

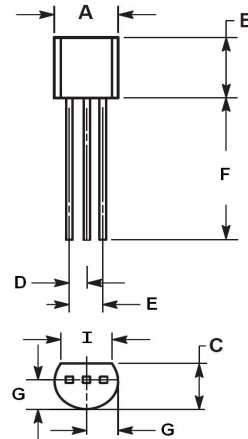
**Sensitive Gate
Silicon Controlled Rectifiers
Reverse Blocking Thyristors**

**SCRs
0.8 AMPERES RMS
600 VOLTS**

FEATURES

- Sensitive Gate Allows Triggering by Microcontrollers and Other Logic Circuits
- Blocking Voltage to 600 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

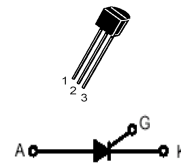
TO-92 (TO-226AA)



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) S08U25-600A S08U50-600A S08M02-600A	V _{DRM} , V _{VRRM}	600	Volts
On-State RMS Current (T _C = 80°C) 180° Conduction Angles	I _{T(RMS)}	0.8	Amp
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave, 60 Hz, Tj = 25°C)	I _{TSM}	10	Amps
Circuit Fusing Consideration (t = 8.3 ms)	$\frac{I^2}{t}$	0.415	A ² s
Forward Peak Gate Power (T _A = 25°C, Pulse Width ≤ 1.0 us)	P _{GM}	0.1	Watt
Forward Average Gate Power (T _A = 25°C, t = 8.3 ms)	P _{G(AV)}	0.01	Watt
Forward Peak Gate Current (T _A = 25°C, Pulse Width ≤ 1.0 us)	I _{GM}	1.0	Amp
Reverse Peak Gate Voltage (T _A = 25°C, Pulse Width ≤ 1.0 ms)	V _{G(RM)}	5	Volts
Operating Junction Temperature Range @ Rate V _{VRRM} and V _{DRM}	T _J	-40 to +110	°C
Storage Temperature Range	T _{stg}	-40 to +150	°C

Notice: (1) V_{DRM} and V_{VRRM} for all types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; 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

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance - Junction to Case - Junction to Ambient	RthJC RthJA	75 150	°C/W
Maximum Lead Temperature for Soldering Purposes 1/16" from Case for 10 Seconds	TL	260	°C

ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Peak Repetitive Forward or Reverse Blocking Current (V _D =Rated V _{DRM} and V _{RRM} ; R _{GK} =1K Ohms)	T _J =25°C	I _{DRM}	---	---	10	uA
	T _J =110°C	I _{RRM}	---	---	100	

ON CHARACTERISTICS

Peak Forward On-State Voltage (I _{TM} = ± 1.6A Peak, Pulse Width ≤ 1.0ms, Duty Cycle ≤ 1%)		V _{TM}	---	---	1.7	Volts	
Gate Trigger Current(V _D = 7.0 Vdc, R _L =100 Ohms) (1)		I _{GT}	S08U25	---	---	25	uA
			S08U50	---	---	50	
			S08M02	---	---	200	
Holding Current(V _D = 7.0 Vdc, Initiating Current = 20mA)	T _J =25°C	I _H	---	---	5	mA	
	T _J =-40°C		---	---	10		
Gate Trigger Voltage(V _D = 7.0 Vdc, R _L =100 Ohms) (1)	T _J =25°C	V _{GT}	---	---	0.8	Volts	
	T _J =-40°C		---	---	1.2		
Latch Current(V _D = 7.0 Vdc, R _L 100 Ohms)	T _J =25°C	I _L	---	---	10	mA	
	T _J =-40°C		---	---	15		

DYNAMIC CHARACTERISTICS

Critical Rate of Rise of Off-State Voltage (V _D =Rated V _{DRM} , Exponential Waveform, P _{GK} =1K Ohms, T _J =110°C)	dv/dt	20	---	---	V/us
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(1) R_{GK} current is not included in measurement

