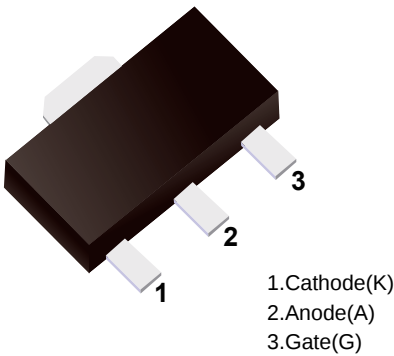


MCR100-4/-6/-8

Silicon Controlled Rectifiers

- Features
 - Sensitive gate silicon controlled rectifiers
 - Reverse blocking thyristors



■ Simplified outline(SOT-89)

Pin	Symbol	Description
1	K	Cathode
2	A	Anode
3	G	Gate

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbols	Value	Units
Peak Repetitive Off-State Voltage ^{Note4} (T _J = -40℃ to 110℃, Sine Wave, 50 to 60 Hz, Gate Open)	MCR100-4 MCR100-6 MCR100-8	V _{DRM} , V _{RRM}	200 400 600	V
On-State RMS Current		I _{T(RMS)}	0.8	A
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave, 60 Hz, T _J = 25℃)		I _{TSM}	8	A
Circuit Fusing Considerations (t = 8.3ms)		I ² t	0.415	A ² s
Forward Peak Gate Power (Pulse Width ≤ 1 μs)		P _{GM}	0.1	W
Forward Average Gate Power (t = 8.3ms)		P _{G(AV)}	0.1	W
Peak Gate Current – Forward (Pulse Width ≤ 1 μs)		I _{GM}	1	A
Peak Gate Voltage – Reverse (Pulse Width ≤ 1 μs)		V _{GRM}	5	V
Operating Junction Temperature Range		T _J	- 40 to + 110	℃
Storage Temperature Range		T _{STG}	- 40 to + 150	℃

■ Electrical Characteristics Ta = 25°C

Parameter	Symbols	Max.	Units
Peak Forward or Reverse Blocking Current ^{Note2} at V _D = Rated V _{DRM} and V _{RRM} , R _{GK} = 1KΩ	I _{DRM} , I _{RRM}	10	μA
Peak Forward On-State Voltage ^{Note1} at I _{TM} = 0.8 A	V _{TM}	1.7	V
Gate Trigger Current ^{Note3} at V _{AK} = 7 V, R _L = 100 Ω	I _{GT}	200	μA
Holding Current ^{Note2} at V _{AK} = 7 V, Initiating Current = 20 mA	I _H	5 10	mA
Latch Current at V _{AK} = 7 V, I _g = 1 mA	I _L	10 15	mA
Gate Trigger Voltage ^{Note3} at V _{AK} = 7 V, R _L = 100 Ω	V _{GT}	0.8 1.2	V

Note:

1)Indicates pulse test width ≤ 1 ms, duty cycle ≤ 1%

2)R_{GK} = 1 KΩ included in measurement

3)Does not include R_{GK} in measurement

4)V_{DRM} and V_{RRM} for all types can be applied on continuous basis. Ratings apply for zero 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 devices are exceeded.

