RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

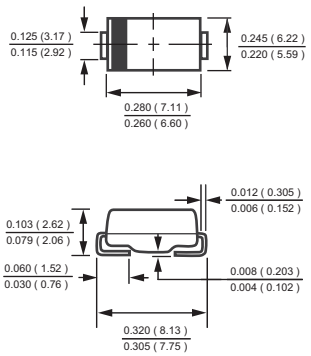
# FM305-W

## SURFACE MOUNT
## GLASS PASSIVATED SILICON RECTIFIER
### VOLTAGE 600 Volts CURRENT 3.0 Amperes

### FEATURES
* Glass passivated device
* Ideal for surface mounted applications
* Low leakage current
* Metallurgically bonded construction
* Mounting position: Any
* Weight: 0.24 gram

### MECHANICAL DATA
* Epoxy : Device has UL flammability classification 94V-0
* MSL: 1 Level

SMC




Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
Ratings at 25 °C ambient temperature unless otherwise specified.
resistive or inductive load.

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

| RATINGS | SYMBOL | FM305-W | UNITS |
|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | $V_{RRM}$ | 600 | Volts |
| Maximum RMS Voltage | $V_{RMS}$ | 420 | Volts |
| Maximum DC Blocking Voltage | $V_{DC}$ | 600 | Volts |
| Maximum Average Forward Rectified Current at Ambient Temperature | $I_O$ | 3.0 | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | 150 | Amps |
| Typical Current Squared Time | $I^2T$ | 93.3 | $A^2S$ |
| Typical Thermal Resistance (Note 1) | $R_{\theta JA}$ | 47 | °C/W |
| Typical Thermal Resistance (Note 1) | $R_{\theta JL}$ | 13 | °C/W |
| Typical Junction Capacitance (Note 2) | $C_J$ | 30 | 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 | FM305-W | UNITS |
|---|---|---|---|---|
| Maximum Instantaneous Forward Voltage at 3.0A DC | | $V_F$ | 1.0 | Volts |
| Maximum Average Reverse Current | @$T_A$ = 25°C | $I_R$ | 1.0 | µA |
| at Rated DC Blocking Voltage | @$T_A$ = 100°C | | 50 | µA |

NOTES : 1. Thermal Resistance :Mounted on PCB.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. "Fully ROHS compliant","100% Sn plating (Pb-free)".
4. Available in Halogen-free epoxy by adding suffix -HF after the part nbr.

