

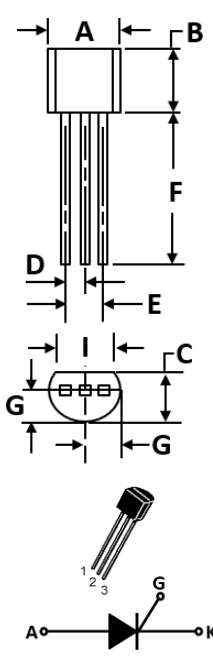
S08xxA SERIES(LS)

Sensitive Gate Silicon Controlled Rectifiers Reverse Blocking Thyristors	SCRs 0.8 AMPERES RMA 600 VOLTS
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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 T_J=110°C
- Glass-Passivated Surface for Reliability and Uniformity
- Pb-Free Package
- TO-92
 - Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Available in "Green" Package: TO-92
 - Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
 - Halogen and Antimony Free. "Green" Device (Note 3)

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	--

PIN ASSIGNMENT	
1	Cathode
2	Gate
3	Anode

All Dimensions in millimeter

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
Ratings at 25°C ambient temperature unless otherwise specified.

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Peak Repetitive Off- State Voltage (T _J = -40 to 110°C, Sine Wave, 50 to 60 Hz; Gate Open) S08U25600A S08U50600A S08M02600A	V _{DMS} V _{RRM}	600	V
On-State RMS Current (T _C = 80°C) 180° Conduction Angles	I _{T(RMS)}	0.8	A
Peak Non-Repetitive Surge Current (1/2 Cycle, Sine Wave, 60 Hz, T _J = 25°C)	I _{TSM}	10	A
Circuit Fusing Consideration (t = 8.3 ms)	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	W
Forward Average Gate Power (T _A = 25°C, t = 8.3 ms)	P _{GM(AV)}	0.01	W
Forward Peak Gate Current (T _A = 25°C, Pulse Width ≤ 1.0 us)	I _{GM}	1.0	A
Reverse Peak Gate Voltage (T _A = 25°C, Pulse Width ≤ 1.0 ms)	V _{GRM}	5	V
Operating temperature range @ Rate V _{RRM} and V _{DRM}	T _J	-40 to +110	°C
Storage temperature range	T _{STG}	-40 to +150	°C

Note :

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. 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.

RATING AND CHARACTERISTIC CURVES
S08xxA SERIES

THERMAL CHARACTERISTICS

CHARACTERISTICS	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	T _L	260	°C

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

OFF CHARACTERISTICS

CHARACTERISTICS	SYMBOL	MAX	UNIT
Peak Repetitive Forward or Reverse Blocking Current (V _D =Rated V _{DRM} and V _{RRM} ; RGK =1K Ohms)	I _{DRM} I _{RRM}	10 100	μA
Maximum Lead Temperature for Soldering Purposes 1/16" from Case for 10 Seconds	T _L	260	°C

ON CHARACTERISTICS

CHARACTERISTICS	SYMBOL	MAX	UNIT
Peak Forward On-State Voltage (I _{TM} = ± 1.6A Peak, Pulse Width ≤ 1.0ms, Duty Cycle ≤ 1%)	V _{TM}	1.7	V
Gate Trigger Current(V _D = 7.0 Vdc,RL=100 Ohms) (1)	I _{GT}	25 50 200	μA
Holding Current(V _D = 7.0 Vdc, Initiating Current = 20mA)	I _H	5 10	mA
Gate Trigger Voltage(V _D = 7.0 Vdc,RL=100 Ohms) (1)	V _{GT}	10 100	V
Latch Current(V _D = 7.0 Vdc, RL 100 Ohms)	I _L	10 100	mA

DANAMIC CHARACTERISTICS

CHARACTERISTICS	SYMBOL	MIN.	UNIT
Critical Rate of Rise of Off-State Voltage (V _D =Rated V _{DRM} , Exponential Waveform, PGK=1K Ohms, T _J =110°C)	dv/dt	20	V/us

