

**SURFACE MOUNT**  
**GLASS PASSIVATED SILICON RECTIFIER**  
**VOLTAGE RANGE 50 to 1000 Volts CURRENT 5.0 Amperes**

**FEATURES**

- \* Glass passivated device
- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Metallurgically bonded construction
- \* P/N suffix V means AEC-Q101 qualified, e.g:FM501V
- \* P/N suffix V means Halogen-free

**MECHANICAL DATA**

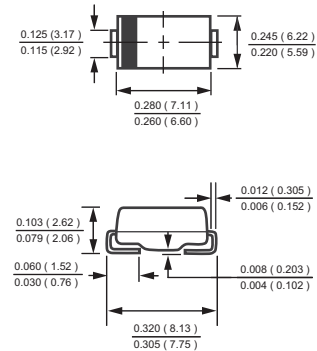
- \* Epoxy : Device has UL flammability classification 94V-0
- \* Mounting position: Any
- \* Weight: 0.24 gram

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.  
resistive or inductive load.



**SMC**



Dimensions in inches and (millimeters)

**MAXIMUM RATINGS (@ TA=25 °C unless otherwise noted)**

| RATINGS                                                                                              | SYMBOL          | FM501        | FM502 | FM503 | FM504 | FM505 | FM506 | FM507 | UNITS            |
|------------------------------------------------------------------------------------------------------|-----------------|--------------|-------|-------|-------|-------|-------|-------|------------------|
| Maximum Recurrent Peak Reverse Voltage                                                               | $V_{RRM}$       | 50           | 100   | 200   | 400   | 600   | 800   | 1000  | Volts            |
| Maximum RMS Voltage                                                                                  | $V_{RMS}$       | 35           | 70    | 140   | 280   | 420   | 560   | 700   | Volts            |
| Maximum DC Blocking Voltage                                                                          | $V_{DC}$        | 50           | 100   | 200   | 400   | 600   | 800   | 1000  | Volts            |
| Maximum Average Forward Rectified Current<br>TA = 75 °C                                              | $I_O$           | 5.0          |       |       |       |       |       |       | Amps             |
| Peak Forward Surge Current 8.3 ms single half sine-wave<br>superimposed on rated load (JEDEC method) | $I_{FSM}$       | 150          |       |       |       |       |       |       | Amps             |
| Typical Current Squared Time                                                                         | $I^2T$          | 93.3         |       |       |       |       |       |       | A <sup>2</sup> S |
| Typical Thermal Resistance (Note 1)                                                                  | $R_{\theta JA}$ | 35           |       |       |       |       |       |       | °C/W             |
| Typical Thermal Resistance (Note 1)                                                                  | $R_{\theta JL}$ | 10           |       |       |       |       |       |       | °C/W             |
| Typical Junction Capacitance (Note 2)                                                                | $C_J$           | 60           |       |       |       |       |       |       | pF               |
| Operating Temperature Range                                                                          | $T_J$           | 150          |       |       |       |       |       |       | °C               |
| Storage Temperature Range                                                                            | $T_{STG}$       | -55 to + 150 |       |       |       |       |       |       | °C               |

**ELECTRICAL CHARACTERISTICS(@TA=25 °C unless otherwise noted)**

| CHARACTERISTICS                                  | SYMBOL | FM501 | FM502 | FM503 | FM504 | FM505 | FM506 | FM507 | UNITS |
|--------------------------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Instantaneous Forward Voltage at 5.0A DC | $V_F$  | 1.1   |       |       |       |       |       |       | Volts |
| Maximum Average Reverse Current<br>@ TA = 25°C   | $I_R$  | 5.0   |       |       |       |       |       |       | μA    |
| at Rated DC Blocking Voltage<br>@ TA = 150°C     |        | 500   |       |       |       |       |       |       | μA    |

- NOTES : 1. Thermal Resistance :Mounted on PCB.  
 2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.  
 3. "ROHS compliant".  
 4. Available in Halogen-free epoxy by adding suffix -HF after the part nbr.

2020-04  
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## RATING AND CHARACTERISTICS CURVES ( FM501 THRU FM507 )

