S08xxA SERIES(LS)

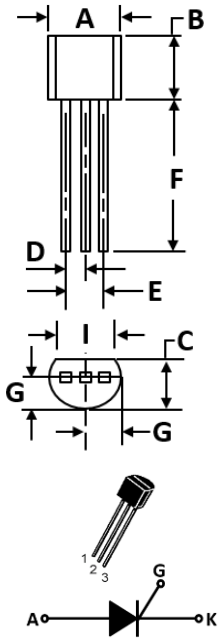
SENSITIVE GATE SILICON CONTROLLED RECTIFIERS REVERSE BLOCKING THYRISTORS

SCRs
0.8 AMPERES RMA 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 — 20V/μs 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	--
All Dimensions in millimeter		

PIN ASSIGNMENT	
1	Cathode
2	Gate
3	Anode

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, 60Hz, T_J = +25°C)	I_{TSM}	10	A
Circuit Fusing Consideration (t = 8.3ms)	I^2t	0.415	A^2s
Forward Peak Gate Power (T_A = +25°C, Pulse Width 1.0μs)	P_{GM}	0.1	W
Forward Average Gate Power (T_A = +25°C, t = 8.3ms)	$P_{GM(AV)}$	0.01	W
Forward Peak Gate Current (T_A = +25°C, Pulse Width ≦ 1.0μs)	I_{GM}	1.0	A
Reverse Peak Gate Voltage (T_A = +25°C, Pulse Width ≦ 1.0ms)	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

Notes :

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 (VD = Rated VDRM and VRRM; RGK =1k Ohms)	T_J = +25℃ T_J = +110℃	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 (ITM = ± 1.6A Peak, Pulse Width≦1.0ms, Duty Cycle≦1%)		V_{TM}	1.7	V
Gate Trigger Current (VD = 7.0Vdc, RL = 100Ohms) (Note 5)	S08U25600A S08U50600A S08M02600A	I_{GT}	25 50 200	μA
Holding Current (VD = 7.0Vdc, Intitiating Current = 20mA	T_J = +25℃ T_J = -40℃	I_H	5 10	mA
Gate Trigger Voltage (VD = 7.0Vdc, RL = 100Ohms) (Note 5)	T_J = +25℃ T_J = -40℃	V_{GT}	0.8 1.2	V
Latch Current (VD = 7.0Vdc, RL = 100Ohms)	T_J = +25℃ T_J = -40℃	I_L	10 100	mA

DANAMIC CHARACTERISTICS

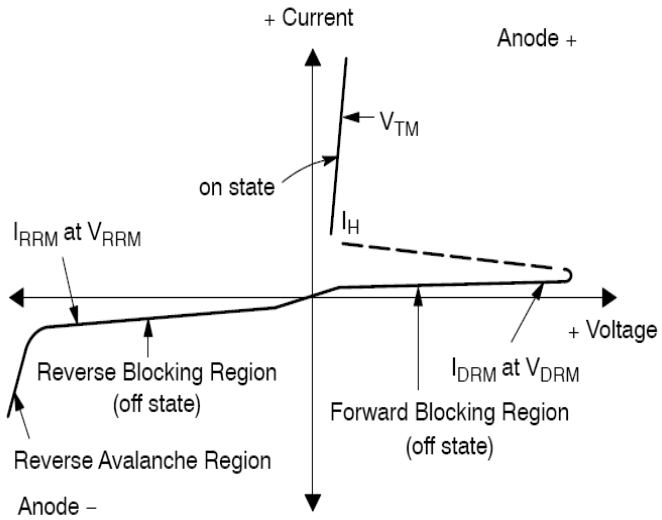
CHARACTERISTICS	SYMBOL	MIN.	UNIT
Critical Rate of Rise of Off-State Voltage (V_D = Rated V_{DRM} , Exponential Waveform, PGK = 1k Ohms, T_J = +110℃)	dv/dt	20	V/μs

