

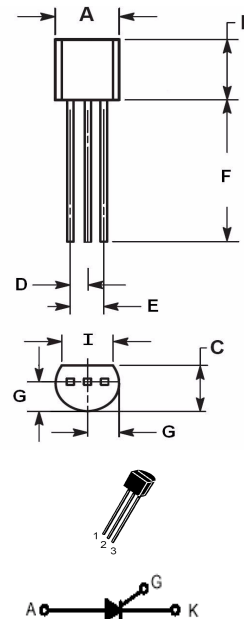
**Sensitive Gate
Silicon Controlled Rectifiers
Reverse Blocking Thyristors**

**SCRs
1 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/msec Minimum at 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	Gate
2	Anode
3	Cathode

MAXIMUM RATINGS (T_J= 25°C unless otherwise noticed)

Rating	Symbol	Value	Unit
Peak Repetitive Off- State Voltage (T _J = -40 to 110°C, Sine Wave, 50 to 60 Hz; Gate Open)	V _{DRM} , V _{RRM}	600	Volts
On-State RMS Current (T _C = 80°C) 180° Conduction Angles	I _{T(RMS)}	1.0	Amp
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave, 60 Hz, T _J = 25°C)	I _{TSM}	10	Amps
Circuit Fusing Consideration (t = 8.3 ms)	I t	0.415	A s
Forward Peak Gate Power (T _A = 25°C, Pulse Width ≤ 1.0 us)	P _{GM} ₂	0.1	Watt ₂
Forward Average Gate Power (T _A = 25°C, t = 8.3 ms)	P _{G(AV)}	0.1	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 _{GRM}	5	Volts
Operating Junction Temperature Range @ Rate V _{RRM} and V _{DRM}	T _J	-40 to +110	°C
Storage Temperature Range	T _{stg}	-40 to +150	°C

Notice: (1) V_{DRM} and V_{RRM} 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

Rev.2, Oct-2010, KTXD15

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance - Junction to Case - Junction to Ambient	R _{thJC} R _{thJA}	75 150	°C/W
Maximum Lead Temperature for Soldering Purposes 1/16" from Case for 10 Seconds	TL	260	°C

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

Characteristics	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

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

Peak Forward On-State Voltage @T _A =25°C (I _{TM} =± 1.0A Peak, Pulse Width ≤ 1.0 ms, Duty Cycle ≤ 1%)		V _{TM}	----	----	1.7	Volts
Gate Trigger Current (V _{AK} = 7.0 Vdc; R _L = 100 Ohms)	T _C =25°C	I _{GT}	----	20	50	uA
Holding Current (V _{AK} = 7.0 V, Initiating Current = 20 mA)	T _C =25°C T _C =-40°C	I _H	----	0.5 ----	1.0 10	mA
Latch Current (V _{AK} =7.0 V, I _g = 200 uA)	T _C =25°C T _C =-40°C	I _L	----	0.6 ----	10 15	mA
Gate Trigger Voltage (V _D = 7.0 Vdc; R _L =100 Ohms)	T _C = 25°C T _C =-40°C	V _{GT}	----	0.62 -----	0.8 1.2	Volts

DYNAMIC CHARACTERISTICS

Critical Rate of Rise of Off-State Voltage (V _D =Rated V _{DRM} , Exponential Waveform, R _{GK} =1K Ohms, T _J =110°C)	dv/dt	20	35	----	V/us
Repetitive Critical Rate of Rise of On-State Current I _{PK} =20A, P _w =10 usec, diG/dt=1A/usec, I _{gt} =20mA	di/dt	----	----	50	A/us

