

Small Signal Product

**Thyristors**

FEATURES

- Epitaxial planar die construction
- Moisture sensitivity level 1
- Matte Tin (Sn) lead finish with Nickel (Ni) underplate
- Packing code with suffix "G" means Green compound (Halogen free)

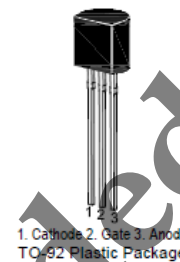


TO-92



MECHANICAL DATA

- Case : TO-92 plastic package
- Terminal : Matte tin plated, lead free, solderable per MIL-STD-202, method 208 guaranteed
- High temperature soldering guaranteed : 260°C/10s
- Weight : 0.19 gram (approximately)



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Forward Current RMS (All Conduction Angles)	I <sub>T(RMS)</sub>	0.8	A
Peak Repetitive Forward and Reverse Blocking Voltage (T <sub>J</sub> =25°C to 125°C, R <sub>GK</sub> =1KΩ)	MCR100-3	100	V
	MCR100-4	200	
	MCR100-5	300	
	MCR100-6	400	
	MCR100-7	500	
MCR100-8	600		
Peak Forward Surge Current (T <sub>A</sub> =25°C, 1/2 Cycle, Sine Wave, 60Hz)	I <sub>TSM</sub>	10	A
Circuit Fusing Considerations (t= 8.3 ms)	I <sup>2</sup> t	0.415	A <sup>2</sup> s
Forward Peak Gate Power (T <sub>A</sub> =25°C, PW ≤ 1 μs)	P <sub>GM</sub>	0.1	W
Forward Average Gate Power (T <sub>A</sub> =25°C)	P <sub>GF(AV)</sub>	0.01	W
Forward Peak Gate Current (T <sub>A</sub> =25°C, PW ≤ 1 μs)	I <sub>GFM</sub>	1	A
Reverse Peak Gate Current (T <sub>A</sub> =25°C, PW ≤ 1 μs)	V <sub>GRM</sub>	5	V
Operating junction temperature range	T <sub>J</sub>	-40 ~ +125	°C
Storage temperature range	T <sub>STG</sub>	-40 ~ +150	°C

Notes: 1. Valid provided that electrodes are kept at ambient temperature

PARAMETER	SYMBOL	MIN	MAX	UNIT
Peak Forward or Reverse Blocking Current at V <sub>AK</sub> = Rated V <sub>DRM</sub> or V <sub>RPM</sub>	I <sub>DRM</sub> I <sub>RPM</sub>	-	10	μA
Peak Forward On-State Voltage at I <sub>TM</sub> =1A Peak, T <sub>A</sub> =25°C	V <sub>TM</sub>	-	1.7	V
Gate Trigger Current (Continuous dc) at Anode Voltage = 7 Vdc., R <sub>L</sub> =100Ω	I <sub>GT</sub>	-	200	μA
Gate Trigger Current (Continuous dc) at Anode Voltage = 7 Vdc., R <sub>L</sub> =100Ω at Anode Voltage = Rated V <sub>DRM</sub> , R <sub>L</sub> =100Ω)	V <sub>GT</sub>	-	0.8	V
Holding Current at Anode Voltage =7 Vdc, Initiating Current=20mA	I <sub>H</sub>	-	5	mA

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RATINGS AND CHARACTERISTICS CURVES

( $T_A=25^\circ\text{C}$  unless otherwise noted)

