



## MCR106

SCR

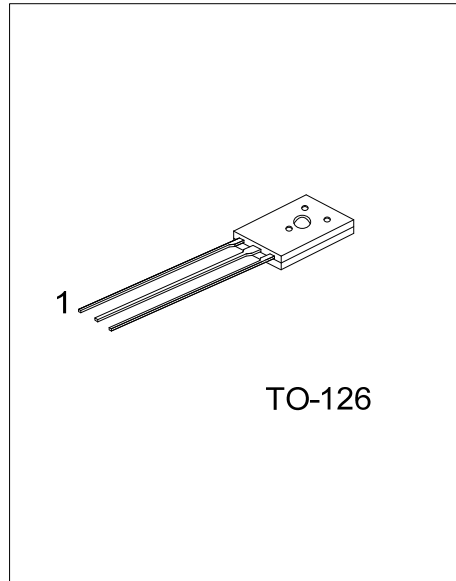
### REVERSE BLOCKING TRIODE THYRISTORS

#### 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



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MCR106L-6-T60-K	MCR106G-6-T60-K	TO-126	K	A	G	Bulk
MCR106L-8-T60-K	MCR106G-8-T60-K	TO-126	K	A	G	Bulk

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

MCR106L-6-T60-K	(1) Packing Type	(1) K: Bulk
	(2) Package Type	(2) T60: TO-126
	(3) Lead Free	(3) G: Halogen Free, L: Lead Free

■ ABSOLUTE MAXIMUM RATINGS ( $T_J=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Peak Repetitive Forward and Reverse Blocking Voltage (Note 1) ( $T_J=110^{\circ}\text{C}$ , $R_{GK}=1\text{k}\Omega$ )	MCR106-6	400	V
	MCR106-8	600	V
RMS Forward Current (All conduction Angles)	$I_{T(RMS)}$	4	A
Average Forward Current ( $T_C=93^{\circ}\text{C}$ or $T_A=30^{\circ}\text{C}$ )	$I_{T(AV)}$	2.55	A
Peak Non-repetitive Surge Current (1/2 Cycle, 60Hz, $T_J=-40 \sim +110^{\circ}\text{C}$ )	$I_{TSM}$	25	A
Circuit Fusing Considerations ( $t=8.3 \text{ ms}$ )	$I^2t$	2.6	$\text{A}^2\text{S}$
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.
Junction Temperature	$T_J$	+110	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^{\circ}\text{C}$

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.

- 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  $+200^{\circ}\text{C}$ . For optimum results, an activated flux (oxide removing) is recommended.
- 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

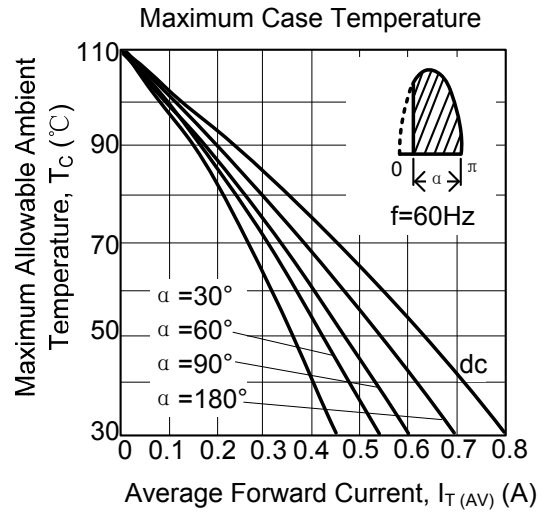
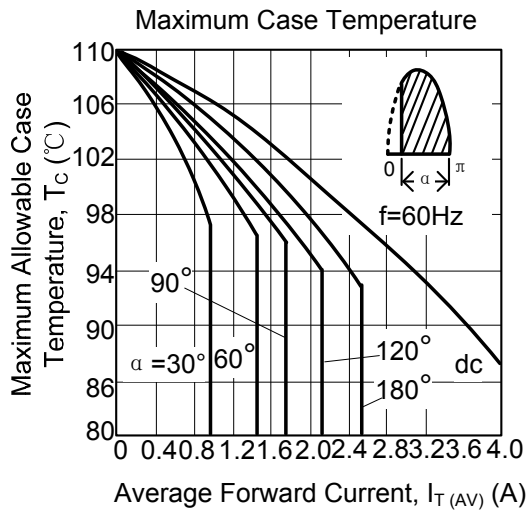
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	75	$^{\circ}\text{C}/\text{W}$
Junction to Case	$\theta_{JC}$	3	$^{\circ}\text{C}/\text{W}$

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

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

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

■ TYPICAL CHARACTERISTICS



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