(1) R_{GK} = 1000 Ohms included in measurement

(2) Does not include R_{GK} in measure

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

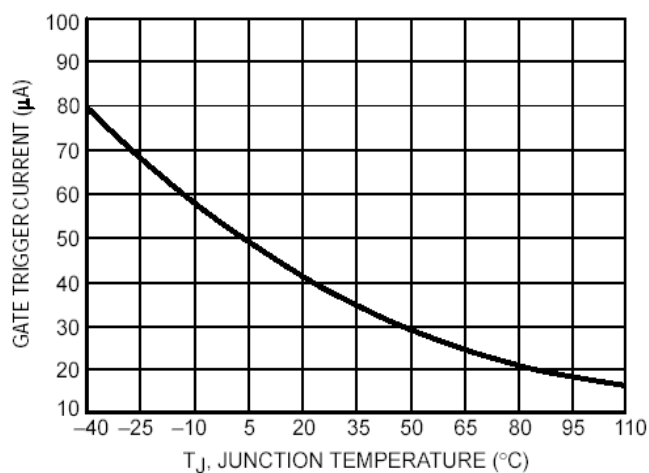
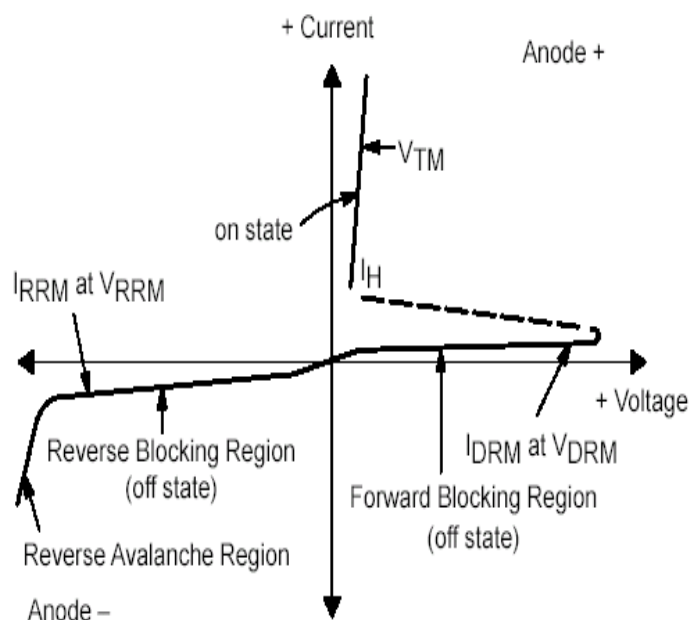