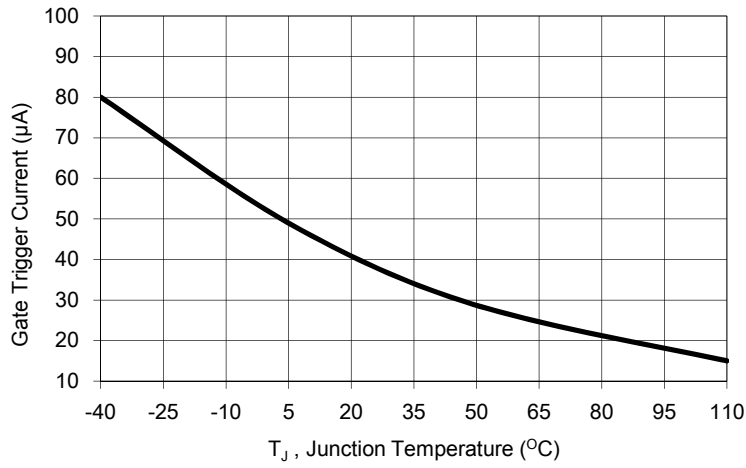


Fig. 1 Typical Gate Trigger Current VS. Junction Temperature

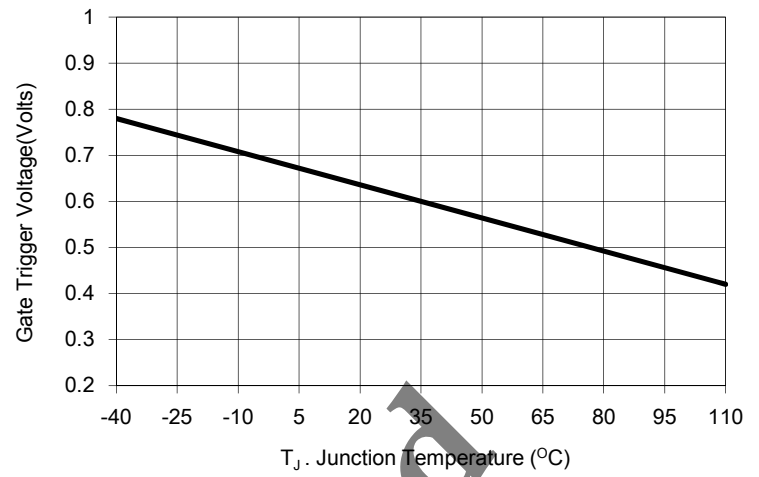


Fig. 2 Typical Gate Trigger Voltage VS. Junction Temperature

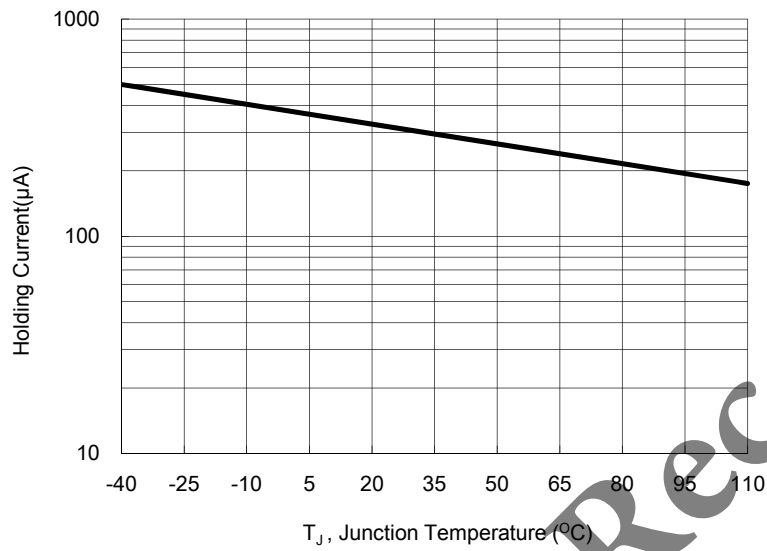