2014-11
REV: A

# RATING AND CHARACTERISTICS CURVES ( FM305-W )

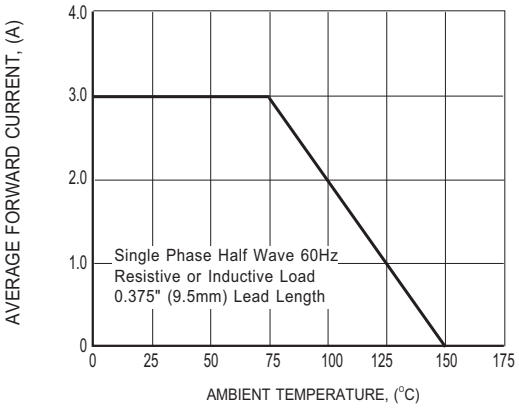



FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE

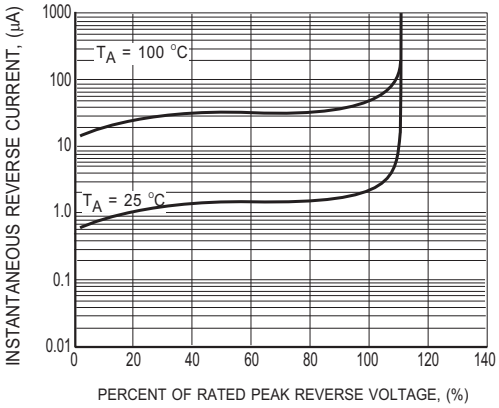



FIG.2 TYPICAL REVERSE CHARACTERISTICS

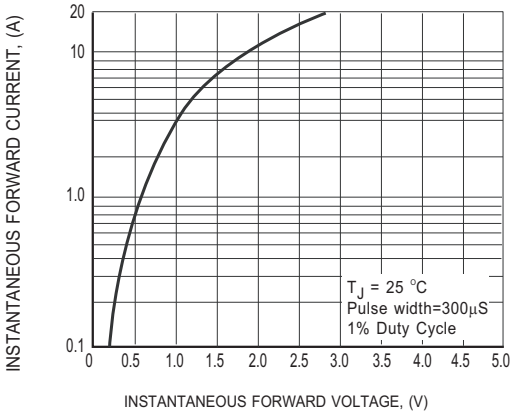



FIG.3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

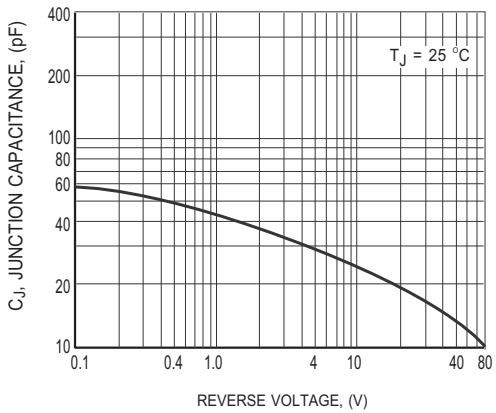



FIG.4 TYPICAL JUNCTION CAPACITANCE

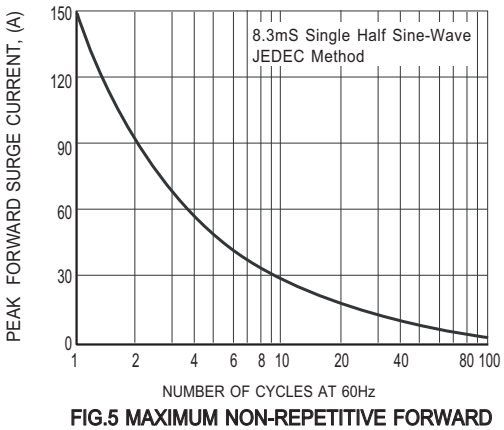
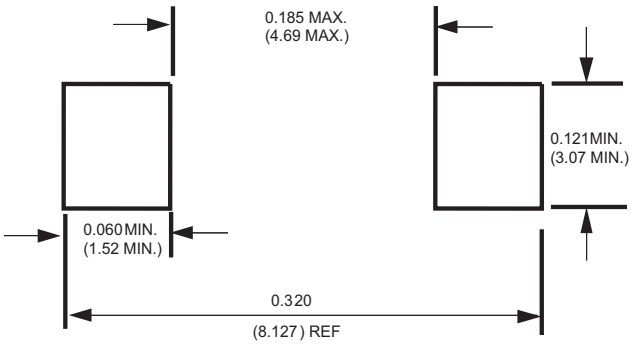



FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

## Mounting Pad Layout



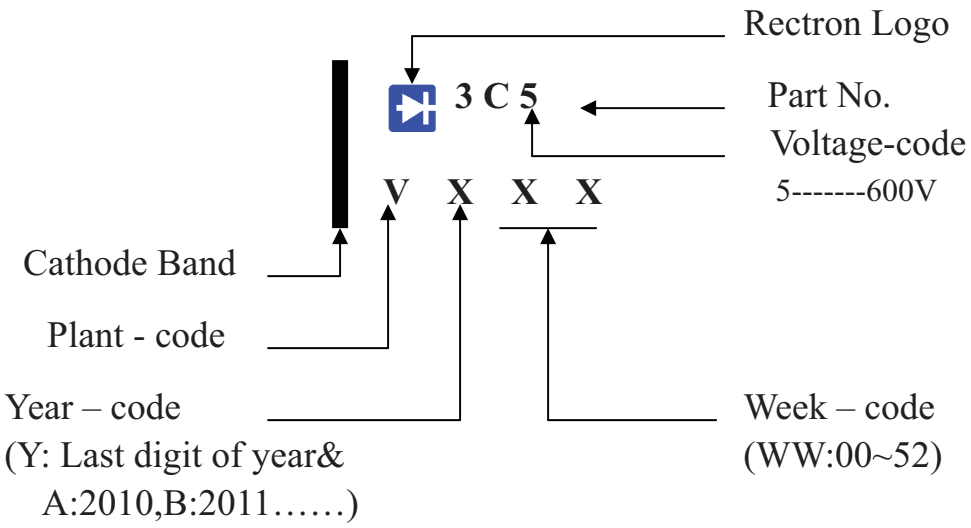

Dimensions in inches and (millimeters)

# RECTRON

## Attachment information about FM305-W

### 1. Internal Circuit


### 2. Marking on the body



# REEL TAPING SPECIFICATIONS FOR SURFACE MOUNT DEVICES-FLAT MELF ( SMA/SMB/SMC )

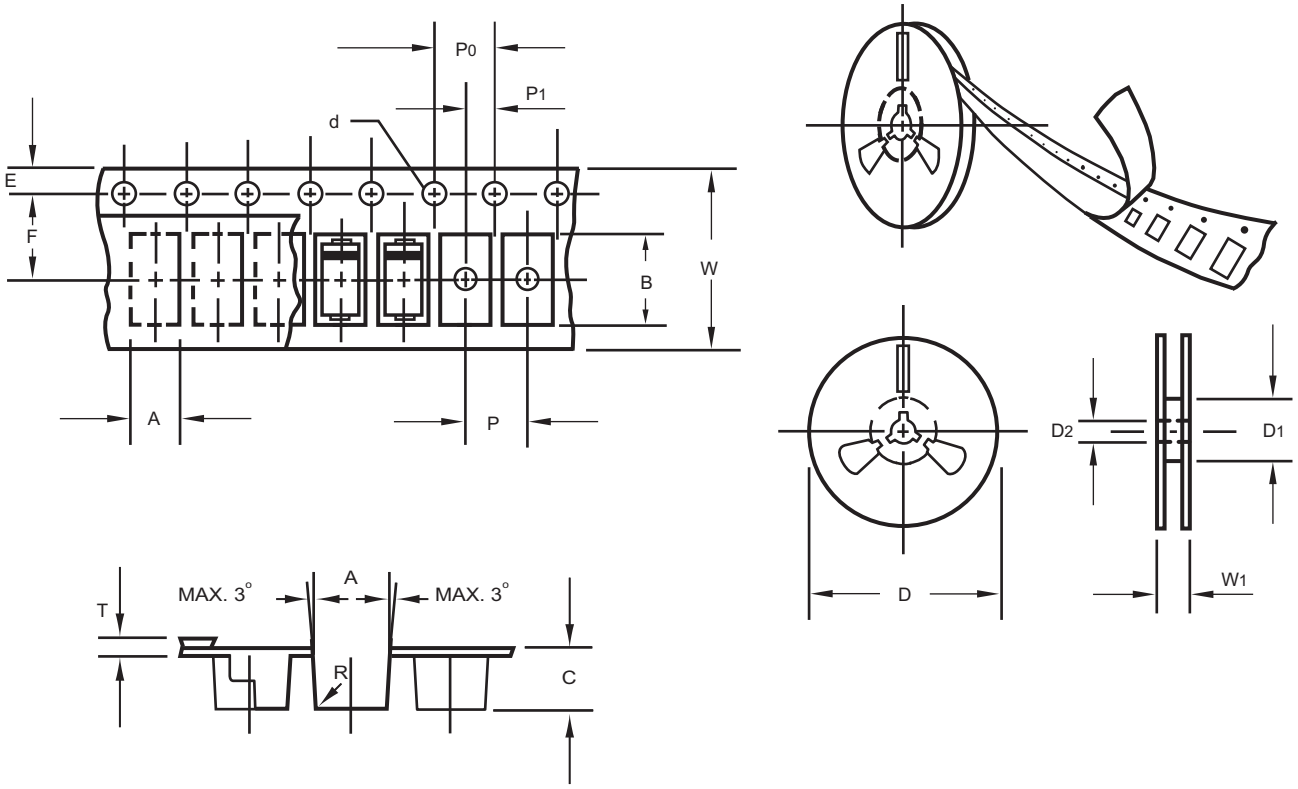



Fig.: Configuration of FLAT MELF TAPING (SMA/SMB/SMC)

