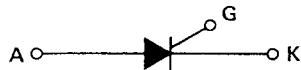


# MCR1906-1 thru MCR1906-8



## REVERSE BLOCKING TRIODE THYRISTORS

These devices are glassivated planar construction designed for applications in control systems and sensing circuits where low-level gating and holding characteristics are necessary.

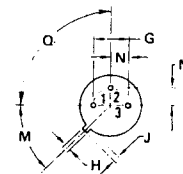
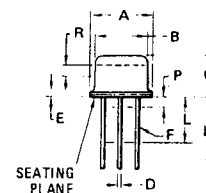
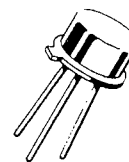
- Low-Level Gate Characteristics —  
 $I_{GT} = 1.0 \text{ mA (Max) @ } T_C = 25^\circ\text{C}$
- Low Holding Current —  $I_H = 5.0 \text{ mA (Max) @ } T_C = 25^\circ\text{C}$
- Glass-to-Metal Bond for Maximum Hermetic Seal

### MAXIMUM RATINGS ( $T_J = 100^\circ\text{C}$ unless otherwise noted.)

| Rating                                                                                                                                                 | Symbol            | Value                                              | Unit             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------|------------------|
| Repetitive Peak Reverse Blocking Voltage                                                                                                               | $V_{RRM}$         | 25<br>50<br>100<br>200<br>300<br>400<br>500<br>600 | Volts            |
| MCR1906-1                                                                                                                                              |                   |                                                    |                  |
| MCR1906-2                                                                                                                                              |                   |                                                    |                  |
| MCR1906-3                                                                                                                                              |                   |                                                    |                  |
| MCR1906-4                                                                                                                                              |                   |                                                    |                  |
| MCR1906-5                                                                                                                                              |                   |                                                    |                  |
| MCR1906-6                                                                                                                                              |                   |                                                    |                  |
| MCR1906-7                                                                                                                                              |                   |                                                    |                  |
| RMS On-State Current<br>(All Conduction Angles)                                                                                                        | $I_T(\text{RMS})$ | 1.6                                                | Amp              |
| Peak Non-Repetitive Surge Current<br>(One Cycle, 60 Hz, $T_J = -40$ to $+110^\circ\text{C}$ )<br>Preceded and followed by<br>rated current and voltage | $I_{TSM}$         | 15                                                 | Amp              |
| Peak Gate Power                                                                                                                                        | $P_{GM}$          | 0.1                                                | Watt             |
| Average Gate Power                                                                                                                                     | $P_{GF(AV)}$      | 0.01                                               | Watt             |
| Peak Gate Current                                                                                                                                      | $I_{GM}$          | 0.1                                                | Amp              |
| Peak Gate Voltage                                                                                                                                      | $V_{GM}$          | 6.0                                                | Volt             |
| Operating Junction Temperature Range                                                                                                                   | $T_J$             | -65 to +110                                        | $^\circ\text{C}$ |
| Storage Temperature Range                                                                                                                              | $T_{stg}$         | -65 to +150                                        | $^\circ\text{C}$ |
| Lead Solder Temperature<br>( $> 1/16''$ From Case, 10 s max.)                                                                                          | —                 | +230                                               | $^\circ\text{C}$ |

## SILICON CONTROLLED RECTIFIERS

1.6 AMPERES RMS  
25 thru 400 VOLTS



STYLE 3:  
PIN 1. CATHODE  
2. GATE  
3. ANODE (CONNECTED TO CASE)

| DIM | MILLIMETERS |       | INCHES |       |
|-----|-------------|-------|--------|-------|
|     | MIN         | MAX   | MIN    | MAX   |
| A   | 8.89        | 9.40  | 0.350  | 0.370 |
| B   | 8.00        | 8.51  | 0.315  | 0.335 |
| C   | 6.10        | 6.60  | 0.240  | 0.260 |
| D   | 0.406       | 0.533 | 0.016  | 0.021 |
| E   | 0.229       | 3.18  | 0.009  | 0.125 |
| F   | 0.406       | 0.483 | 0.016  | 0.019 |
| G   | 4.83        | 5.33  | 0.190  | 0.210 |
| H   | 0.711       | 0.864 | 0.028  | 0.034 |
| J   | 0.737       | 1.02  | 0.029  | 0.040 |
| K   | 12.70       | —     | 0.500  | —     |
| L   | 6.35        | —     | 0.250  | —     |
| M   | 45°         | NOM   | 45°    | NOM   |
| P   | —           | 1.27  | —      | 0.050 |
| Q   | 90°         | NOM   | 90°    | NOM   |
| R   | 2.54        | —     | 0.100  | —     |

