

**Sensitive Gate  
Silicon Controlled Rectifiers  
Reverse Blocking Thyristors**

SCRs  
0.8 AMPERES RMS  
400 VOLTS

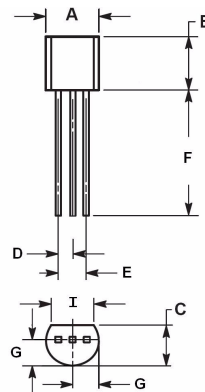
**FEATURES**

- Sensitive Gate Allows Triggering by Microcontrollers and Other logic Circuits
- Blocking Voltage to 400 Volts
- On - State Current Rating of 0.8 Amperes RMS at 80°C
- High Surge Current Capability — 10 Amperes
- Minimum and Maximum Values of IGT, VGT and IH Specified for Ease of Design
- Immunity to dV/dt — 20 V/us Minimum at Tj=110°C
- Glass-Passivated Surface for Reliability and Uniformity
- Pb-Free Package

**MECHANICAL DATA**

- Case: Molded plastic
- Weight: 0.007 ounces, 0.2 grams

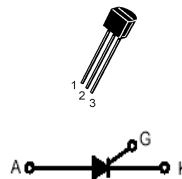
**TO-92 (TO-226AA)**



TO-92		
DIM.	MIN.	MAX.
A	4.45	4.70
B	4.32	5.33
C	3.18	4.19
D	1.15	1.39
E	2.42	2.66
F	12.7	----
G	2.04	2.66
I	3.43	----

All Dimensions in millimeter

PIN ASSIGNMENT	
1	Cathode
2	Gate
3	Anode



**MAXIMUM RATINGS (Tj= 25°C unless otherwise noticed)**

Rating	Symbol	Value	Unit
Peak Repetitive Off - State Voltage (Tj= -40 to 110°C, Sine Wave, 50 to 60 Hz; Gate Open)	VDRM VRRM	400	Volts
On-State RMS Current (Tc = 80°C) 180° Conduction Angles	IT(RMS)	0.8	Amps
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave, 60 Hz, Tj = 25°C)	ITSM	10	Amps
Circuit Fusing Consideration (t = 8.3 ms)	I <sup>2</sup> t	0.415	A <sup>2</sup> s
Forward Peak Gate Power (Ta = 25°C, Pulse Width ≤ 1.0 us)	PGM	0.1	Watts
Forward Average Gate Power (Ta = 25°C, t = 8.3 ms)	PG(AV)	0.1	Watts
Forward Peak Gate Current (Ta = 25°C, Pulse Width ≤ 1.0 us)	IGM	1	Amps
Reverse Peak Gate Voltage (Ta = 25°C, Pulse Width ≤ 1.0 ms)	VGRM	5	Volts
Operating Junction Temperature Range @ Rate VRRM and VDRM	Tj	-40 to + 110	°C
Storage Temperature Range	Tstg	-40 to + 150	°C

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Value	Unit
Thermal Resistance – Junction to Case	RthJC	75	°C/W
Maximum Lead Temperature for Soldering Purposes 1/16" from Case for 10 Seconds	TL	260	°C

**ELECTRICAL CHARACTERISTICS (Tj= 25°C unless otherwise noticed)**

Characteristic	Symbol	Min	Typ	Max	Unit
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**OFF CHARACTERISTICS**

Peak Repetitive Forward or Reverse Blocking Current (VD=Rated VDRM and VRRM; RGK =1K Ohms)	TJ=25°C	IDRM	---	---	10	uA
	TJ=110°C	IRRM	---	---	100	

**ON CHARACTERISTICS**

Peak Forward On-State Voltage (ITM= ± 1.6A Peak, Pulse Width ≤ 1.0ms, Duty Cycle ≤ 1%)		VTM	---	---	1.7	Volts
Gate Trigger Current(VD= 7.0 Vdc, RL=100 Ohms) (1)		IGT	---	---	50	uA
Holding Current(VD= 7.0 Vdc, Initiating Current = 20mA)	TJ= 25°C	IH	---	---	5	mA
	TJ= -40°C		---	---	10	
Gate Trigger Voltage(VD= 7.0 Vdc, RL=100 Ohms) (1)	TJ= 25°C	VGT	---	---	0.8	Volts
	TJ= -40°C		---	---	1.2	
Latch Current(VD= 7.0 Vdc, RL 100 Ohms)	TJ= 25°C	IL	---	---	10	mA
	TJ= -40°C		---	---	15	