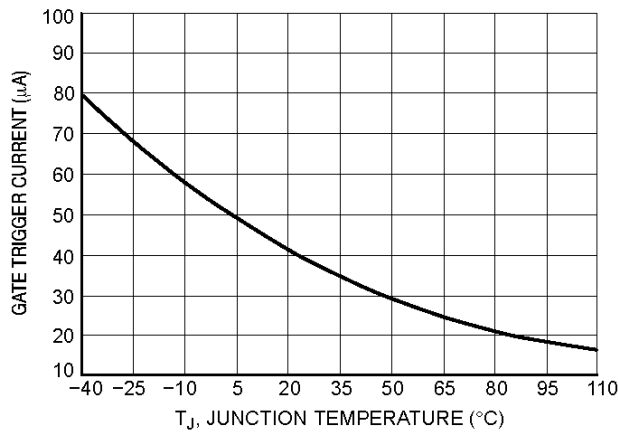


Figure 1. Typical Gate Trigger Current versus Junction Temperature

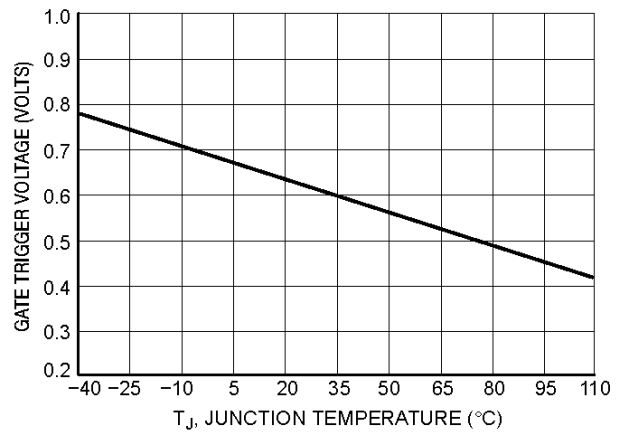


Figure 2. Typical Gate Trigger Voltage versus Junction Temperature

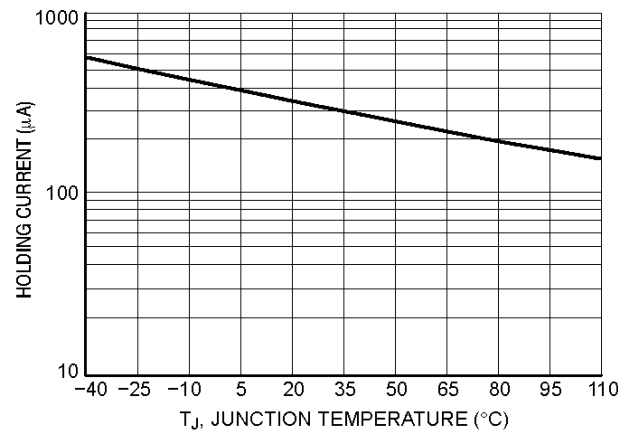


Figure 3. Typical Holding Current versus Junction Temperature

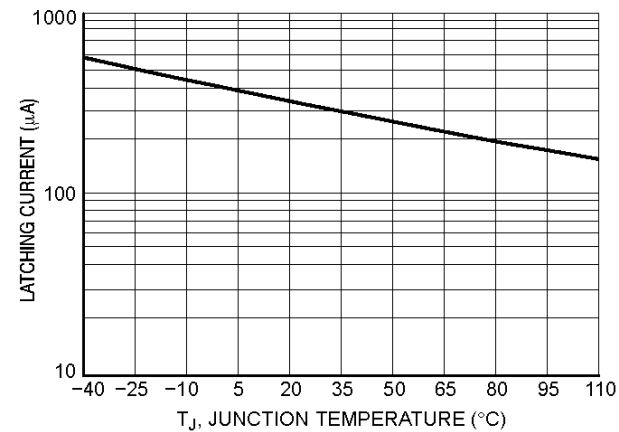