All JEDEC dimensions and notes apply

# MCR1906-1 thru MCR1906-8

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^{\circ}\text{C}$ unless otherwise noted.)

| Characteristic                                                                                                                                                                                                                     | Symbol    | Min | Typ | Max  | Unit             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----|-----|------|------------------|
| Peak Forward Blocking Voltage<br>( $R_{GK} = 1000 \text{ Ohms}$ )                                                                                                                                                                  | $V_{DRM}$ | 25  | —   | —    | Volt             |
| MCR1906-1                                                                                                                                                                                                                          |           | 50  | —   | —    |                  |
| MCR1906-2                                                                                                                                                                                                                          |           | 100 | —   | —    |                  |
| MCR1906-3                                                                                                                                                                                                                          |           | 200 | —   | —    |                  |
| MCR1906-4                                                                                                                                                                                                                          |           | 300 | —   | —    |                  |
| MCR1906-5                                                                                                                                                                                                                          |           | 400 | —   | —    |                  |
| MCR1906-6                                                                                                                                                                                                                          |           | 500 | —   | —    |                  |
| MCR1906-7                                                                                                                                                                                                                          |           | 600 | —   | —    |                  |
| MCR1906-8                                                                                                                                                                                                                          |           |     |     |      |                  |
| Peak Forward Blocking Current<br>(Rated $V_{DRM}$ , $R_{GK} = 1000 \text{ Ohms}$ , $T_J = 110^{\circ}\text{C}$ )                                                                                                                   | $I_{DRM}$ | —   | —   | 500  | $\mu\text{A}$    |
| Peak Reverse Blocking Current<br>(Rated $V_{RRM}$ , $R_{GK} = 1000 \text{ Ohms}$ , $T_J = 110^{\circ}\text{C}$ )                                                                                                                   | $I_{RRM}$ | —   | —   | 500  | $\mu\text{A}$    |
| Peak On-State Voltage (Pulsed, 1.0 ms max, Duty Cycle $\leq 1.0\%$ )<br>( $I_F = 1.0 \text{ A}$ dc peak)                                                                                                                           | $V_{TM}$  | —   | —   | 1.75 | Volt             |
| Gate Trigger Current (Continuous dc)<br>( $V_{AK} = 7.0 \text{ V}$ , $R_L = 100 \text{ ohms}$ )                                                                                                                                    | $I_{GT}$  | —   | —   | 1.0  | $\text{mA}_{dc}$ |
| Gate Trigger Voltage (Continuous dc)<br>( $V_{AK} = 7.0 \text{ V}$ , $R_L = 100 \text{ ohms}$ )<br>( $V_{AK} = \text{Rated } V_{DRM}$ , $R_L = 100 \text{ ohms}$ , $R_{GK} = 1000 \text{ Ohms}$ ,<br>$T_J = 110^{\circ}\text{C}$ ) | $V_{GT}$  | —   | —   | 1.0  | Volt             |
|                                                                                                                                                                                                                                    |           | 0.1 | —   | —    |                  |
| Holding Current<br>( $V_{AK} = 7.0 \text{ V}$ , $R_{GK} = 1000 \text{ ohms}$ )                                                                                                                                                     | $I_H$     | —   | —   | 5.0  | $\text{mA}$      |
| Turn-On Time<br>( $I_{GT} = 10 \text{ mA}$ , $I_F = 1.0 \text{ A}$ )<br>( $I_{GT} = 20 \text{ mA}$ , $I_F = 1.0 \text{ A}$ )                                                                                                       | $t_{gt}$  | —   | 0.8 | —    | $\mu\text{s}$    |
|                                                                                                                                                                                                                                    |           | —   | 0.6 | —    |                  |
| Turn-Off Time<br>( $I_F = 1.0 \text{ A}$ , $I_R = 1.0 \text{ A}$ , $dv/dt = 20 \text{ V}/\mu\text{s}$ , $T_J = 110^{\circ}\text{C}$ )                                                                                              | $t_d$     | —   | 10  | —    | $\mu\text{s}$    |