Fig. 3 Typical Holding Current VS. Junction Temperature

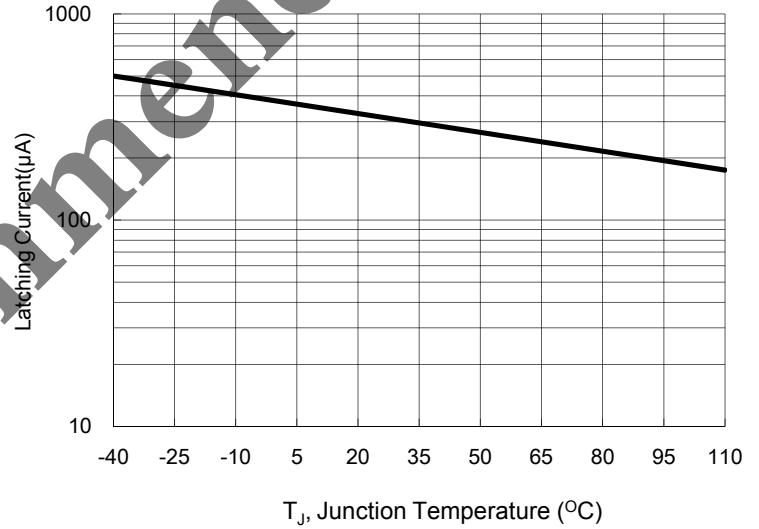


Fig. 4 Typical Latching Current VS. Junction Temperature

Fig. 5 Typical RMS Current Derating

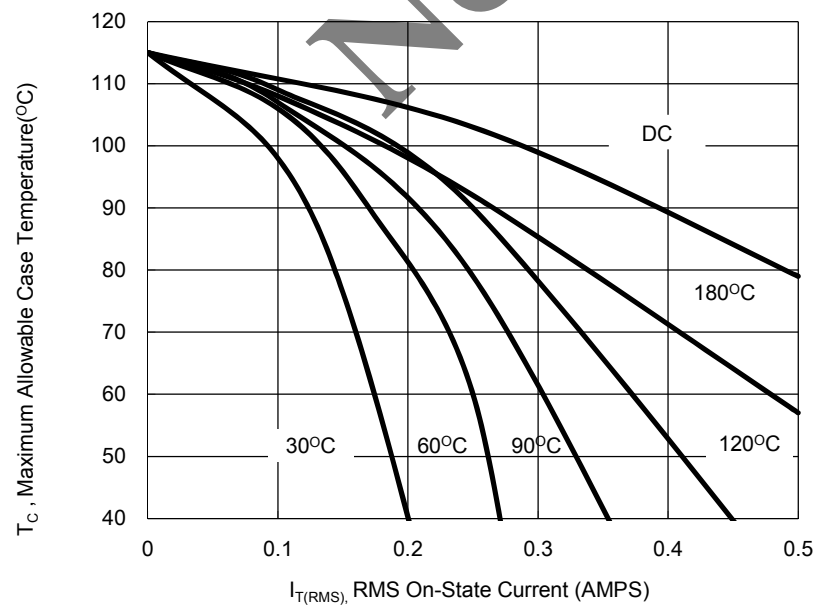
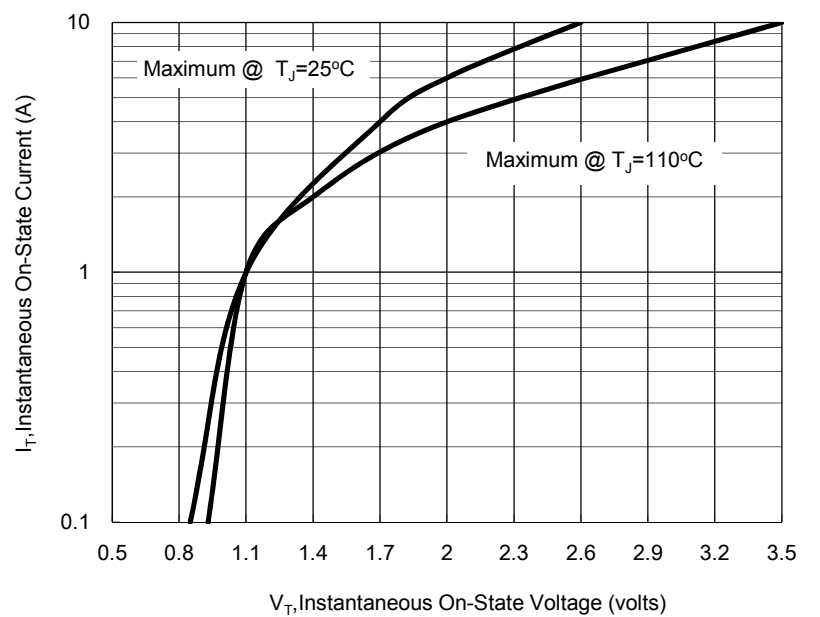