Note: 5. 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



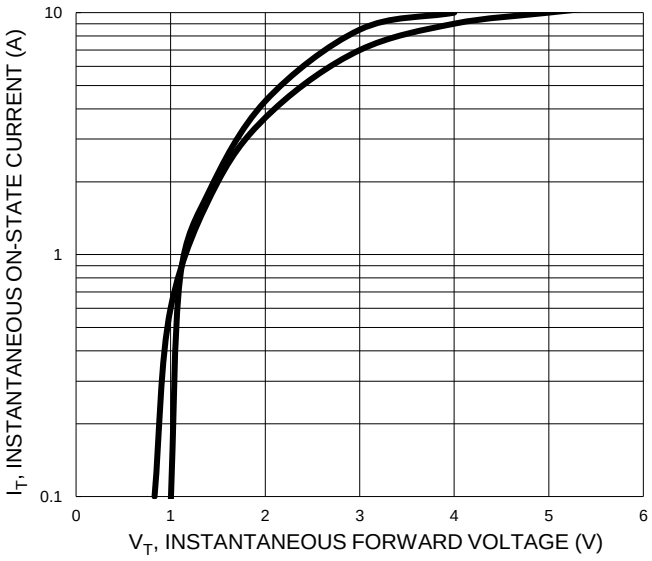


FIG.1- ON-STATE CHARACTERISTICS

RATING AND CHARACTERISTIC CURVES
S08xxA SERIES

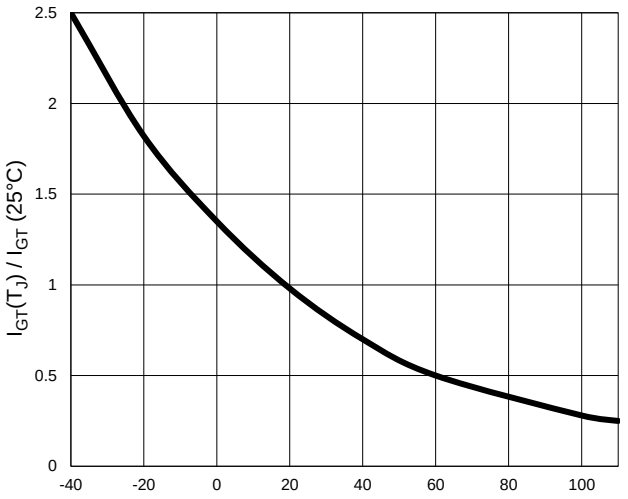


FIG.2- $I_{GT}(TJ) / I_{GT}(25°C)$ VERSUS T_J

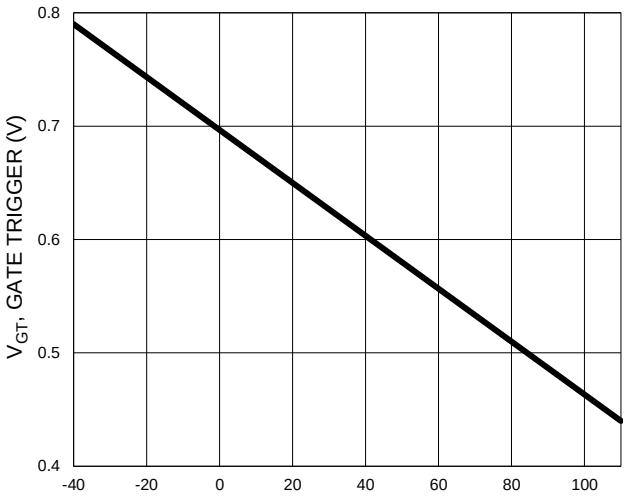


FIG.3- TYPICAL V_{GT} VERSUS T_J

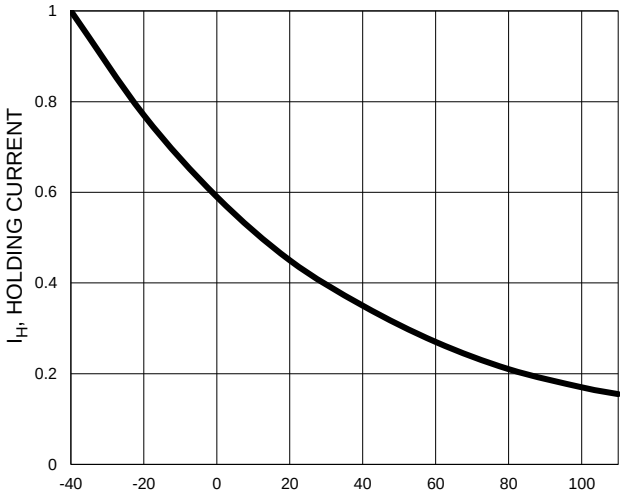


FIG.4- TYPICAL I_H VERSUS T_J