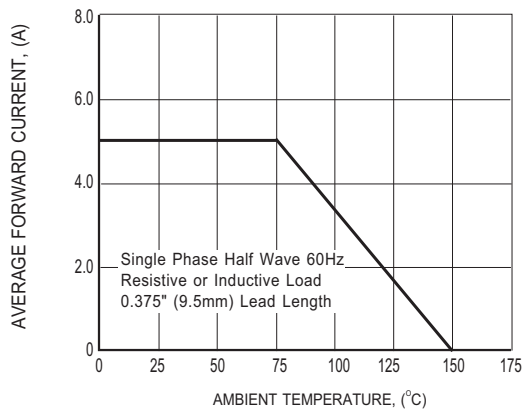


FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE

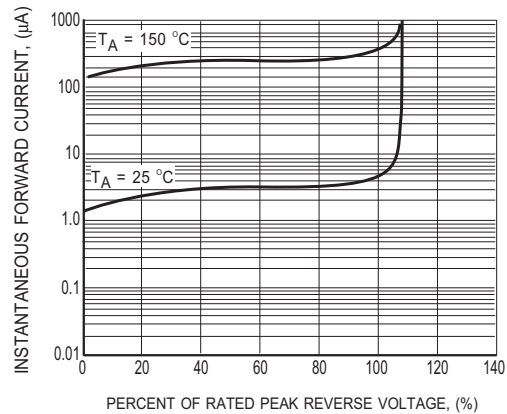


FIG.2 MAXIMUM REVERSE CHARACTERISTICS

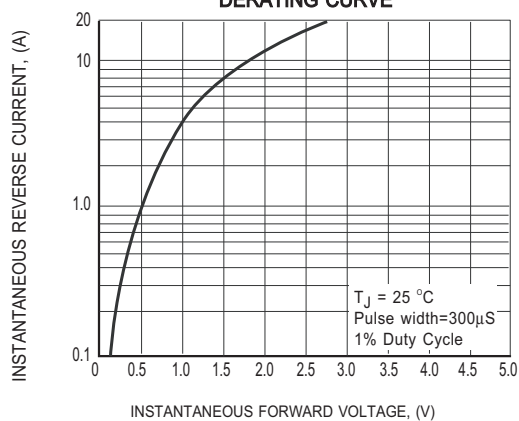


FIG.3 MAXIMUM INSTANTANEOUS FORWARD CHARACTERISTICS

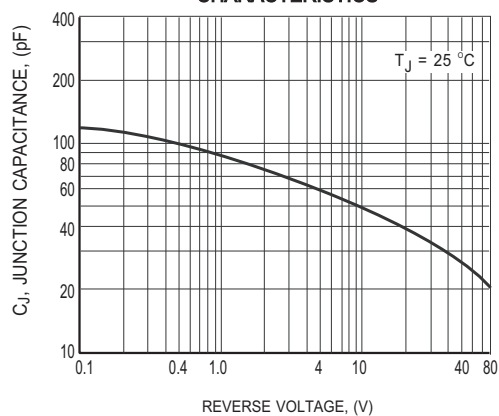


FIG.4 TYPICAL JUNCTION CAPACITANCE

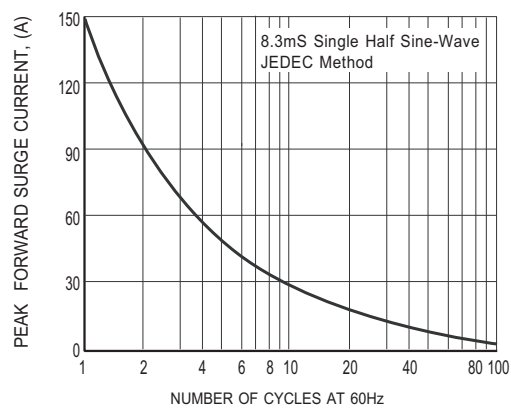
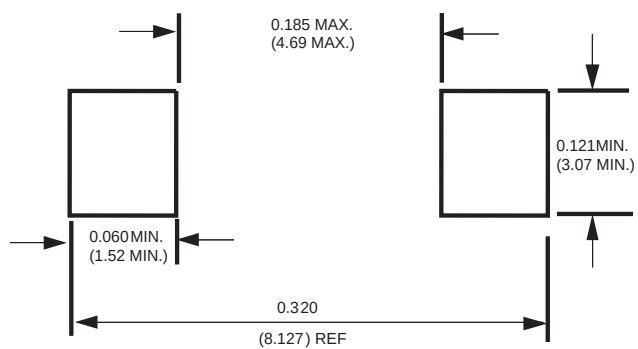


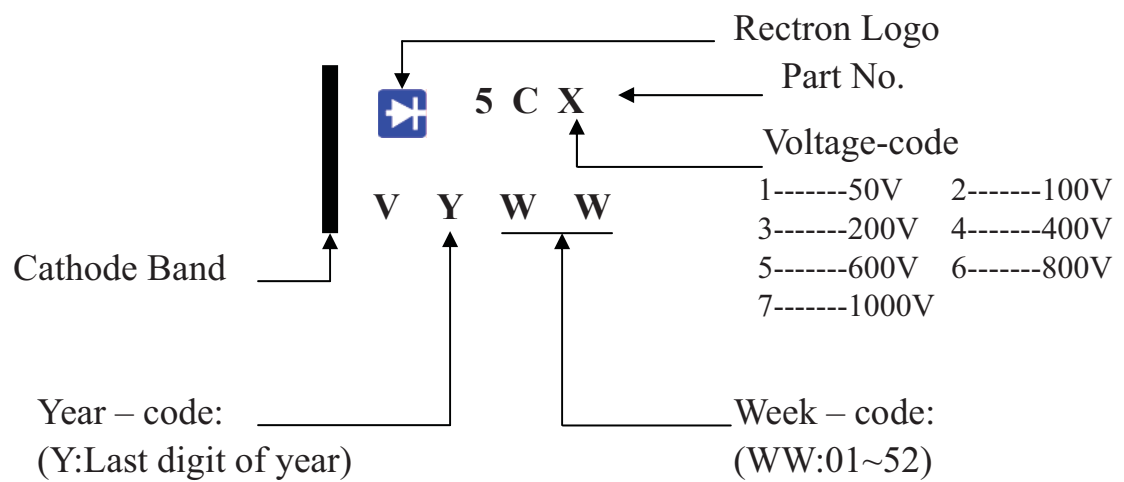
FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

## Mounting Pad Layout



Dimensions in inches and (millimeters)

## Marking Description



## PACKAGING OF DIODE AND BRIDGE RECTIFIERS

### REEL PACK

| PACKAGE | PACKING<br>CODE | EA PER<br>REEL | EA PER<br>INNER<br>BOX | COMPONENT<br>SPACE<br>(mm) | TAPE SPACE<br>(mm) | REEL DIA<br>(mm) | CARTON SIZE<br>(mm) | EA PER<br>CARTON | GROSS<br>WEIGHT(Kg) |
|---------|-----------------|----------------|------------------------|----------------------------|--------------------|------------------|---------------------|------------------|---------------------|
| SMC     | -W/-T           | 3,000          | 3,000                  | ---                        | ---                | 330              | 360*355*360         | 24,000           | 11.50               |

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