(1) RGK current is not included in measurement

**RATING AND CHARACTERISTIC CURVES
S08xxA SERIES**

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

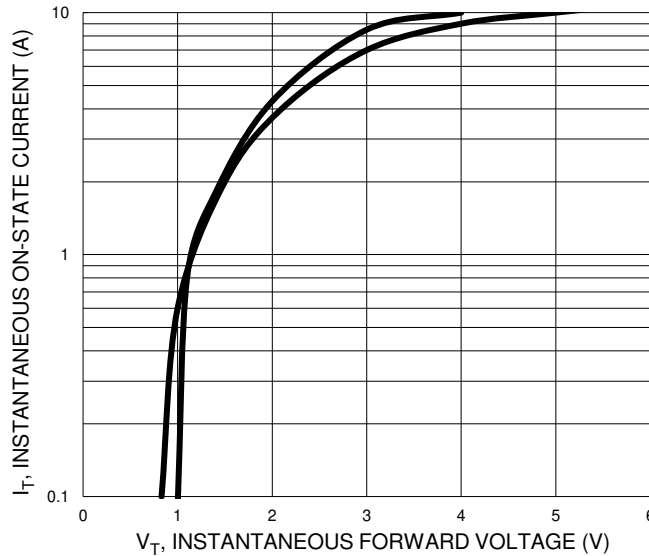
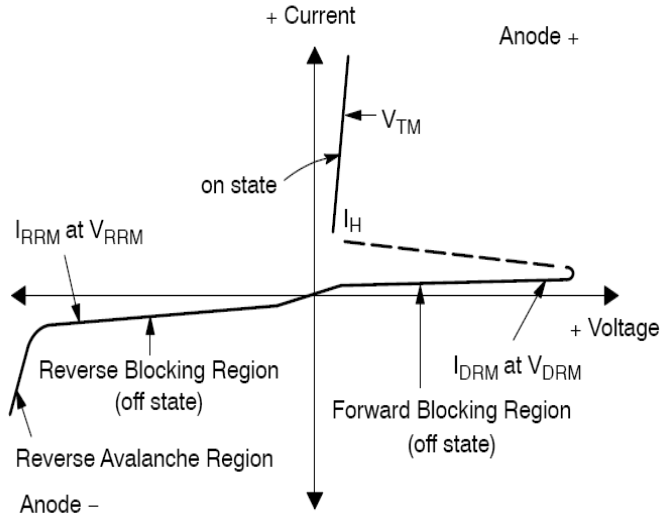
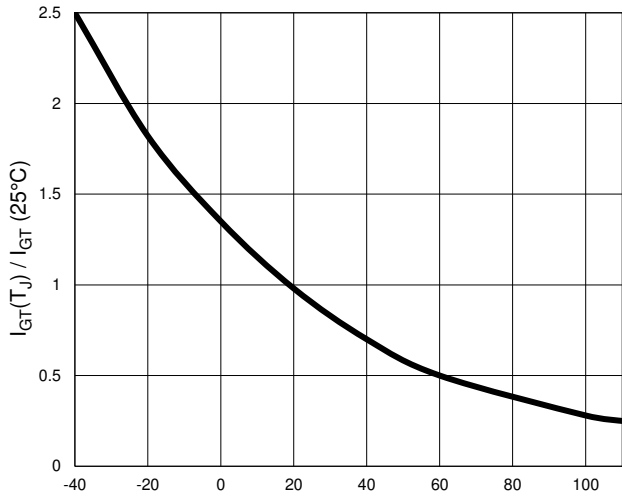


