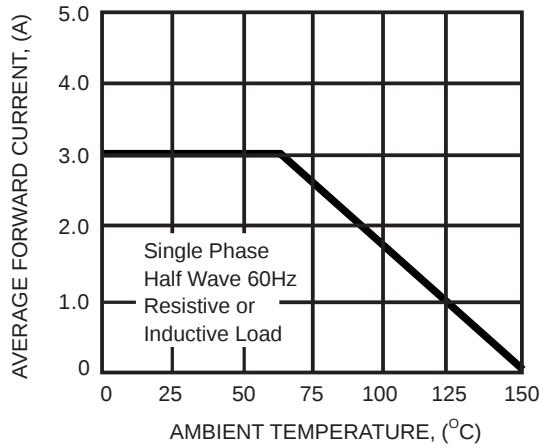


FIG. 2  
MAXIMUM NON-REPETITIVE FORWARD  
SURGE CURRENT

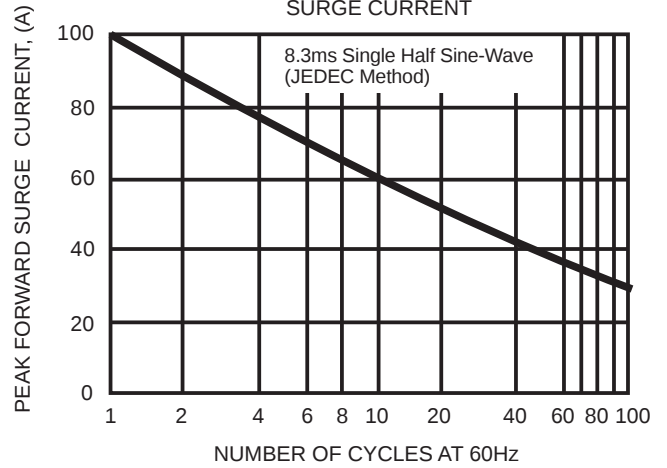


FIG. 3  
TYPICAL INSTANTANEOUS  
FORWARD CHARACTERISTICS

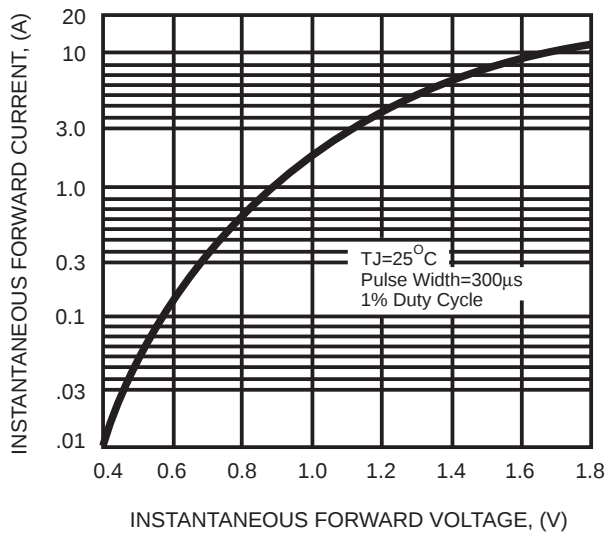


FIG. 4  
TYPICAL REVERSE CHARACTERISTICS

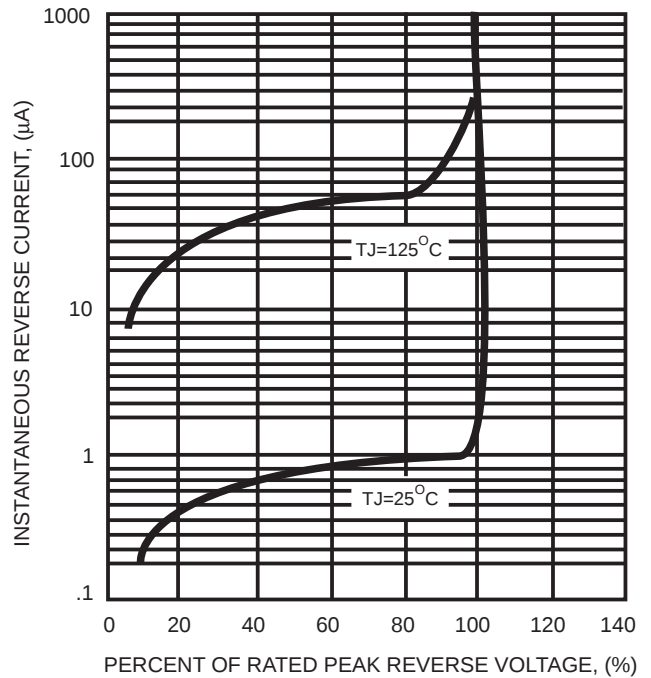
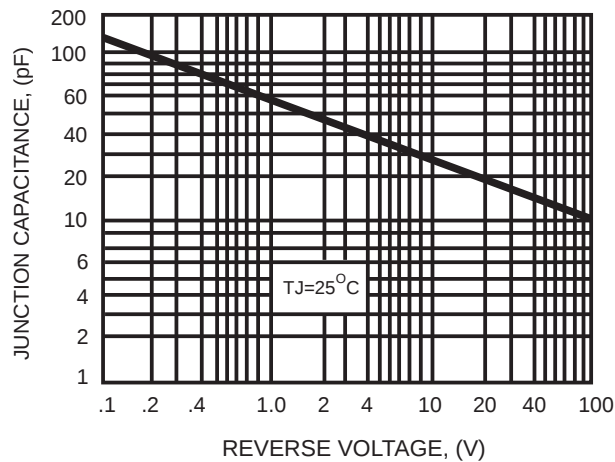


FIG. 5  
TYPICAL JUNCTION CAPACITANCE



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