



## MCR106

SCR

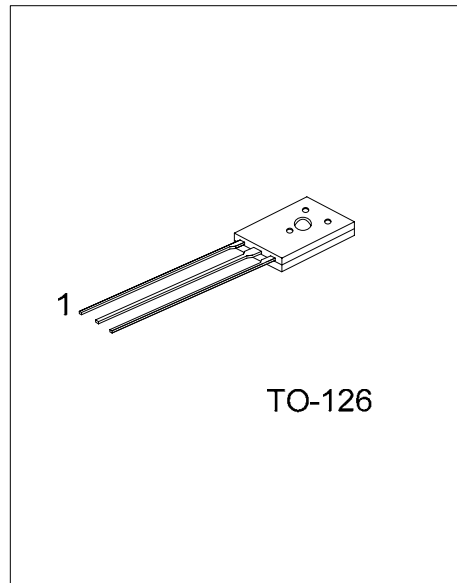
### REVERSE BLOCKING TRIODE THYRISTORS

#### DESCRIPTION

PNPN devices designed for high volume consumer applications such as temperature, light and speed control; process and remote control, and warning systems where reliability of operation is important.

#### FEATURES

- \* Glass-passivated surface for reliability and uniformity
- \* Power rated at economical prices
- \* Practical level triggering and holding characteristics
- \* Flat, rugged, thermopad construction for low thermal resistance, high heat dissipation and durability



\*Pb-free plating product number: MCR106L

#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
MCR106-6-T60-K	MCR106L-6-T60-K	TO-126	K	A	G	Bulk
MCR106-8-T60-K	MCR106L-8-T60-K	TO-126	K	A	G	Bulk

Note: Pin assignment: G: Gate K: Cathode A: Anode

<p>MCR106L-6-T60-K</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p>	<p>(1) K: Bulk</p> <p>(2) T60: TO-126</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS ( $T_J=25$  , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Peak Repetitive Forward and Reverse Blocking Voltage (Note 1) ( $T_J=110$ , $R_{GK}=1k\Omega$ )	MCR106-6	400	V
	MCR106-8	600	V
RMS Forward Current (All conduction Angles)	$I_{T(RMS)}$	4	A
Average Forward Current ( $T_C=93$ or $T_A=30$ )	$I_{T(AV)}$	2.55	A
Peak Non-repetitive Surge Current (1/2 Cycle, 60Hz, $T_J=-40 \sim +110$ )	$I_{TSM}$	25	A
Circuit Fusing Considerations ( $t=8.3$ ms)	$I^2t$	2.6	A <sup>2</sup>
Peak Gate Power	$P_{GM}$	0.5	W
Average Gate Power	$P_{G(AV)}$	0.1	W
Peak Forward Gate Current	$I_{GM}$	0.2	A
Peak Reversed Gate Voltage	$V_{RGM}$	6	V
Mounting Torque (Note 2)		6	In. lb.
Operating Junction Temperature	$T_J$	-40 ~ +110	
Storage Temperature	$T_{STG}$	-40 ~ +150	

Note 1.  $V_{DRM}$  and  $V_{RRM}$  for all 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 of the devices are exceeded.

2. Torque rating applies with use of compression washer (B52200-F006 or equivalent). Mounting torque in excess of 6 in. lb. does not appreciably lower case-to-sink thermal resistance. Anode lead and heatsink contact pad are common. For soldering purposes (either terminal connection or device mounting), soldering temperatures shall not exceed +200°C. For optimum results, an activated flux (oxide removing) is recommended.

3. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

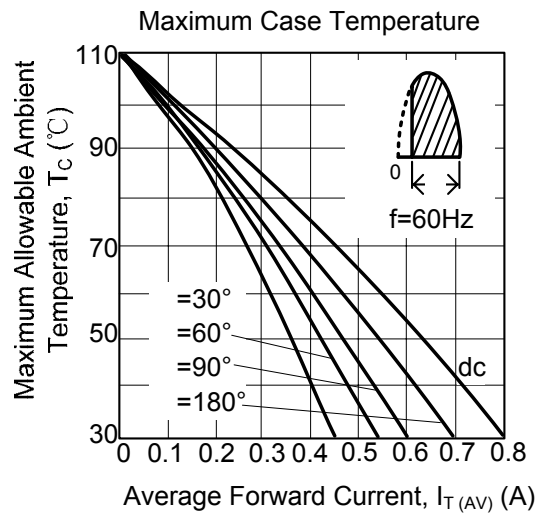
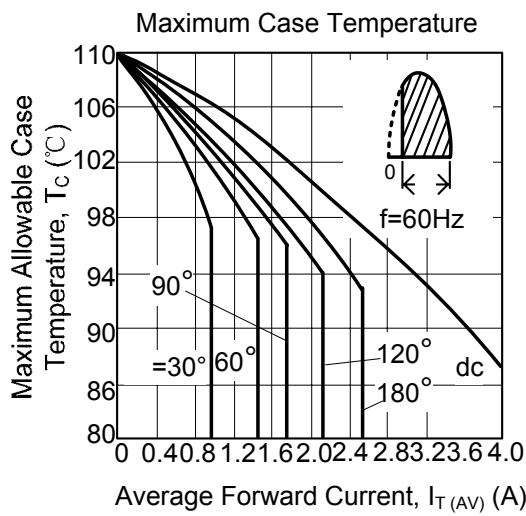
PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance, Junction to Ambient	$\theta_{JA}$	75	/W
Thermal Resistance, Junction to Case	$\theta_{JC}$	3	/W

■ ELECTRICAL CHARACTERISTICS ( $T_C=25$  and  $R_{GK}=1000 \Omega$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Peak Forward or Reverse Blocking Current ( $V_{AK}=\text{Rated } V_{DRM} \text{ or } V_{RRM}$ )	$I_{DRM}, I_{RRM}$	$T_J=25$			10	$\mu A$
		$T_J=100$			200	$\mu A$
Forward "On" Voltage ( $I_{TM}=4A$ peak)	$V_{TM}$				2	V
Gate Trigger Current (continuous DC) (Note)	$I_{GT}$	$V_{AK}=7V, R_L=100\Omega$			200	$\mu A$
		$V_{AK}=7V, R_L=100\Omega, T_C=-40$			500	$\mu A$
Gate Trigger Voltage (continuous DC)	$V_{GT}$	$V_{AK}=7V, R_L=100\Omega, T_C=25$			1	V
Gate Non-Trigger Voltage	$V_{GD}$	$V_{AK}=\text{Rated } V_{DRM}, R_L=100\Omega, T_J=110$	0.2			V
Holding Current	$I_H$	$V_{AK}=7V, T_C=25$			5	mA
Forward Voltage Application Rate	$dv/dt$	$T_J=110$		10		V/ $\mu s$

Note:  $R_{GK}$  current is not included in measurement.

■ TYPICAL CHARACTERISTICS



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