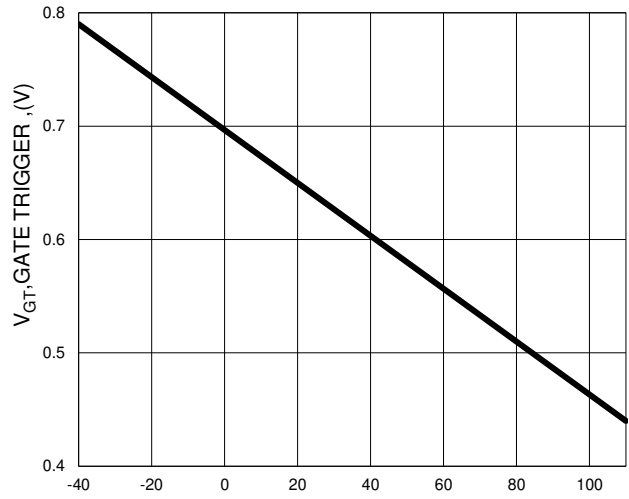
FIG.1- ON-STATE CHARACTERISTICS

**RATING AND CHARACTERISTIC CURVES
S08xxA SERIES**



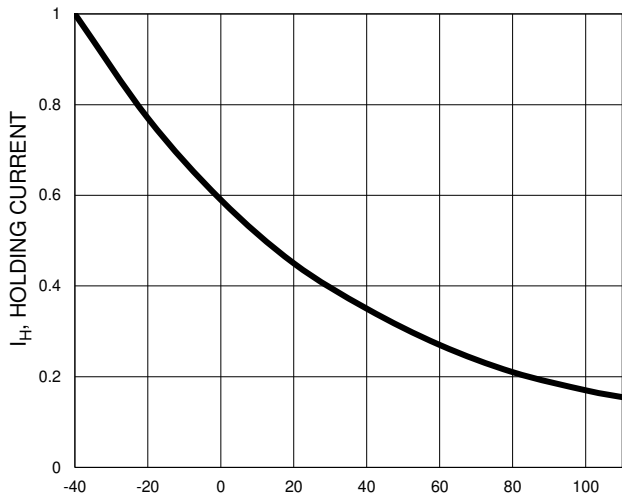
T_J JUNCTION TEMPERATURE, (°C)

FIG. 2- $I_{GT}(T_J) / I_{GT}(25^\circ C)$ VERSUS T_J



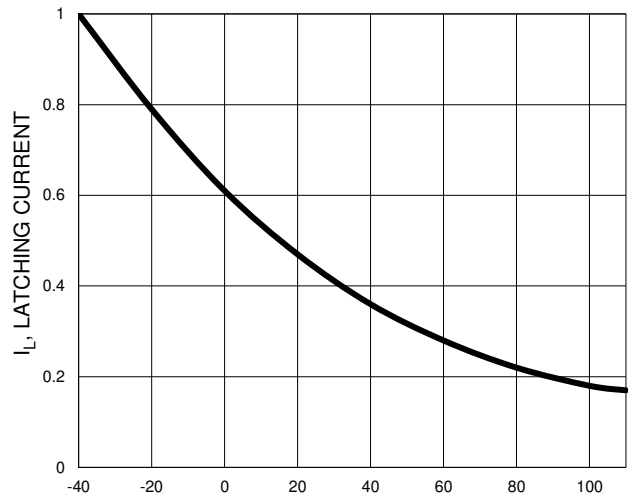
T_J JUNCTION TEMPERATURE, (°C)

FIG. 3- TYPICAL V_{GT} VERSUS T_J



T_J JUNCTION TEMPERATURE, (°C)

FIG. 4- TYPICAL I_H VERSUS T_J



T_J JUNCTION TEMPERATURE, (°C)

