# RECTRON
## SEMICONDUCTOR
### TECHNICAL SPECIFICATION

**W005M THRU W10M**

## SINGLE-PHASE GLASS PASSIVATED SILICON BRIDGE RECTIFIER

### VOLTAGE RANGE  50 to 1000 Volts   CURRENT 1.5 Amperes

### FEATURES
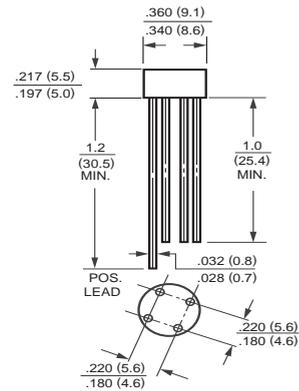* High reverse voltage to 1000V
* Surge overload ratings to 50 amperes peak
* Good for printed circuit board assembly
* Mounting position: Any
* Weight: 1.20 grams

### MECHANICAL DATA
* UL listed the recognized component directory, file #E94233
* Epoxy: Device has UL flammability classification 94V-O



**WOM**

.360 (9.1)
.340 (8.6)

.217 (5.5)
.197 (5.0)

1.2 (30.5) MIN.

1.0 (25.4) MIN.

.032 (0.8)
.028 (0.7)

POS. LEAD

.220 (5.6)
.180 (4.6)

.220 (5.6)
.180 (4.6)

Dimensions in inches and (millimeters)

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

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

| RATINGS | SYMBOL | W005M | W01M | W02M | W04M | W06M | W08M | W10M | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | Volts |
| Maximum RMS Bridge Input 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 Output Current at $T_A$ = 25$^{\circ}$C | $I_O$ | | | | 1.5 | | | | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | | | | 50 | | | | Amps |
| Typical Thermal Resistance | $R_{\theta JA}$ | | | | 40 | | | | $^{\circ}$C/W |
| | $R_{\theta JC}$ | | | | 22 | | | | |
| Operating Temperature Range | $T_J$ | | | | -55 to + 150 | | | | $^{\circ}$C |
| Storage Temperature Range | $T_{STG}$ | | | | -55 to + 150 | | | | $^{\circ}$C |

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

| CHARACTERISTICS | | SYMBOL | W005M | W01M | W02M | W04M | W06M | W08M | W10M | UNITS |
|---|---|---|---|---|---|---|---|---|---|---|
| Maximum Forward Voltage Drop per element at 1.0A DC | | $V_F$ | | | | 1.0 | | | | Volts |
| Maximum Reverse Current at Rated | @$T_A$ = 25$^{\circ}$C | $I_R$ | | | | 5.0 | | | | uAmps |
| DC Blocking Voltage per element | @$T_A$ = 100$^{\circ}$C | | | | | 1 | | | | mAmps |

Note: "Fully ROHS compliant", "100% Sn plating (Pb-free)".

2005-3

REV: A

# RATING AND CHARACTERISTIC CURVES ( W005M THRU W10M )
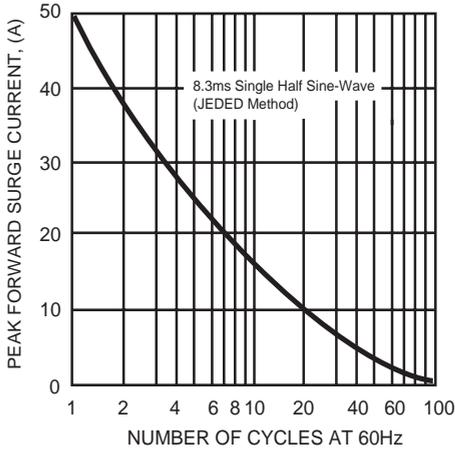
### FIG. 1 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



8.3ms Single Half Sine-Wave (JEDED Method)

PEAK FORWARD SURGE CURRENT, (A) vs NUMBER OF CYCLES AT 60Hz

### FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE



60 Hz RESISTIVE OR INDUCTIVE LOAD

AVERAGE FORWARD CURRENT, (A) vs AMBIENT TEMPERATURE, ( ℃ )
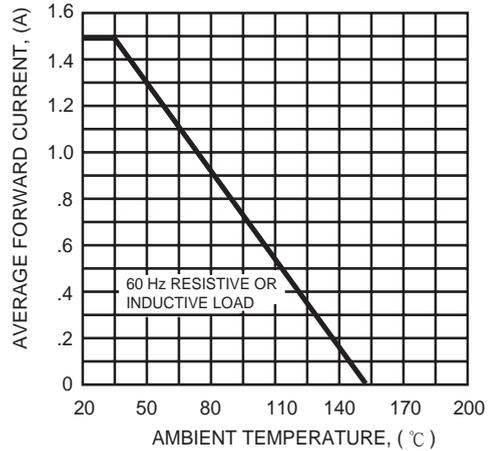
### FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



$T_J = 25℃$
Pulse Width = 300us
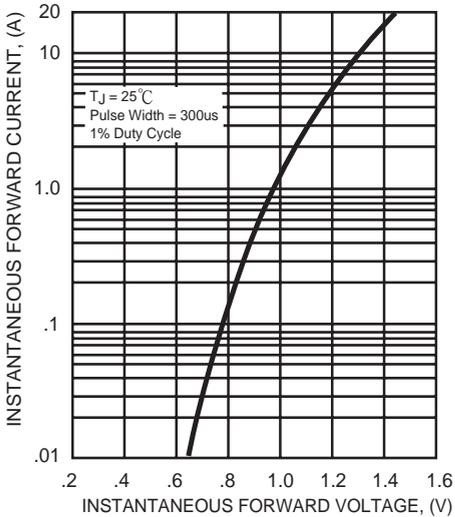1% Duty Cycle

INSTANTANEOUS FORWARD CURRENT, (A) vs INSTANTANEOUS FORWARD VOLTAGE, (V)

### FIG. 4 - TYPICAL REVERSE CHARACTERISTICS



$T_J = 25℃$

INSTANTANEOUS REVERSE CURRENT, (uA) vs PERCENT OF RATED PEAK REVERSE VOLTAGE, (%)

**RECTRON**