**DYNAMIC CHARACTERISTICS**

Critical Rate of Rise of Off-State Voltage (VD=Rated VDRM, Exponential Waveform, PGK=1K Ohms, TJ=110°C)	dv/dt	20	---	---	V/us
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(1) RGK current is not included in measurement

### Voltage Current Characteristic of SCR

Symbol	Parameter
$V_{DRM}$	Peak Repetitive Off State Forward Voltage
$I_{DRM}$	Peak Forward Blocking Current
$V_{RRM}$	Peak Repetitive Off State Reverse Voltage
$I_{RRM}$	Peak Reverse Blocking Current
$V_{TM}$	Peak on State Voltage
$I_H$	Holding Current

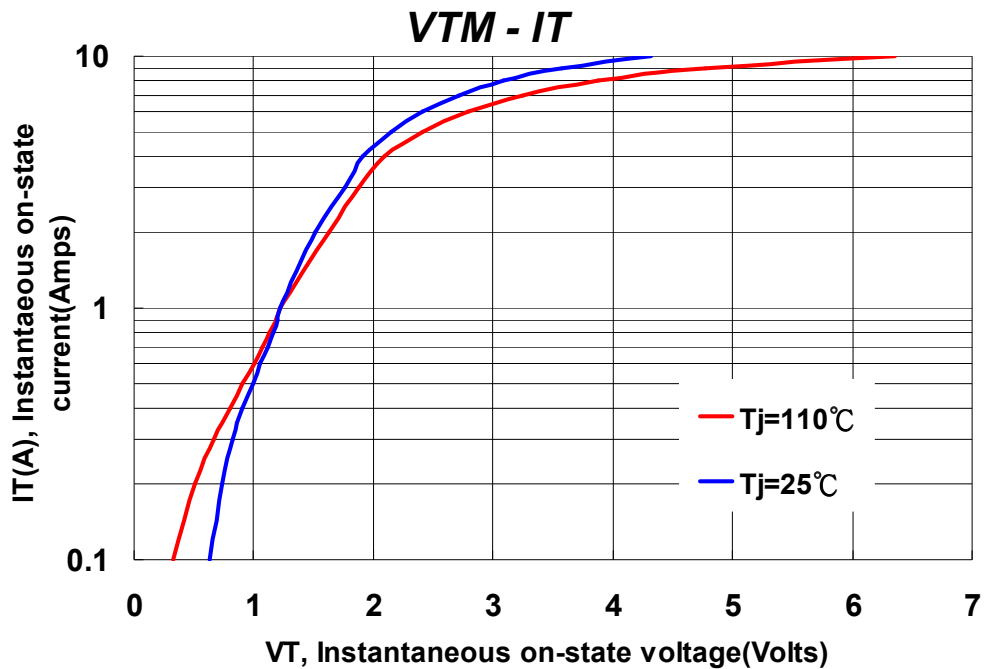
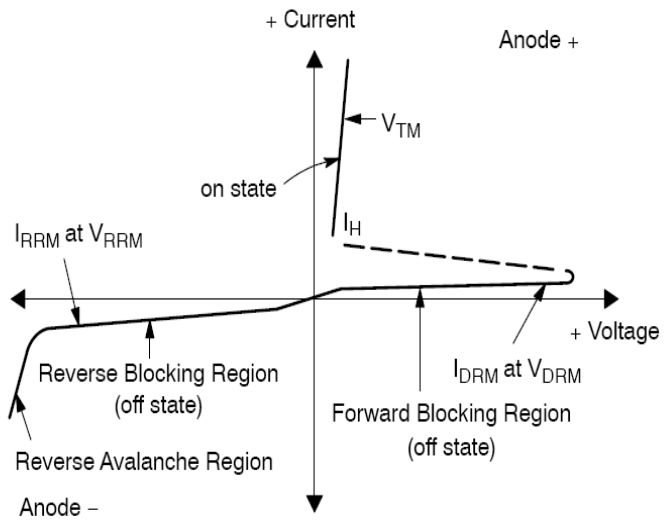