FIG. 5- TYPICAL I_L VERSUS T_J

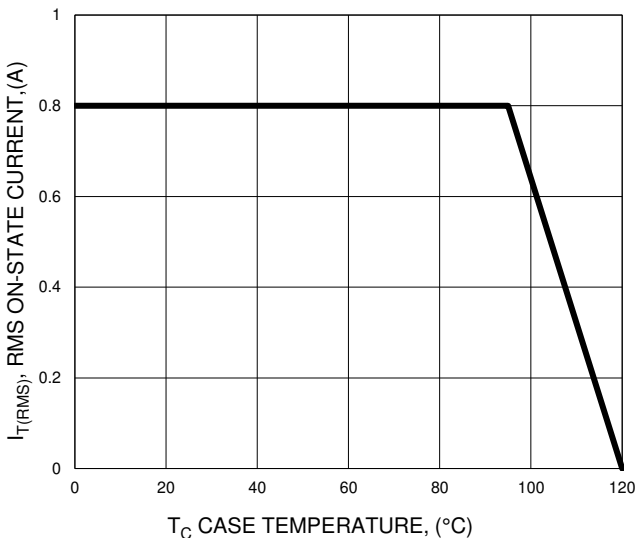


FIG. 6- ON-STATE CURRENT DERATING CURVE

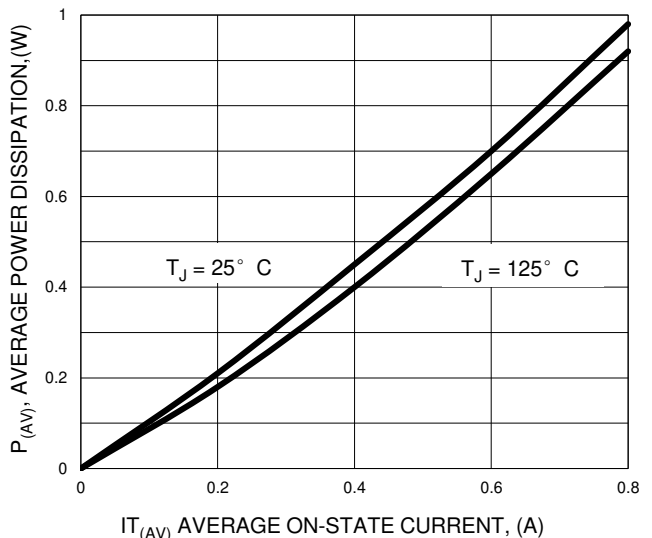


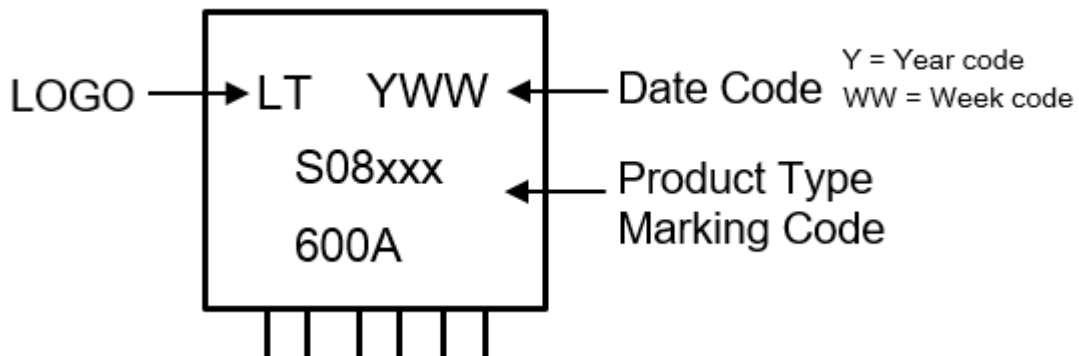
FIG. 7- POWER DISSIPATION VERSUS I_T

Ordering Information :



Part Number	Package	Packing	
		Qty.	Carrier
S08U50600A	TO-92	2000pcs	Reel
S08M02600A	TO-92	2000pcs	Reel
S08M02600A-BU	TO-92	1000pcs	Bulk
S08M02600A_HF	TO-92	2000pcs	Reel

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