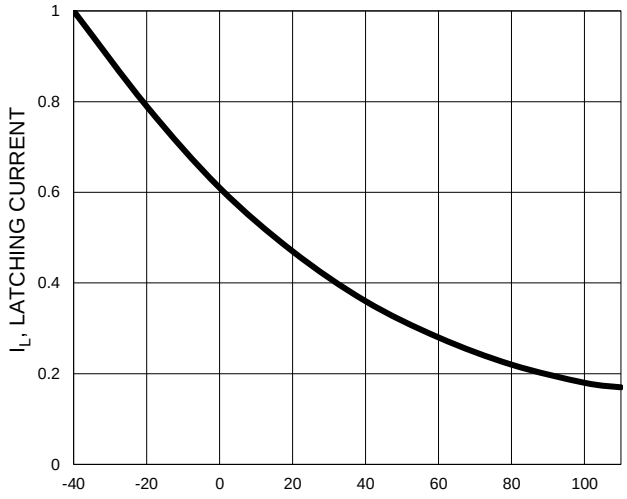


FIG.5- TYPICAL I_L VERSUS T_J

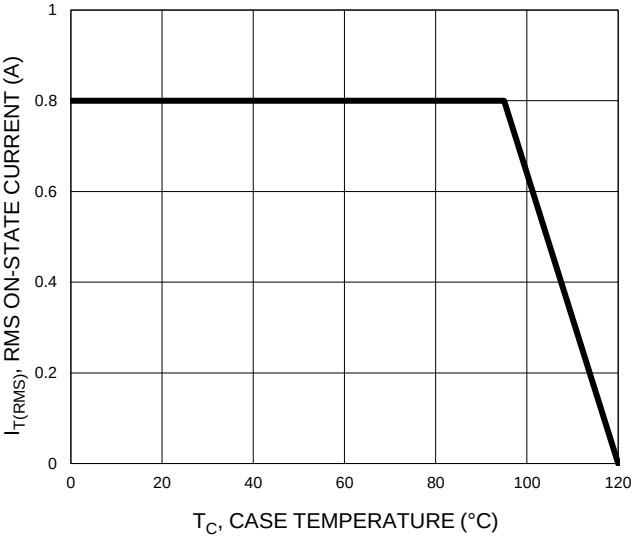


FIG.6- ON-STATE CURRENT DERATING CURVE

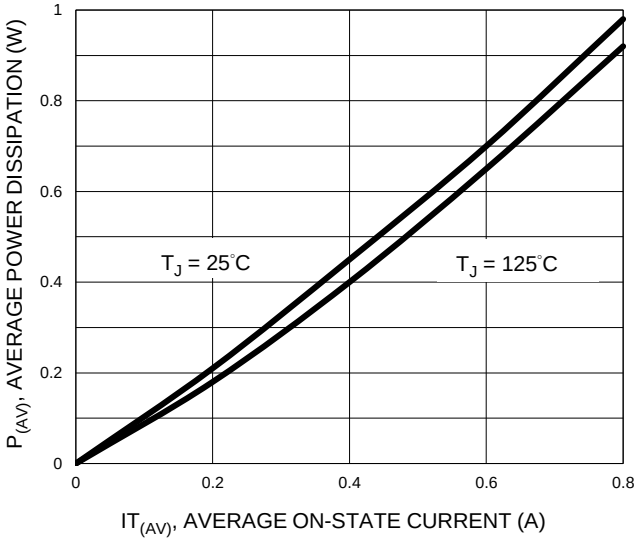
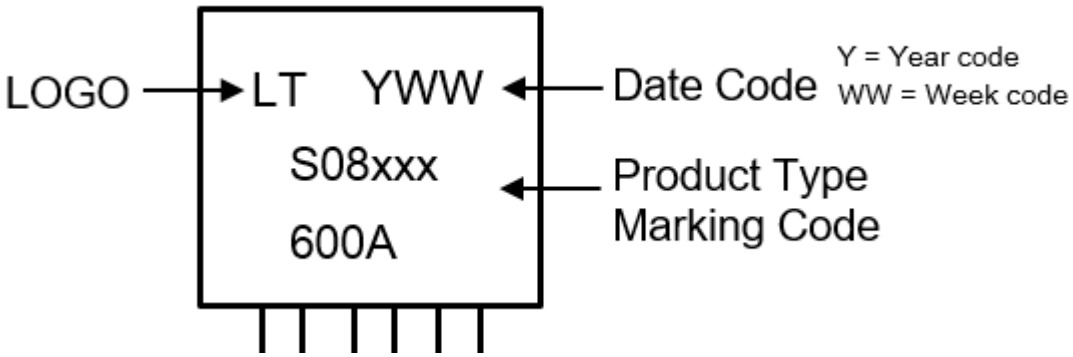


FIG.7- POWER DISSIPATION VERSUS I_T

Ordering Information:

Orderable 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

Marking Information:



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