



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.

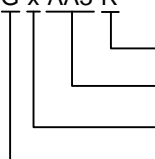
FEATURES

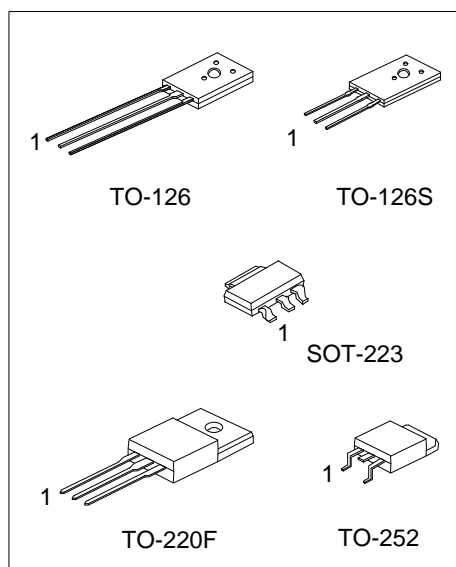
- * Glass-passivated surface for reliability and uniformity
- * Power rated at economical prices
- * Practical level triggering and holding characteristics
- * Flat, rugged, thermopad construction for low thermal resistance, high heat dissipation and durability

ORDERING INFORMATION

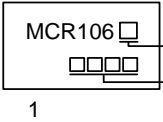
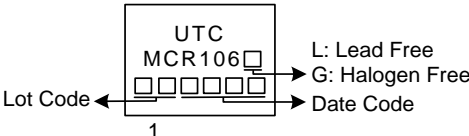
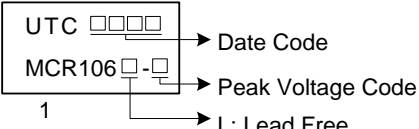
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MCR106L-x-AA3-R	MCR106G-x-AA3-R	SOT-223	K	A	G	Tape Reel
MCR106L-x-TF3-T	MCR106G-x-TF3-T	TO-220F	K	A	G	Tube
MCR106L-x-TN3-R	MCR106G-x-TN3-R	TO-252	K	A	G	Tape Reel
MCR106L-x-T60-K	MCR106G-x-T60-K	TO-126	K	A	G	Bulk
MCR106L-x-T6S-K	MCR106G-x-T6S-K	TO-126S	K	A	G	Bulk

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

<p>MCR106G-x-AA3-R</p> 	<p>(1) T: Tube, K: Bulk, R: Tape Reel</p> <p>(2) AA3: SOT-223, TF3: TO-220F, , TN3: TO-252, T60: TO-126, T6S: TO-126S</p> <p>(3) 6: 400V, 8: 600V</p> <p>(4) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING

PACKAGE	MARKING
SOT-223	 <p>1</p> <p>L: Lead Free G: Halogen Free Date Code</p>
TO-252 TO-252D	 <p>Lot Code</p> <p>1</p> <p>UTC MCR106 L: Lead Free G: Halogen Free Date Code</p>
TO-126 TO-126S	 <p>1</p> <p>UTC MCR106 Date Code Peak Voltage Code L: Lead Free G: Halogen Free</p>

■ ABSOLUTE MAXIMUM RATINGS (T_J=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Peak Repetitive Forward and Reverse Blocking Voltage (Note 1) (T _J =110°C, R _{GK} =1kΩ)	V _{DRM} , V _{RRM}	400	V
		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, T _J =-40 ~ +110°C)	I _{TSM}	25	A
Circuit Fusing Considerations (t=8.3 ms)	I ² t	2.6	A ² 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	°C
Storage Temperature	T _{STG}	-40 ~ +150	°C

Notes: 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

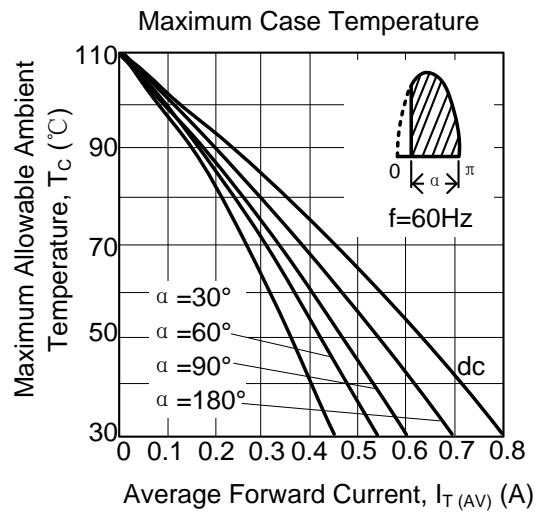
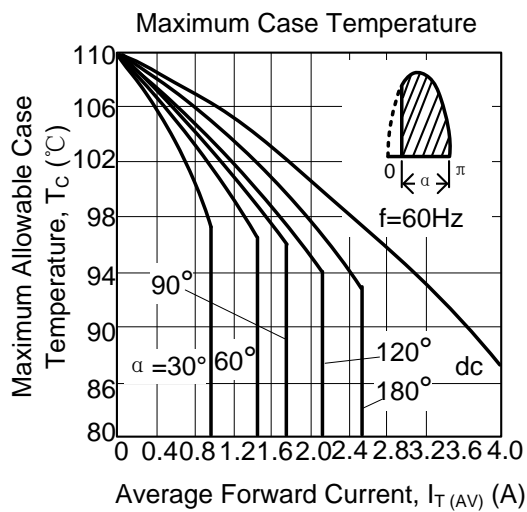
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	180	°C/W
	TO-220F/TO-252	62.5	°C/W
	TO-126/TO-126S	75	°C/W
Junction to Case	SOT-223	18.3	°C/W
	TO-220F	3.31	°C/W
	TO-126/TO-126S	3	°C/W
	TO-252	2.6	°C/W

■ ELECTRICAL CHARACTERISTICS (T_C=25°C and R_{GK}=1000Ω, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Peak Forward or Reverse Blocking Current (V _{AK} =Rated V _{DRM} or V _{RRM})	I _{DRM} , I _{RRM}	T _J =25°C			10	μA
		T _J =100°C			200	μA
Forward "On" Voltage (I _{TM} =4A peak)	V _{TM}				2	V
Gate Trigger Current (continuous DC) (Note)	I _{GT}	V _{AK} =7V, R _L =100Ω			200	μA
		V _{AK} =7V, R _L =100Ω, T _C =-40°C			500	
Gate Trigger Voltage (continuous DC)	V _{GT}	V _{AK} =7V, R _L =100Ω, T _C =25°C			1	V
Gate Non-Trigger Voltage	V _{GD}	V _{AK} =Rated V _{DRM} , R _L =100Ω, T _J =110°C	0.2			V
Holding Current	I _H	V _{AK} =7V, T _C =25°C			5	mA
Forward Voltage Application Rate	dv/dt	T _J =110°C		10		V/μs

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

■ TYPICAL CHARACTERISTICS



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