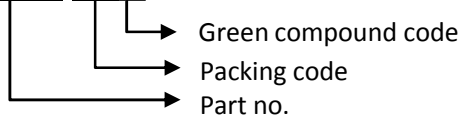
Fig. 6 Typical On-State Characteristics



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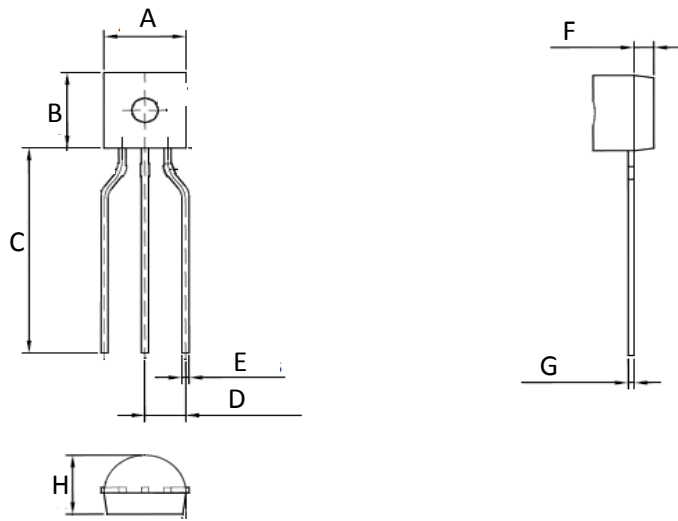
ORDER INFORMATION (EXAMPLE)

**MCR100-3 A1G**



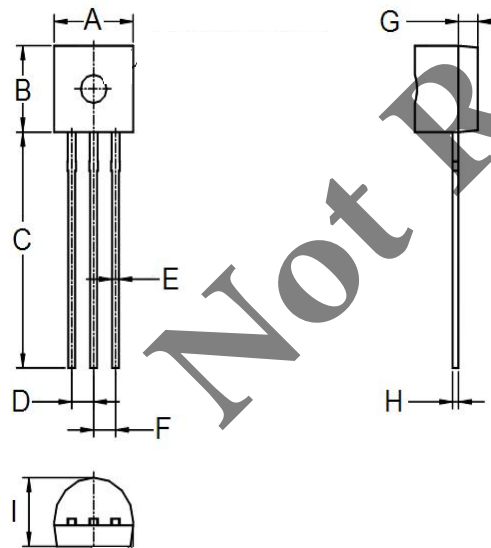
PACKAGE OUTLINE DIMENSIONS

**TO-92 (Ammo)**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.30	5.10	0.169	0.201
B	4.30	4.70	0.169	0.185
C	12.50	-	0.492	-
D	2.20	2.80	0.087	0.110
E	0.35	0.55	0.014	0.022
F	0.59	1.40	0.023	0.055
G	0.29	0.51	0.011	0.020
H	3.30	4.10	0.130	0.161

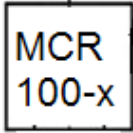
**TO-92 (Bulk)**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.30	5.10	0.169	0.201
B	4.30	4.70	0.169	0.185
C	12.50	14.50	0.492	0.571
D	1.17	1.37	0.046	0.054
E	0.35	0.55	0.014	0.022
F	1.17	1.37	0.046	0.054
G	0.59	1.40	0.023	0.055
H	0.29	0.51	0.011	0.020
I	3.30	4.10	0.130	0.161

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MARKING DIAGRAM



x = Device P/N from 3~8

**Not Recommended**