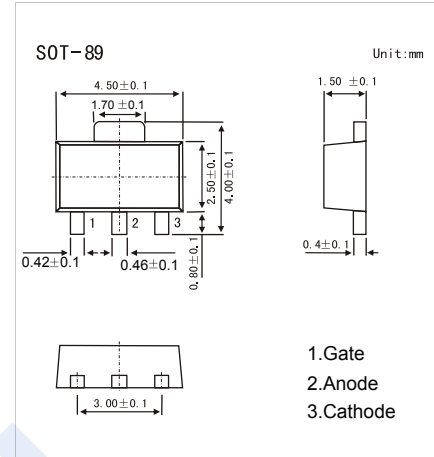


Silicon Controlled Rectifiers

CR05AS

■ Features

- Blocking Voltage to 400 V
- High Surge Current Capability — 10 A
- Glass-Passivated Surface for Reliability and Uniformity



■ Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Peak Repetitive Forward and Reverse Blocking Voltage ($T_J = 25$ to 125°C , $R_{GK} = 1\text{ K}\Omega$)	V_{DRM} and V_{RRM}	400	V
Forward Current RMS	$I_T(RMS)$	0.8	A
Average on-state current	$I_T(AV)$	0.5	A
Peak Forward Surge Current, $T_A = 25^\circ\text{C}$ (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
Peak Gate Power — Forward, $T_A = 25^\circ\text{C}$	P_{GM}	0.1	W
Average Gate Power — Forward, $T_A = 25^\circ\text{C}$	$P_{GF(AV)}$	0.01	W
Peak Gate Current — Forward, $T_A = 25^\circ\text{C}$ (300 ms, 120 PPS)	I_{GFM}	0.1	A
Peak Gate Voltage — Reverse	V_{GRM}	6	V
Thermal Resistance, Junction to Ambient	R^{θ}_{JA}	200	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	R^{θ}_{JC}	75	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range @ Rated V_{RRM} and V_{DRM}	T_J	-40 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +150	$^\circ\text{C}$
Lead Solder Temperature (< 1/16" from case, 10 s max)		260	$^\circ\text{C}$

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

Parameter	Symbol	Test conditons	Min	Max	Unit
Peak Forward or Reverse Blocking Current	I_{DRM}, I_{RRM}	$V_{AK} = \text{Rated } V_{DRM} \text{ or } V_{RRM}$		10 100	μA
Forward "On" Voltage *1	V_{TM}	$I_{TM} = 1 A \text{ Peak @ } T_A = 25^\circ C$		1.7	V
Gate Trigger Current (Continuous DC) *2	I_{GT}	Anode Voltage = 7 V, $R_L = 100\Omega$		200	μA
Gate Trigger Voltage (Continuous DC)	V_{GT}	Anode Voltage=7V, $R_L=100\Omega$		0.8 1.2	V
Holding Current	I_H	Anode Voltage=7V, initiating current=20mA		5 10	mA

*1. Forward current applied for 1 ms maximum duration, duty cycle $\leq 1\%$.

