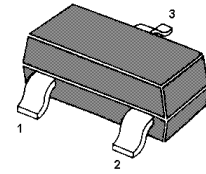


Silicon Controlled Rectifiers

Reverse Blocking Triode Thyristors

MMBCR100-8



1. Cathode 2. Gate 3. Anode

Absolute Maximum Ratings ($T_J = 25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|--------------|---------------|----------------------|
| Peak Repetitive Reverse Blocking Voltage ¹⁾ at $T_J = 25$ to 125°C , $R_{GK} = 1\text{ K}\Omega$ | V_{RRM} | 600 | V |
| Peak Repetitive Forward Blocking Voltage ¹⁾ at $T_J = 25$ to 125°C , $R_{GK} = 1\text{ K}\Omega$ | V_{DRM} | 600 | V |
| Forward Current RMS (All Conduction Angles) | $I_{T(RMS)}$ | 0.8 | A |
| Peak Forward Surge Current (1/2 Cycle, Sine Wave, 60 Hz) | I_{TSM} | 10 | A |
| Circuit Fusing Considerations ($t = 8.3\text{ ms}$) | I^2t | 0.415 | A^2s |
| Forward Peak Gate Power ($P_W \leq 1\ \mu\text{s}$) | P_{GM} | 0.1 | W |
| Forward Average Gate Power | $P_{GF(AV)}$ | 0.01 | W |
| Forward Peak Gate Current ($P_W \leq 1\ \mu\text{s}$) | I_{GFM} | 1 | A |
| Reverse Peak Gate Voltage ($P_W \leq 1\ \mu\text{s}$) | V_{GRM} | 5 | V |
| Operating Junction Temperature Range at Rated V_{RRM} and V_{DRM} | T_J | - 40 to + 125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | - 40 to + 150 | $^\circ\text{C}$ |

¹⁾ V_{DRM} and V_{RRM} for types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; however, positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the device are exceeded.

Characteristics at $T_a = 25^\circ\text{C}$, $R_{GK} = 1\text{ K}\Omega$ unless otherwise noted.

| Parameter | Symbol | Min. | Max. | Unit |
|---|-----------|------|------|---------------|
| Peak Reverse Blocking Current at $V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}$ | I_{RRM} | - | 10 | μA |
| Peak Forward Blocking Current at $V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}$ | I_{DRM} | - | 10 | μA |
| Peak Forward On-State Voltage at $I_{TM} = 1\text{ A Peak}$ | V_{TM} | - | 1.7 | V |
| Gate Trigger Current (Continuous dc) ¹⁾ at Anode Voltage = 7 Vdc, $R_L = 100\ \Omega$ | I_{GT} | - | 200 | μA |
| Gate Trigger Voltage (Continuous dc) at Anode Voltage = 7 Vdc, $R_L = 100\ \Omega$ at Anode Voltage = Rated V_{DRM} , $R_L = 100\ \Omega$ | V_{GT} | - | 0.8 | V |
| Holding Current at Anode Voltage = 7 Vdc, initiating current = 20 mA | I_H | - | 5 | mA |

¹⁾ R_{GK} current is not included in measurement.

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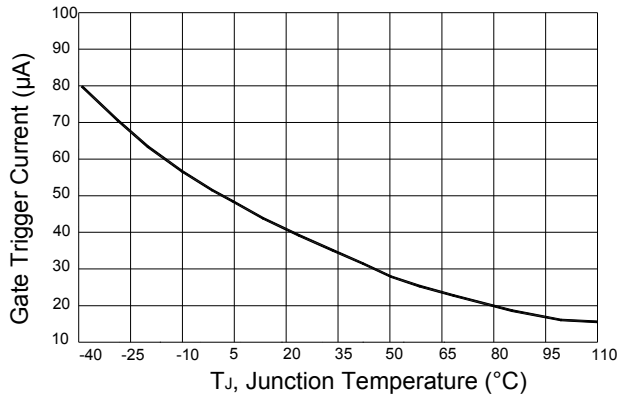


Figure 1. Typical Gate Trigger Current Versus Junction Temperature

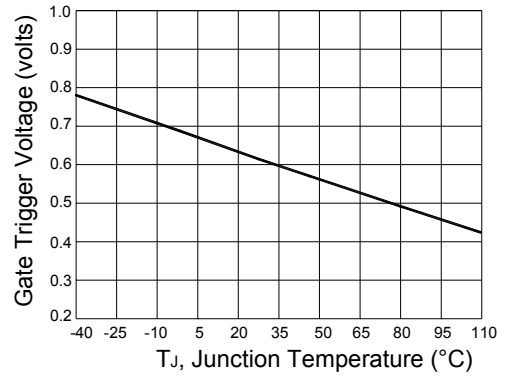


Figure 2. Typical Gate Trigger Voltage Versus Junction Temperature

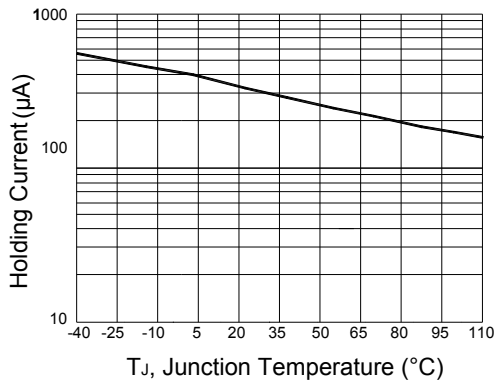


Figure 3. Typical Holding Current Versus Junction Temperature

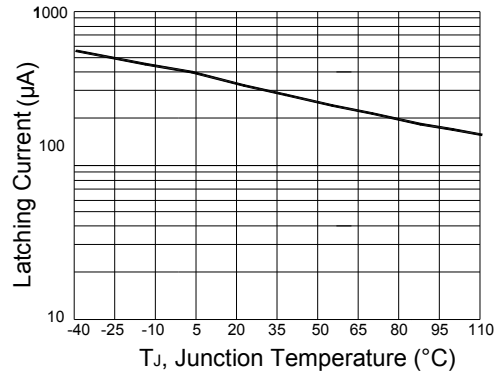


Figure 4. Typical Latching Current Versus Junction Temperature

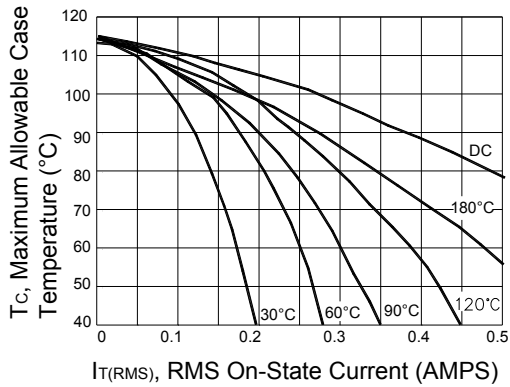


Figure 5. Typical RMS Current Derating

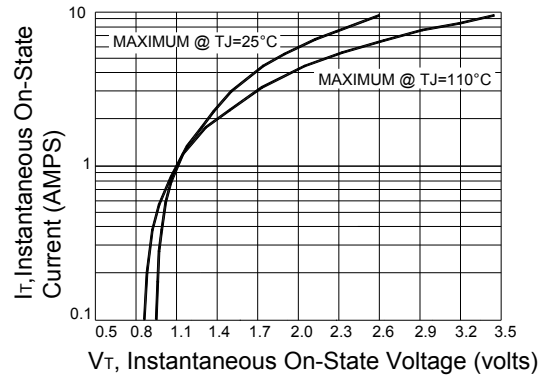


Figure 6. Typical On-State Characteristics