



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

**M13  
THRU  
M20**

**TECHNICAL SPECIFICATIONS OF GENERAL PURPOSE SILICON RECTIFIER**

**VOLTAGE RANGE - 1300 to 2000 Volts**

**CURRENT - 1.0 Ampere**

**FEATURES**

- \* Ideal for surface mounted applications
- \* Low leakage current

**MECHANICAL DATA**

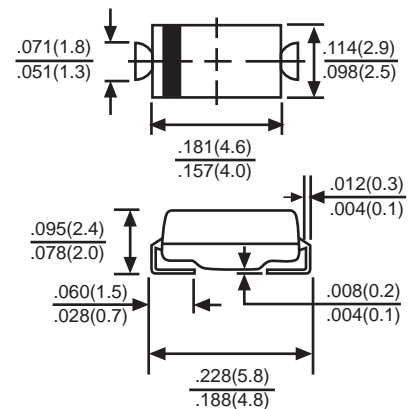
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rated flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any
- \* Weight: 0.064 gram approx.

**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%.



**SMA-L**



Dimensions in inches and (millimeters)

|                                                                                                   |                         | SYMBOL           | M13         | M16  | M20  | UNITS |
|---------------------------------------------------------------------------------------------------|-------------------------|------------------|-------------|------|------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                            |                         | V <sub>RRM</sub> | 1300        | 1600 | 2000 | Volts |
| Maximum RMS Voltage                                                                               |                         | V <sub>RMS</sub> | 910         | 1120 | 1400 | Volts |
| Maximum DC Blocking Voltage                                                                       |                         | V <sub>DC</sub>  | 1300        | 1600 | 2000 | Volts |
| Maximum Average Forward Rectified Current at T <sub>A</sub> = 55°C                                |                         | I <sub>O</sub>   | 1.0         |      |      | Amps  |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) |                         | I <sub>FSM</sub> | 30          |      | 20   | Amps  |
| Maximum Instantaneous Forward Voltage at 1.0A DC                                                  |                         | V <sub>F</sub>   | 1.1         |      | 2.0  | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                           | @ T <sub>A</sub> =25°C  | I <sub>R</sub>   | 5.0         |      |      | μAmps |
|                                                                                                   | @ T <sub>A</sub> =100°C |                  | 200         |      |      |       |
| Typical Junction Capacitance (Note 1)                                                             |                         | C <sub>J</sub>   | 15          |      |      | pF    |
| Typical Thermal Resistance (Note 2)                                                               |                         | R <sub>θJA</sub> | 30          |      |      | °C/W  |
| Operating Temperature Range                                                                       |                         | T <sub>J</sub>   | -55 to +125 |      |      | °C    |
| Storage Temperature Range                                                                         |                         | 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 (M13 THRU M20)