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■ Typical Characteristics

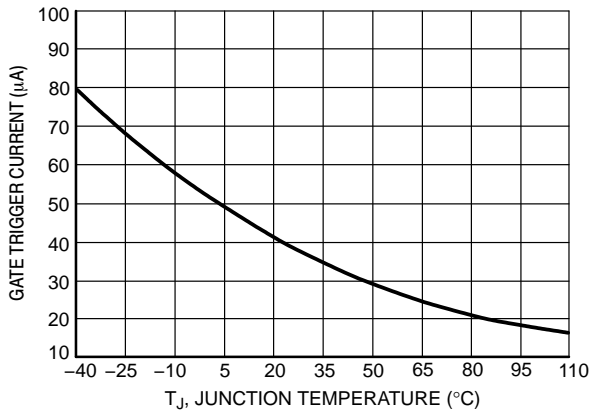


Figure 1. Typical Gate Trigger Current versus Junction Temperature

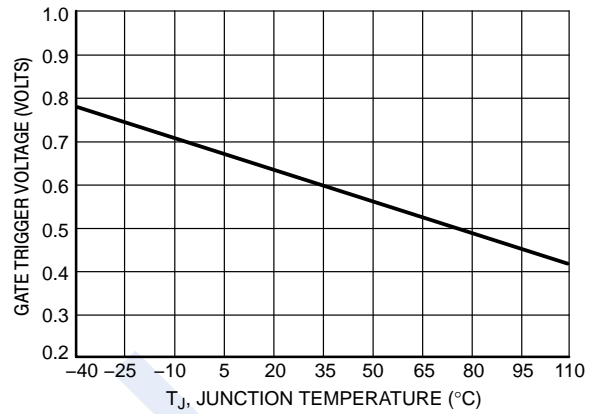


Figure 2. Typical Gate Trigger Voltage versus Junction Temperature

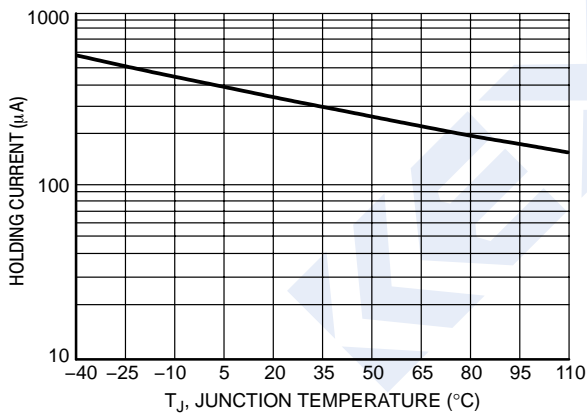


Figure 3. Typical Holding Current versus Junction Temperature

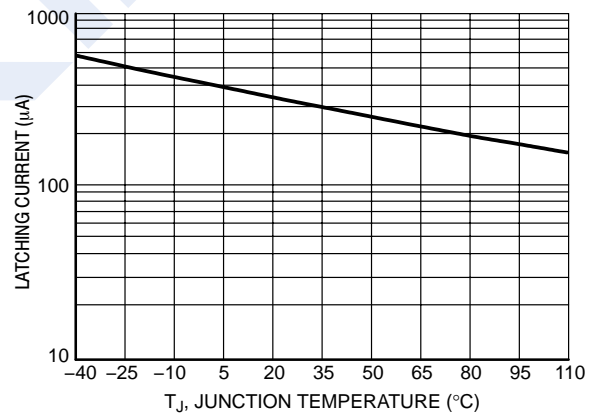


Figure 4. Typical Latching Current versus Junction Temperature

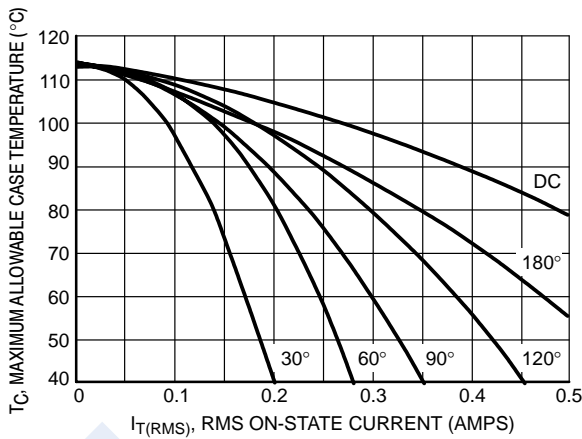


Figure 5. Typical RMS Current Derating

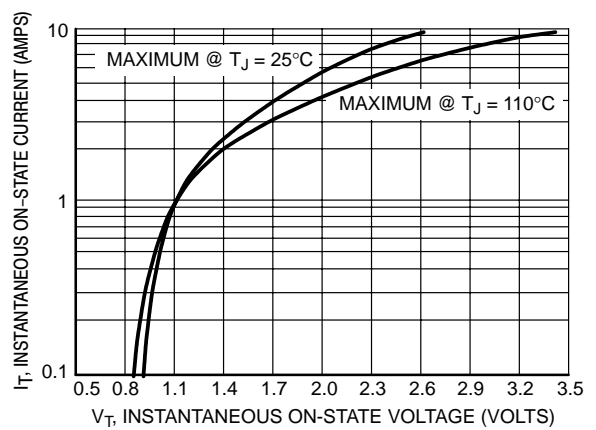


Figure 6. Typical On-State Characteristics