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

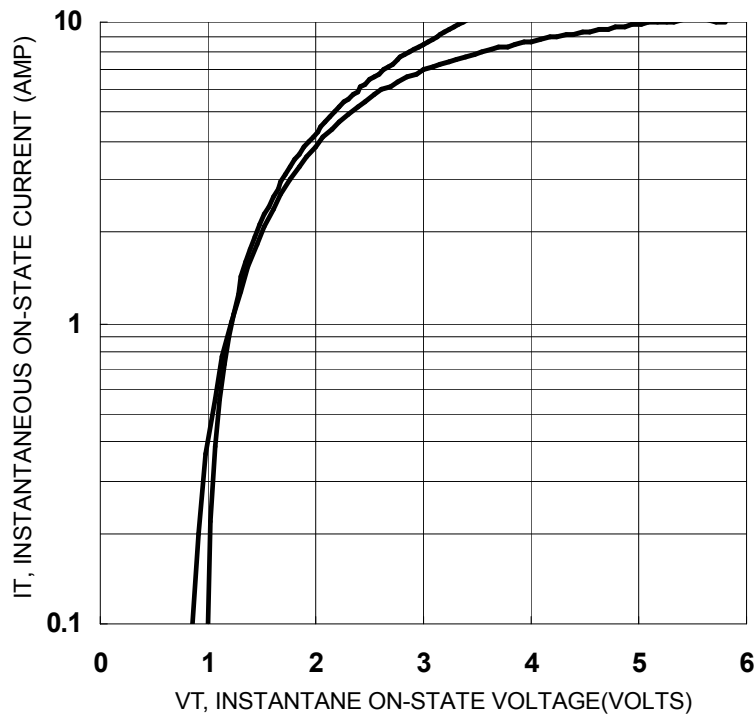
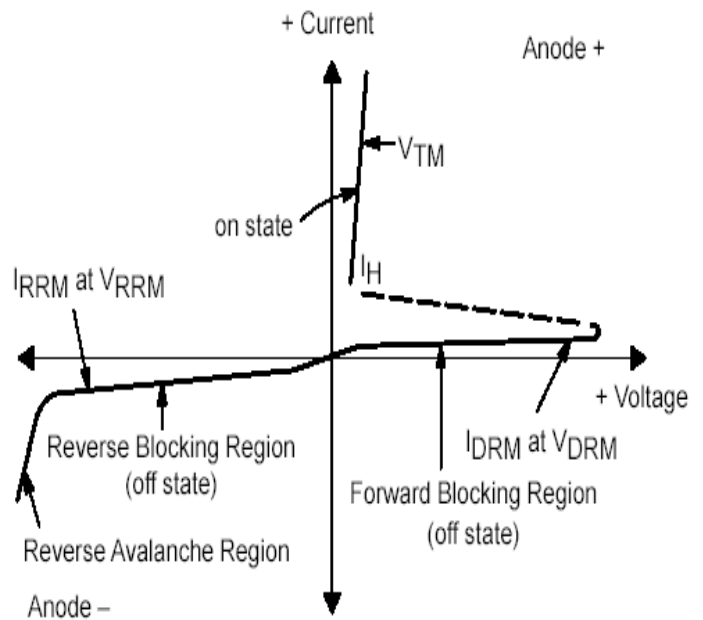


