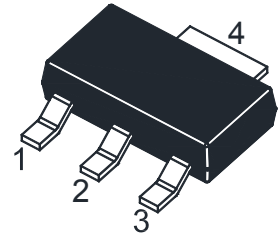
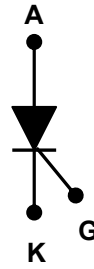


# MCR100-4Q

## Silicon Controlled Rectifiers

Reverse Blocking Triode Thyristors



1. Cathode 2, 4. Anode 3. Gate  
SOT-223 Plastic Package

### Absolute Maximum Ratings ( $T_J = 25\text{ °C}$ unless otherwise noted)

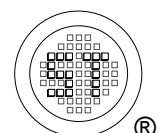
Parameter	Symbol	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage <sup>1)</sup> ( $T_J = 25$ to $125\text{ °C}$ , $R_{GK} = 1\text{ K}\Omega$ )	$V_{DRM}$ and $V_{RRM}$	200	V
Forward Current RMS (All Conduction Angles)	$I_{T(RMS)}$	0.8	A
Peak Forward Surge Current, $T_A = 25\text{ °C}$ (1/2 Cycle, Sine Wave, 60 Hz)	$I_{TSM}$	10	A
Circuit Fusing Considerations ( $t = 8.3\text{ ms}$ )	$I^2t$	0.415	$A^2s$
Forward Peak Gate Power ( $T_A = 25\text{ °C}$ , $PW \leq 1\text{ }\mu s$ )	$P_{GM}$	0.1	W
Forward Average Gate Power ( $T_A = 25\text{ °C}$ )	$P_{GF(AV)}$	0.01	W
Forward Peak Gate Current ( $T_A = 25\text{ °C}$ , $PW \leq 1\text{ }\mu s$ )	$I_{GFM}$	1	A
Reverse Peak Gate Voltage ( $T_A = 25\text{ °C}$ $PW \leq 1\text{ }\mu s$ )	$V_{GRM}$	5	V
Operating Junction Temperature Range at Rated $V_{RRM}$ and $V_{DRM}$	$T_J$	- 40 to + 125	$^{\circ}C$
Storage Temperature Range	$T_{stg}$	- 40 to + 150	$^{\circ}C$

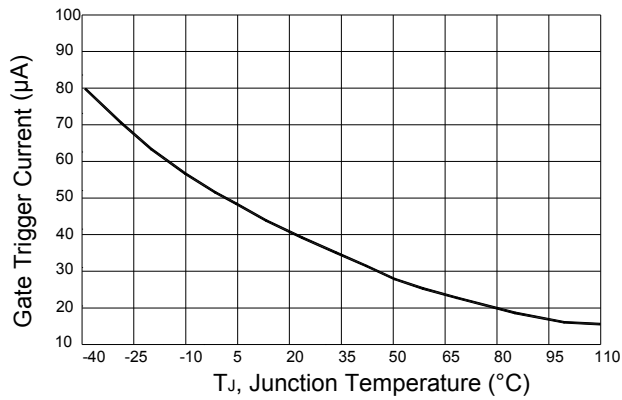
<sup>1)</sup>  $V_{DRM}$  and  $V_{RRM}$  for types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; however, positive gate voltage shall not be applied concurrent with negative potential on the anode. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the device are exceeded.