Figure 1. On-State Characteristics

Typical gate trigger current V.S. junction temperature

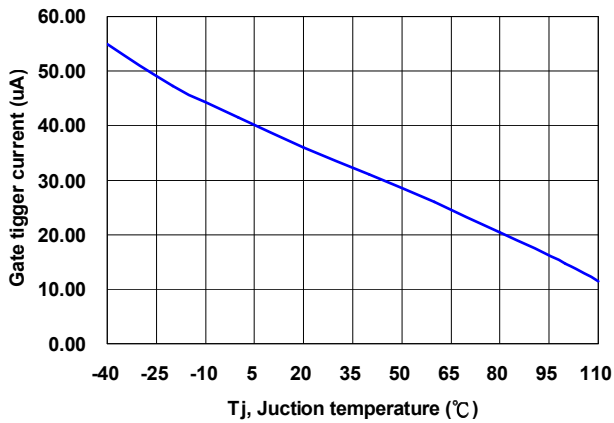


Figure 2. IGT(T<sub>J</sub>) / IGT(25°C) versus T<sub>J</sub>

Typical gate trigger voltage V.S. junction temperature

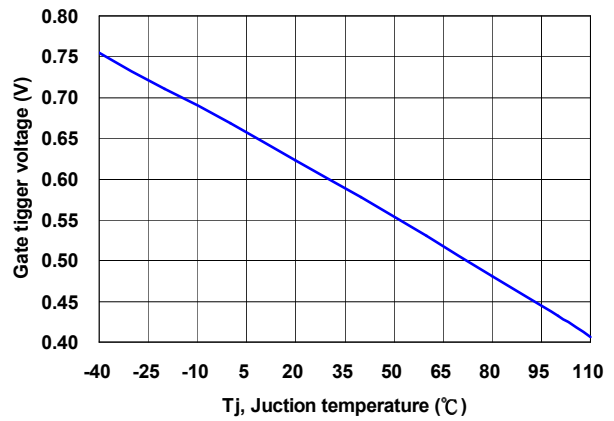


Figure 3. VGT(T<sub>J</sub>) / VGT(25°C) versus T<sub>J</sub>

Typical holding current V.S. junction temperature

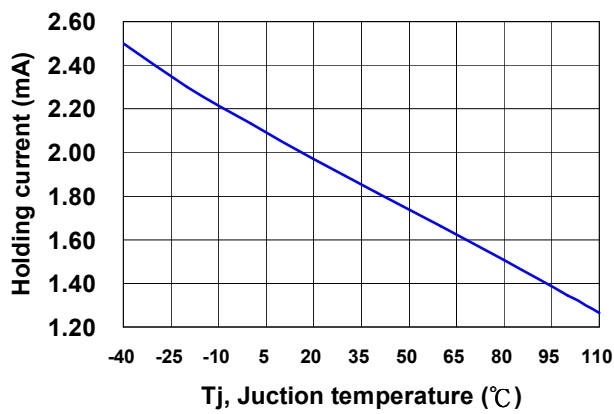


Figure 4. I<sub>H</sub> versus T<sub>J</sub>

Typical latch current V.S. junction temperature

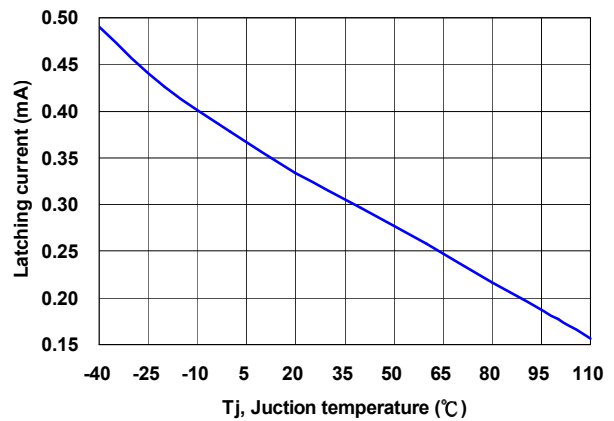


Figure 5. I<sub>L</sub> versus T<sub>J</sub>

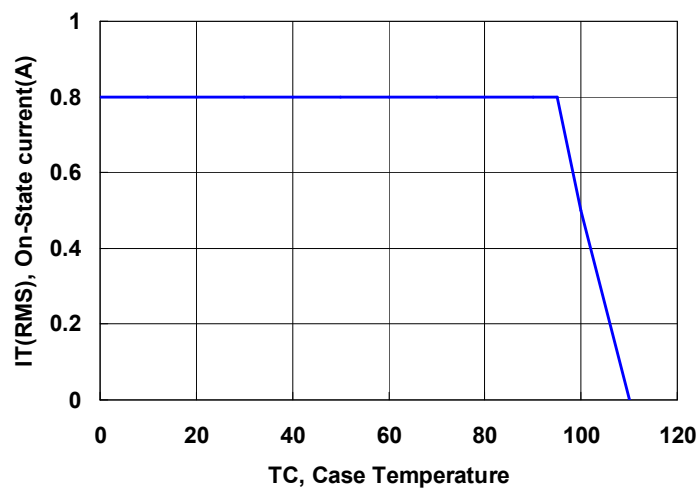


Figure 6. On-Stage Current Rating Curve

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