Figure 1. On-State Characteristics

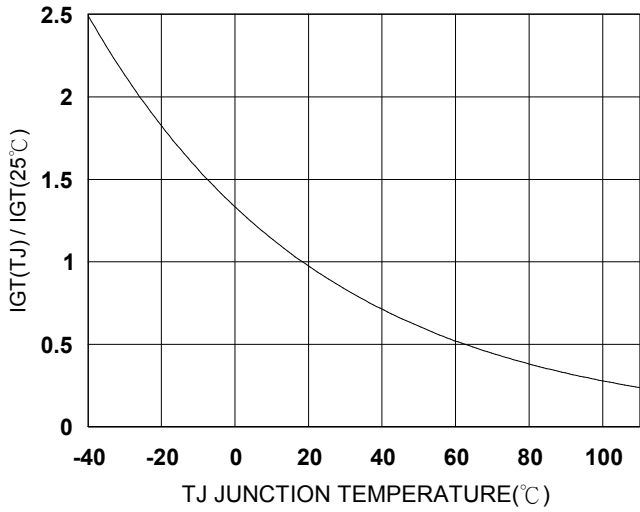


Figure 2. IGT(TJ) / IGT(25°C) versus TJ

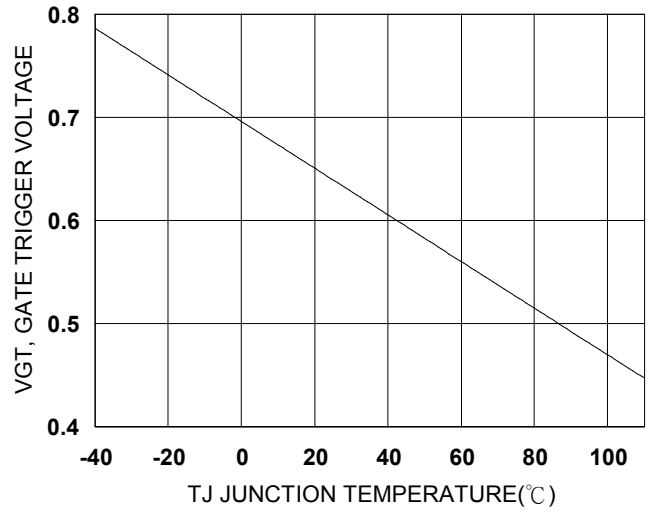


Figure 3. Typical IGT versus TJ

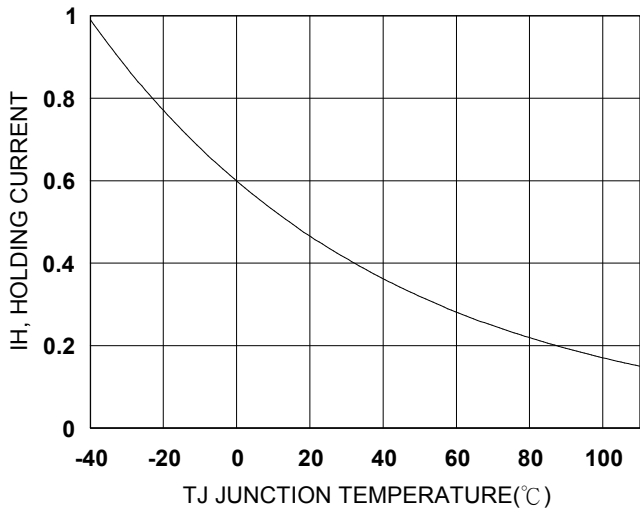


Figure 4. Typical IGT versus TJ

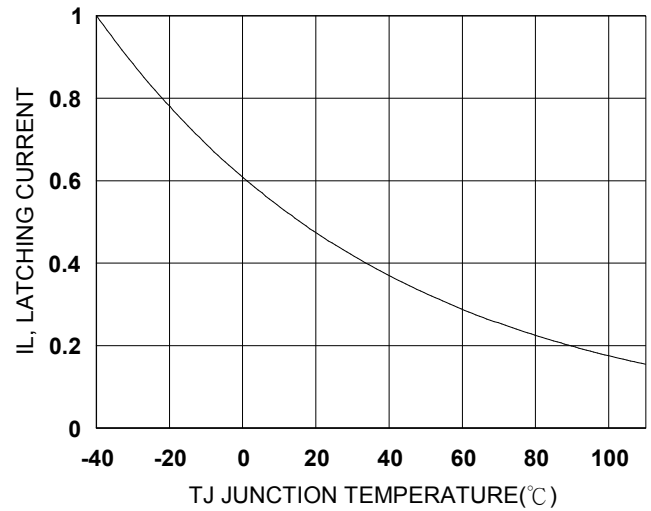


Figure 5. Typical IGT versus TJ

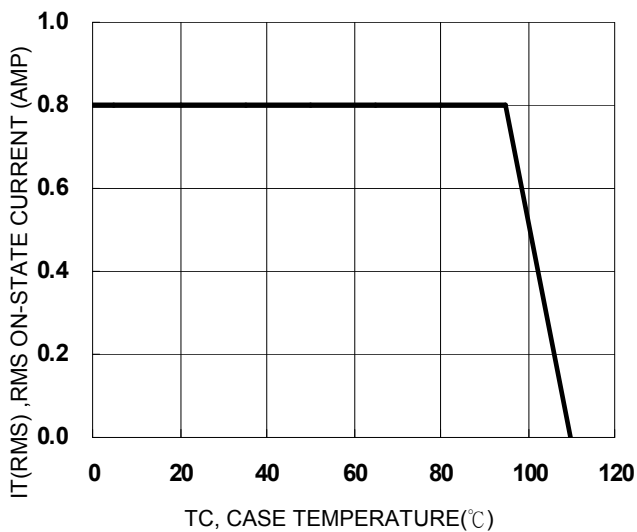


Figure 6. On-State Current Derating Curve

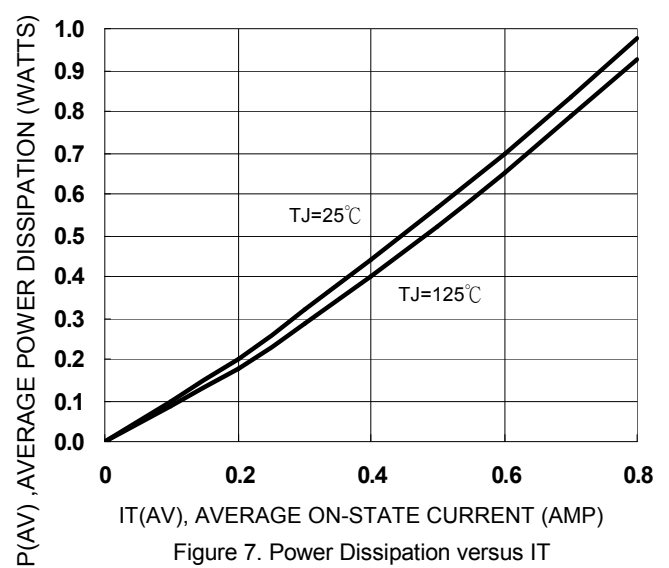


Figure 7. Power Dissipation versus IT

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