### Characteristics at $T_a = 25\text{ °C}$ , $R_{GK} = 1\text{ K}\Omega$ unless otherwise noted.

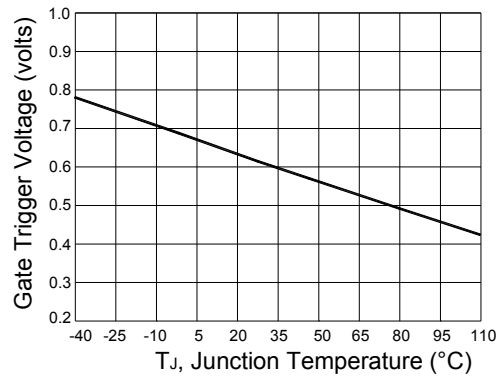
Parameter	Symbol	Min.	Max.	Unit
Peak Forward or Reverse Blocking Current at $V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}$	$I_{DRM}, I_{RRM}$	-	10	$\mu A$
Peak Forward On-State Voltage at $I_{TM} = 1\text{ A Peak}$ , $T_A = 25\text{ °C}$	$V_{TM}$	-	1.7	V
Gate Trigger Current (Continuous dc) <sup>1)</sup> at Anode Voltage = 7 Vdc, $R_L = 100\text{ }\Omega$	$I_{GT}$	-	200	$\mu A$
Gate Trigger Voltage (Continuous dc) at Anode Voltage = 7 Vdc, $R_L = 100\text{ }\Omega$ at Anode Voltage = Rated $V_{DRM}$ , $R_L = 100\text{ }\Omega$	$V_{GT}$	-	0.8	V
Holding Current at Anode Voltage = 7 Vdc, initiating current = 20 mA)	$I_H$	-	5	mA

<sup>1)</sup>  $R_{GK}$  current is not included in measurement.

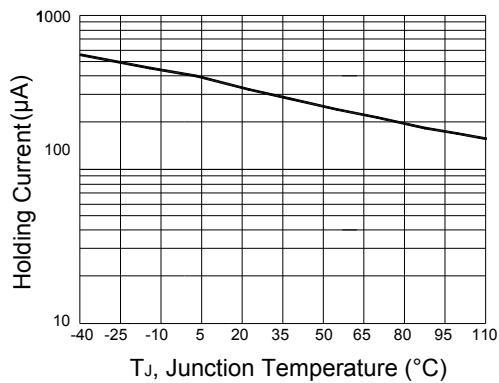




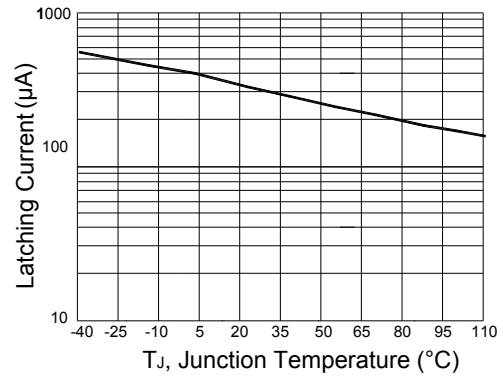
**Figure 1. Typical Gate Trigger Current Versus Junction Temperature**



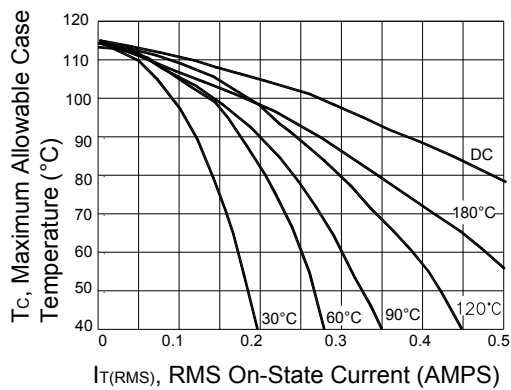
**Figure 2. Typical Gate Trigger Voltage Versus Junction Temperature**



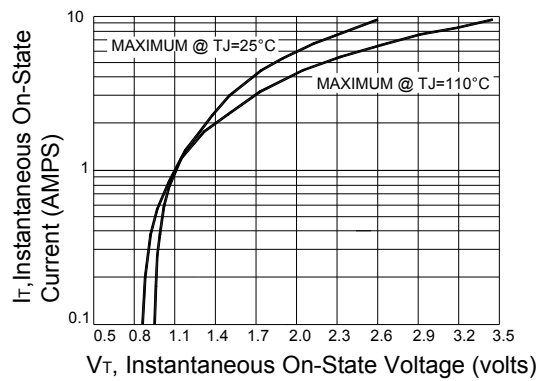
**Figure 3. Typical Holding Current Versus Junction Temperature**