Figure 4. Typical Latching Current versus Junction Temperature

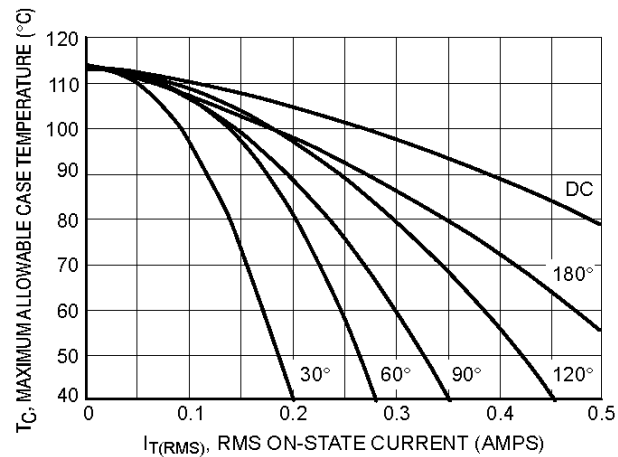


Figure 5. Typical RMS Current Derating

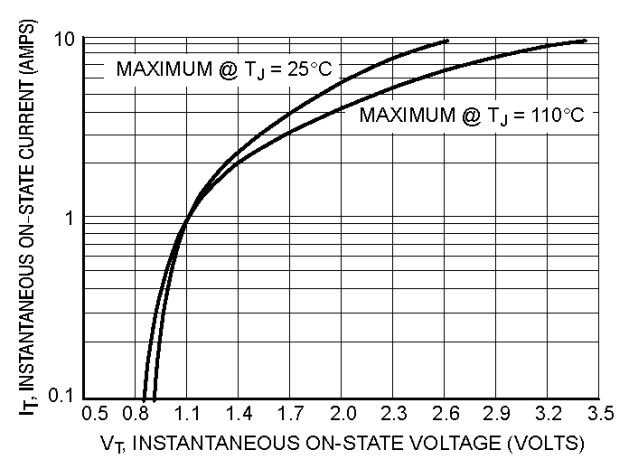
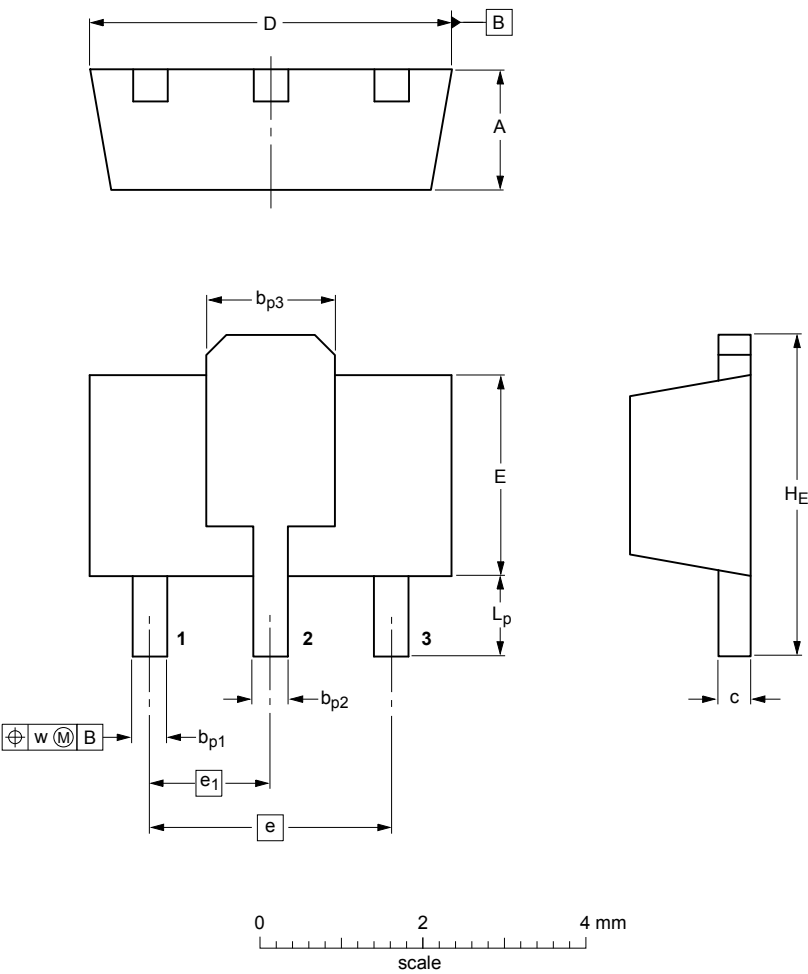


Figure 6. Typical On-State Characteristics

■ SOT-89



DIMENSIONS (mm are the original dimensions)

UNIT	A	bp1	bp2	bp3	c	D	E	e	e1	HE	Lp	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13