Figure 1. Typical Gate Trigger Current versus Junction Temperature

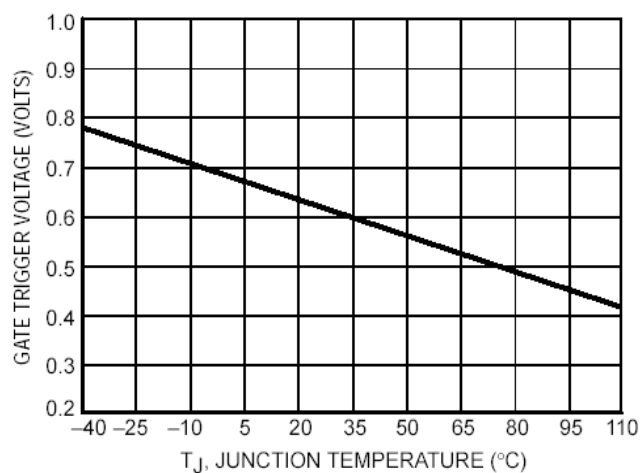


Figure 2. Typical Gate Trigger Voltage versus Junction Temperature

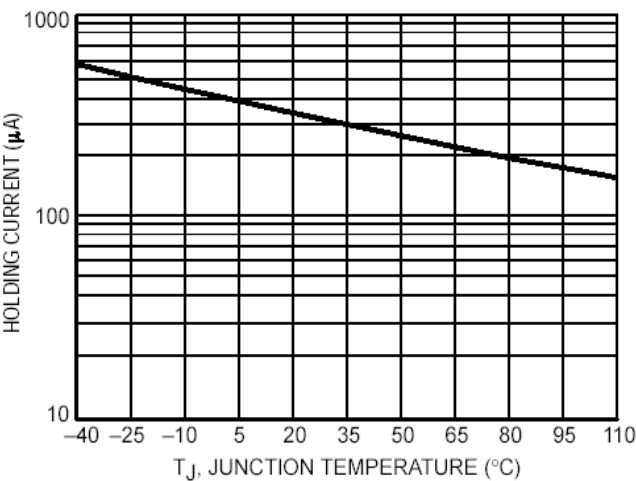


Figure 3. Typical Holding Current versus Junction Temperature

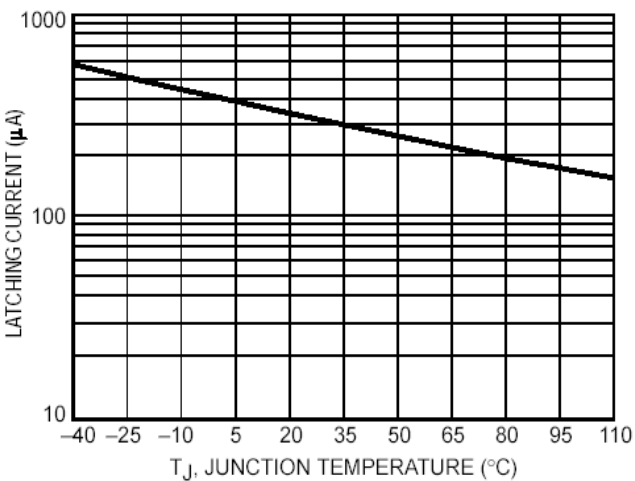


Figure 4. Typical Latching Current versus Junction Temperature

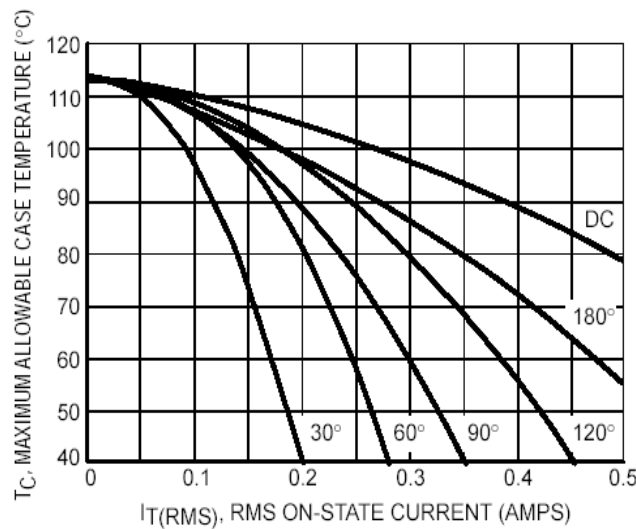


Figure 5. Typical RMS Current Derating

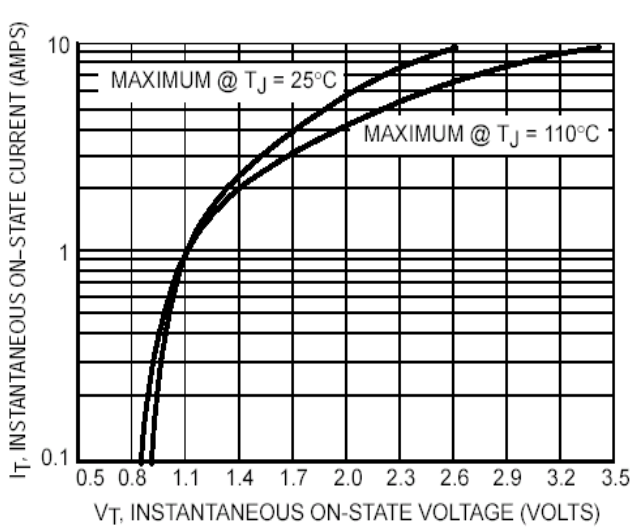


Figure 6. Typical On-State Characteristics

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