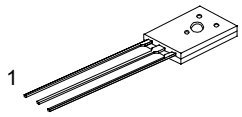
REVERSE BLOCKING TRIODE THYRISTORS

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



TO-126

1:CATHODE 2:ANODE 3:GATE

ABSOLUTE MAXIMUM RATINGS (Tj=25°C unless otherwise noted.)

PARAMETER	SYMBOL	MAX	UNIT
Peak Repetitive Forward and Reverse Blocking Voltage (note 1) (Tj=110°C, R_{GK}=1kΩ) MCR106-6 MCR106-8	V_{DRM}, V_{RRM}	 400 600	V
RMS Forward Current (All conduction Angles)	$I_{T(RMS)}$	4	A
Average Forward Current (T_C=93°C or T_A=30°C)	$I_{T(AV)}$	2.55	A
Peak Non-repetitive Surge Current (1/2 Cycle, 60Hz, Tj=-40 to +110°C)	I_{TSM}	25	A
Circuit Fusing Considerations (t=8.3 ms)	I^2t	2.6	A^2
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
Operating Junction Temperature Range	Tj	-40 ~ +110	°C
Storage Temperature Range	Tstg	-40 ~ +150	°C
Mounting Torque (note 2)		6	In. lb.

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.

Note 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.

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX	UNIT
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3	°C/W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	75	°C/W

ELECTRICAL CHARACTERISTICS (Tc=25°C and R_{GK}=1000 Ωunless otherwise stated)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Peak Forward or Reverse Blocking Current (V_{AK}=Rated V_{DRM} or V_{RRM}) Tj=25°C Tj=100°C	I_{DRM},I_{RRM}			 10 200	 μA μA
Forward “On” Voltage (I_{TM}=4A peak)	V_{TM}			2	V
Gate Trigger Current (continuous dc) (Note) (V_{AK}=7V, R_L=100Ω) (V_{AK}=7V, R_L=100Ω, Tc=-40°C)	I_{GT}			 200 500	μA
Gate Trigger Voltage (continuous dc) (V_{AK}=7V, R_L=100Ω, Tc=25°C)	V_{GT}			1	V
Gate Non-Trigger Voltage (V_{AK}=Rated V_{DRM}, R_L=100Ω, Tj=110°C)	V_{GD}	0.2			V
Holding Current (V_{AK}=7V, Tc=25 °C)	I_H			5	mA
Forward Voltage Application Rate (Tj=110°C)	dv/dt		10		V/μs

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

CURRENT DERATING

FIGURE 1 – MAXIMUM CASE TEMPERATURE

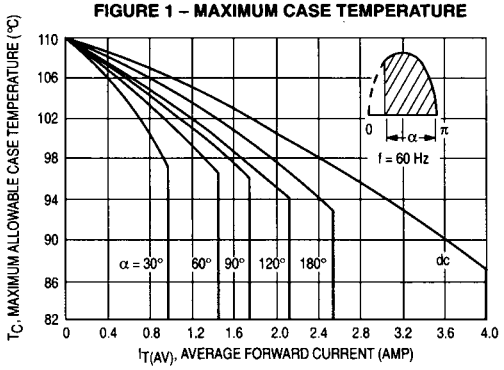


FIGURE 2 – MAXIMUM AMBIENT TEMPERATURE