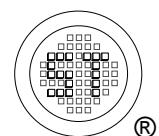
**Figure 4. Typical Latching Current Versus Junction Temperature**



**Figure 5. Typical RMS Current Derating**



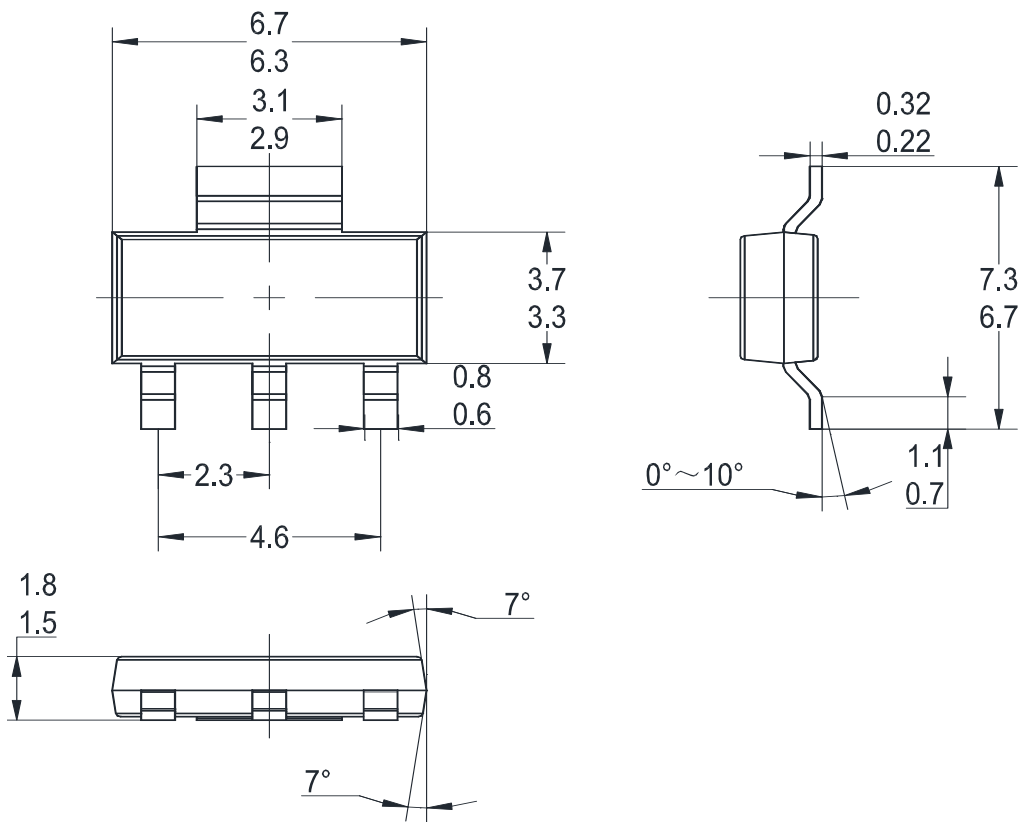
**Figure 6. Typical On-State Characteristics**



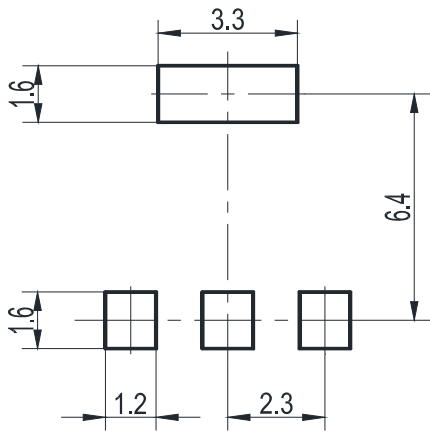
# MCR100-4Q

## PACKAGE OUTLINE

## SOT-223 (Dimensions in mm)



## Recommended Soldering Footprint



## Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-223	12	4 ± 0.1	0.157 ± 0.004	330	13	2,500