FIG. 1  
TYPICAL FORWARD CURRENT  
DERATING CURVE

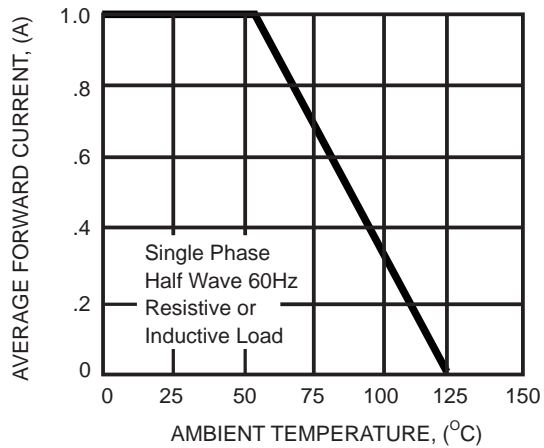


FIG. 2  
MAXIMUM NON-REPETITIVE FORWARD  
SURGE CURRENT

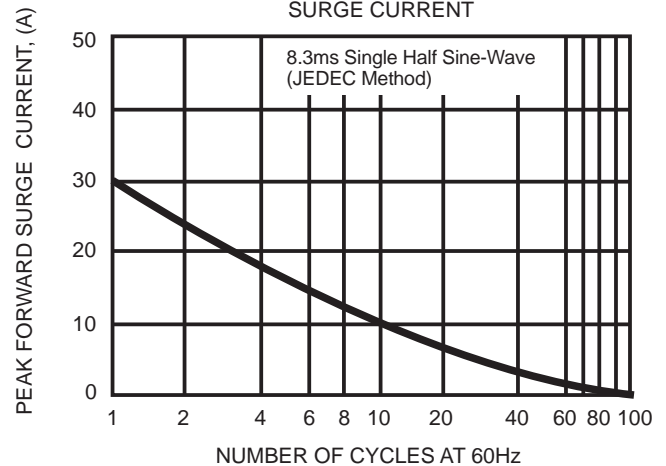


FIG. 3  
TYPICAL INSTANTANEOUS  
FORWARD CHARACTERISTICS

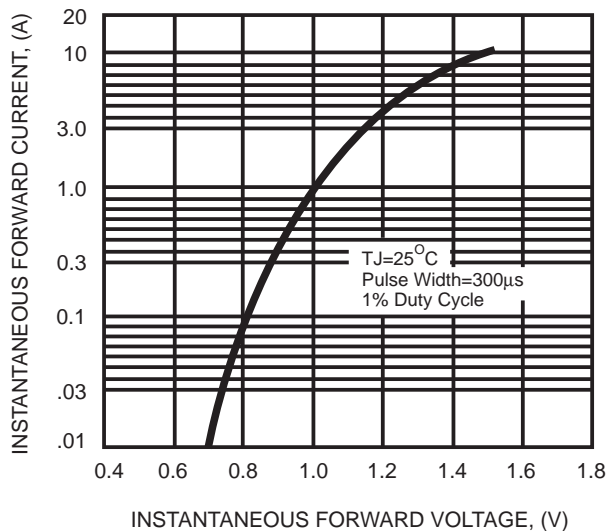


FIG. 4  
TYPICAL REVERSE CHARACTERISTICS

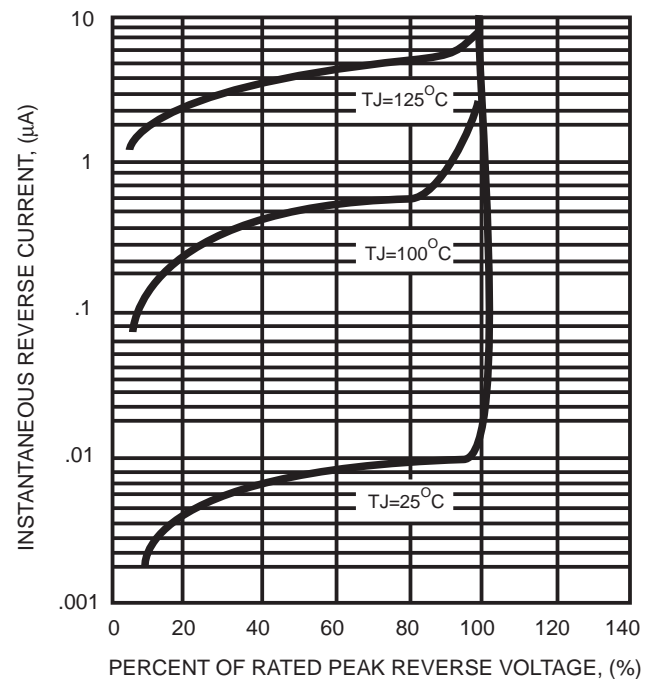
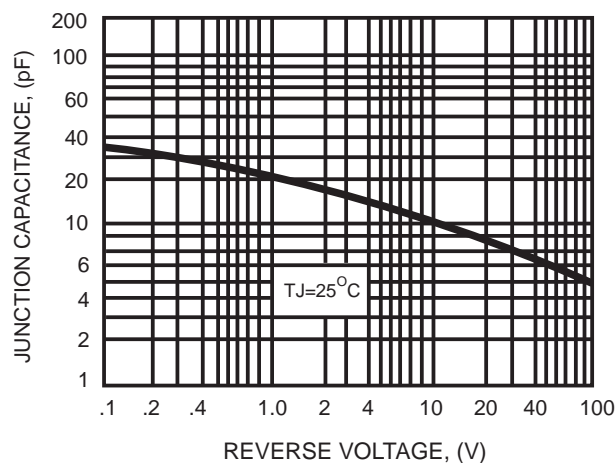


FIG. 5  
TYPICAL JUNCTION CAPACITANCE



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