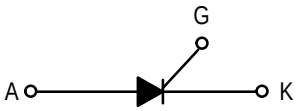
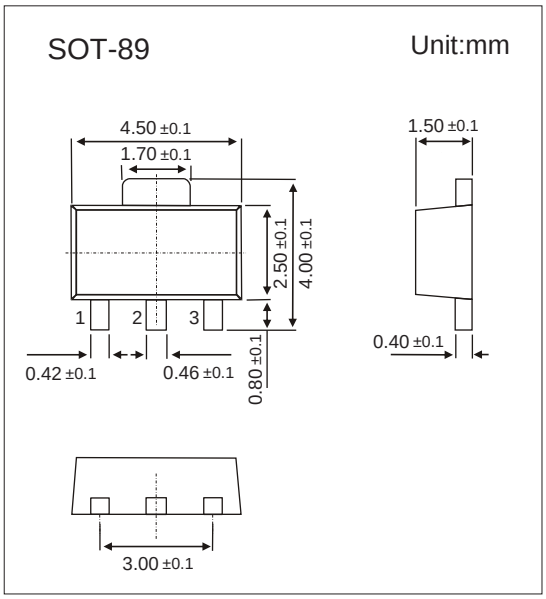
Silicon Controlled Rectifiers MCR18

SMD Type Thyristor

■ Features

- Blocking voltage to 600V
- RMS on-state current to 0.8 A
- General purpose switching





■ Ordering information

Normal	Pin Assignment		
	1	2	3
MCR18	G	A	K
MCR18R	K	A	G

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Peak Repetitive Forward and Reverse Blocking Voltage (T_J = 25 to 125℃, R_{GK} = 1 K Ω)	V_{DRM} and V_{RRM}	600	V
Forward Current RMS	$I_{T(RMS)}$	0.8	A
Peak Forward Surge Current, T_A = 25℃ (1/2 Cycle, Sine Wave, 60 Hz)	I_{TSM}	10	A
Circuit Fusing Considerations (t = 8.3 ms)	I^2t	0.415	A^2s
Peak Gate Power — Forward, T_A = 25℃	P_{GM}	0.1	W
Average Gate Power — Forward, T_A = 25℃	$P_{GF(AV)}$	0.01	W
Peak Gate Current — Forward, T_A = 25℃ (300 ms, 120 PPS)	I_{GFM}	1	A
Peak Gate Voltage — Reverse	V_{GRM}	5	V
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	℃/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	75	℃/W
Operating Junction Temperature Range @ Rated V_{RRM} and V_{DRM}	T_J	-40 to +125	℃
Storage Temperature Range	T_{stg}	-40 to +150	℃
Lead Solder Temperature(＜1/16"from case, 10 s max)		230	℃

■ Electrical Characteristics (Ta = 25℃,RGK = 1 kΩ unless otherwise noted.)

Parameter		Symbol	Testconditons	Min	Max	Unit
Peak Forward or Reverse Blocking Current	T_C = 25℃	I_{DRM}, I_{RRM}	V_{AK} = Rated V_{DRM} or V_{RRM}		10	μA
	T_C = 125℃				100	
Forward "On" Voltage *1		V_{TM}	I_{TM} = 1 A Peak @ T_A = 25℃		1.7	V
Gate Trigger Current (Continuous DC) *2	T_C = 25℃	I_{GT}	Anode Voltage = 7 V, R_L = 100Ω		200	μA
Gate Trigger Voltage (Continuous DC)	T_C = 25℃	V_{GT}	Anode Voltage=7V,R_L=100 Ω		0.8	V
	T_C = -40℃				1.2	
	T_C = 125℃		Anode Voltage = Rated V_{DRM},R_L=100Ω	0.1		
Holding Current	Tc=25℃	I_H	Anode Voltage=7V,initiating current=20mA		5	mA
	Tc=-40℃				10	

*1. Forward current applied for 1 ms maximum duration, duty cycle ≤ 1%.

*2. R_{GK} current is not included in measurement.