| ITEM | SYMBOL | DO214AC (SMA) mm(inch) | DO214AA (SMB) mm(inch) | DO214AB (SMC) mm(inch) |
|---|---|---|---|---|
| Carrier width | A | 2.6 ± 0.15 (.102 ± .006) | 3.65 ± 0.1 (.144 ± .004) | 6.0 ± 0.1 (.236 ± .004) |
| Carrier length | B | 5.15 ± 0.15 (.203 ± .006) | 5.69 ± 0.1 (.224 ± .004) | 8.30 ± 0.1 (.327 ± .004) |
| Carrier depth | C | 2.3 ± 0.15 (.091 ± .006) | 2.67 ± 0.1 (.105 ± .004) | 2.5 ± 0.1 (.098 ± .004) |
| Sprocket hole | d | 1.5 ± 0.1 (.059 ± .004) | 1.5 ± 0.1 (.059 ± .004) | 1.5 ± 0.1 (.059 ± .004) |
| Reel outside diameter | D | 178 ± 2.0 (7.0 ± .079) | 178 ± 2.0 (7.0 ± .079) | 178 ± 2.0 (7.0 ± .079) |
| Reel inner diameter | $D_1$ | 50 Min. | 50 Min. | 50 Min. |
| Feed hole diameter | $D_2$ | 13 ± 0.5 (.512 ± .020) | 13 ± 0.5 (.512 ± .020) | 13 ± 0.5 (.512 ± .020) |
| Stroket hole position | E | 1.5 ± 0.1 (.059 ± .004) | 1.5 ± 0.1 (.059 ± .004) | 1.5 ± 0.1 (.059 ± .004) |
| Punch hole position | F | 5.65 ± 0.05 (.222 ± .002) | 5.65 ± 0.05 (.222 ± .002) | 7.65 ± 0.05 (.301 ± .002) |
| Punch hole pitch | P | 4.0 ± 0.1 (.157 ± .004) | 8.0 ± 0.1 (.315 ± .004) | 8.0 ± 0.1 (.315 ± .004) |
| Sprocket hole pitch | $P_0$ | 4.0 ± 0.1 (.157 ± .004) | 4.0 ± 0.1 (.157 ± .004) | 4.0 ± 0.1 (.157 ± .004) |
| Embossment center | $P_1$ | 2.0 ± 0.1 (.079 ± .004) | 2.0 ± 0.1 (.079 ± .004) | 4.0 ± 0.1 (.157 ± .004) |
| Totall tape thickness | T | 0.30 ± .05 (.012 ± .002) | 0.6 Max. | 0.6 Max. |
| Tape width | W | 12.0 ± 0.2 (.472 ± .008) | 12.0 ± 0.2 (.472 ± .008) | 16.0 ± 0.2 (.630 ± .008) |
| Reel width | $W_1$ | 16.8 ± 2.0 (.661 ± .079) | 16.8 ± 2.0 (.661 ± .079) | 24.0 ± 2.0 (.945 ± .079) |

Notes: 1.Devices are packed in accordance with EIA standard RS-481-A and specification given above.
2.Available on 7 inch ( 1500 ct. ) or 13 inch ( 5000 ct. ) diameter reels.

# PACKAGING OF DIODE AND BRIDGE RECTIFIERS

REEL PACK

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

# DISCLAIMER NOTICE

Rectron Inc reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Rectron Inc or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on RECTRON data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Rectron Inc does not assume any liability arising out of the application or use of any product or circuit.

Rectron products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Rectron Inc. Customers using or selling Rectron components for use in such applications do so at their own risk and shall agree to fully indemnify Rectron Inc and its subsidiaries harmless against all claims, damages and expenditures.