# RECTRON
## SEMICONDUCTOR
**TECHNICAL SPECIFICATION**

**FM4001W THRU FM4007W**

## SURFACE MOUNT  SILICON RECTIFIER
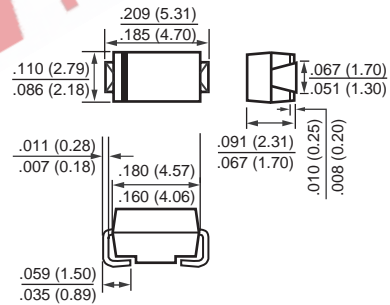
VOLTAGE RANGE  50 to 1000 Volts   CURRENT 1.0 Ampere

### FEATURES
* Ideal for surface mounted applications
* Low leakage current
* Metallurgically bonded construction
* Mounting position: Any
* Weight: 0.057 gram

### MECHANICAL DATA
 * Epoxy : Device has UL flammability classification 94V-0

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.



SMX

.209 (5.31)
.185 (4.70)

.110 (2.79)
.086 (2.18)

.067 (1.70)
.051 (1.30)

.011 (0.28)
.007 (0.18)

.091 (2.31)
.067 (1.70)

.010 (0.25)
.008 (0.20)

.180 (4.57)
.160 (4.06)

.059 (1.50)
.035 (0.89)

Dimensions in inches and (millimeters)

**MAXIMUM RATINGS** (At $T_A = 25^{\circ}C$ unless otherwise noted)

| RATINGS | SYMBOL | FM4001W | FM4002W | FM4003W | FM4004W | FM4005W | FM4006W | FM4007W | 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 at $T_A = 75^{\circ}C$ | $I_O$ | | | | 1.0 | | | | Amps |
| Peak Forward Surge Current $I_{FM}$(surge): 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | | | | 30 | | | | Amps |
| Maximum Thermal Resistance | (Note 2) $R_{\theta JL}$ | | | | 60 | | | | $^{0}C/W$ |
| | (Note 3) $R_{\theta JA}$ | | | | 100 | | | | $^{0}C/W$ |
| Typical Junction Capacitance (Note 1) | $C_J$ | | | | 15 | | | | pF |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | | | | -65 to + 175 | | | | $^{0}C$ |

**ELECTRICAL CHARACTERISTICS** (At $T_A = 25^{\circ}C$ unless otherwise noted)

| CHARACTERISTICS | | SYMBOL | FM4001W | FM4002W | FM4003W | FM4004W | FM4005W | FM4006W | FM4007W | UNITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Forward Voltage at 1.0A DC | | $V_F$ | | | | 1.1 | | | | Volts |
| Maximum Full Load Reverse Current, Full cycle Average at $T_A=75^{\circ}C$ | | $I_R$ | | | | 30 | | | | uAmps |
| Maximum DC Average Reverse Current at Rated DC Blocking Voltage | @$T_A = 25^{\circ}C$ | | | | | 5.0 | | | | uAmps |
| | @$T_A = 125^{\circ}C$ | | | | | 50 | | | | uAmps |

NOTES : 1. Measured at 1.0 MHz and applied average voltage of 4.0VDC
    2. Thermal resistance junction to terminal 6.0mm² coppeer pads to each terminal.
    3. Thermal resistance junction to ambient, 6.0mm² coppeer pads to each terminal.

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# RATING AND CHARACTERISTIC CURVES ( FM4001W THRU FM4007W )

### 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



**RECTRON**