**R2M**

**V_{RM} : 130 Volts**

**I_{ZSM} : 1.0 Amp. (100 \mu s)**

**FEATURES :**

* 600 W surge capability at 1ms
* Excellent clamping capability
* Low zener impedance
* Fast response time: typically less than 1.0 ps from 0 volts to BV min.
* Low Leakage < 5.0 \mu A above 10 V.
* Pb / RoHS Free

**MECHANICAL DATA :**

* Case: D2 Molded plastic
* Epoxy: UL94V-O rate flame retardant
* Lead: Axial lead solderable per MIL-STD-202, Method 208 guaranteed
* Polarity: Color band denotes cathode end
* Mounting position: Any
* Weight: 0.465 gram

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Rating at 25 \degree C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th>RATING</th>
<th>SYMBOL</th>
<th>VALUE</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Power Dissipation at ( T_p = 1 \text{ ms} ) (Note 1)</td>
<td>P_{pk}</td>
<td>Minimum 600</td>
<td>W</td>
</tr>
<tr>
<td>Steady State Power Dissipation at ( T_c = 75 \degree C )</td>
<td>P_D</td>
<td>5.0</td>
<td>W</td>
</tr>
<tr>
<td>Lead Lengths 0.375&quot;, (9.5mm) (Note 2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Peak Reverse Voltage (Stand-off Voltage)</td>
<td>V_{RWM}</td>
<td>130</td>
<td>V</td>
</tr>
<tr>
<td>Minimum Avalanche Breakdown Voltage at ( I_T = 1mA ) (Note 3)</td>
<td>V_{BR(min)}</td>
<td>135</td>
<td>V</td>
</tr>
<tr>
<td>Maximum Avalanche Breakdown Voltage at ( I_T = 1mA ) (Note 3)</td>
<td>V_{BR(max)}</td>
<td>180</td>
<td>V</td>
</tr>
<tr>
<td>Peak Forward Surge Current, 8.3 ms Single Half Sine-Wave</td>
<td>I_{FSM}</td>
<td>75</td>
<td>A</td>
</tr>
<tr>
<td>Superimposed on Rated Load (JEDEC Method) (Note 4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Reverse Leakage at Working Peak Reverse Voltage</td>
<td>I_R</td>
<td>5.0</td>
<td>\mu A</td>
</tr>
<tr>
<td>Maximum Non-Repetitive Peak Reverse Surge Current</td>
<td>I_{RSM}</td>
<td>2.6</td>
<td>A</td>
</tr>
<tr>
<td>Maximum Reverse Voltage (Clamping Voltage) at ( I_{RSM} )</td>
<td>V_{RSM}</td>
<td>234</td>
<td>V</td>
</tr>
<tr>
<td>Maximum Voltage Temperature Variation of Breakdown Voltage</td>
<td></td>
<td>175</td>
<td>mV/\degree C</td>
</tr>
<tr>
<td>Junction Temperature Range</td>
<td>T_J</td>
<td>-65 to +175</td>
<td>\degree C</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>T_{STG}</td>
<td>-65 to +175</td>
<td>\degree C</td>
</tr>
</tbody>
</table>

**Notes :**

(1) Non-Repetitive Current Pulse and Surge Current Waveform, per Fig. 6 and Derated above \( T_a = 25 \degree C \) per Fig. 1.
(2) Mounted on Copper Leaf area pf 1.57 in\(^2\) (40 mm\(^2\)).
(3) V_{BR} measured after \( I_T \) applied for 300 \mu s, \( I_T = \text{Square Wave Pulse or equivalent.} \)
(4) 8.3 ms single half sine-wave, duty cycle = 4 pulses per Minutes maximum.
RATING AND CHARACTERISTIC CURVES (R2M)

**FIG. 1 - PULSE DERATING CURVE**

- **PEAK PULSE DERATING IN % OF PEAK POWER OR CURRENT**
- **AMBIENT TEMPERATURE, (°C)**

**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

- **PEAK FORWARD SURGE CURRENT, AMPERES**
- **NUMBER OF CYCLES AT 60Hz**

**FIG. 3 - PULSE RATING CURVE**

- **PEAK POWER, (kW)**
- **PULSE WIDTH, (tp)**

**FIG. 4 - TYPICAL JUNCTION CAPACITANCE**

- **CAPACITANCE, (pF)**
- **REVERSE VOLTAGE, VOLTS**

**FIG. 5 - STEADY STATE POWER DERATING**

- **STEADY STATE POWER DISSIPATION, (WATTS)**
- **LEAD TEMPERATURE, (°C)**

**FIG. 6 - MAXIMUM NON-REPETITIVE PEAK REVERSE SURGE CURRENT**

- **PEAK PULSE CURRENT - % IRSM**
- **TIME, (ms)**

- **Measured @ Stand-Off Voltage**
- **Measured @ Zero Basic**

**Peak Value**

**Half Value (Irms/2)**

- **Single Phase Half Wave**
- **60Hz Resistive or Inductive Load**

- **Pulse width (tp) is defined as that point where the peak current decays to 50% of Irms**

- **10 X 1000 Waveform as defined by R.E.A.**

**8.3 ms Single half Sine-Wave**

- **R2M**

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