S2600B, S2600D, S2600M, S2600N

File Number **1693**

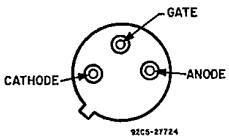
High Voltage, Medium Current Silicon Controlled Rectifiers

For Power Switching, Power Control and Ignition Applications

Features:

- *800V, 125 Deg. C T_J Operating*
- *High dv/dt and di/dt Capability*
- *Low Switching Losses*
- *High Pulse Current Capability*
- *Low Forward and Reverse Leakage*
- *Sipos Oxide Glass Multilayer Passivation System*
- *Advanced Unisurface Construction*
- *Precise Ion Implanted Diffusion Source*

TERMINAL DESIGNATIONS



Low-Profile TO-205

The S2600 series are high voltage, medium current silicon controlled rectifiers designed for switching AC and DC currents. The types within the series differ in their voltage ratings: the voltage ratings are identified by suffix letters in the type designations.

All types utilize the low-profile TO-205 package.

These Thyristors feature an advanced unisurface construction with a multilayer glass passivation system for improved reliability performance at high junction operating temperatures. Their dv/dt, di/dt capability and low switching losses make them suitable for applications such as lighting, power-switching, motor speed control and crowbars.

MAXIMUM RATINGS, *Absolute-Maximum Values:*

	S2600B	S2600D	S2600M	S2600N	
VDRM	200	400	600	800	V
VRRM	200	400	600	800	V
IT (RMS) ($T_C = 65°C$)			7		A
IT (av) ($T_C = 65°C$, $\theta = 180$ Deg.)			4.5		A
ITSM (for 1 full cycle)			100		A
di/dt			200		A/μs
I^2T (at 8.3 ms)			40		A^2s
(at 1.5 ms)			30		A^2s
PGM (for 10μs max.)			15		W
PG (av) (Averaging time 10ms max.)			0.5		W
T Storage			-65 to 150		°C
TJ			-65 to 125		°C

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ELECTRICAL CHARACTERISTICS, at Case Temperature (T_C) = 25°C Unless Otherwise Specified

CHARACTERISTIC	SYMBOL	LIMITS S2600 FAMILY MIN.	TYP.	MAX.	UNITS
Repetitive Peak Forward and Reverse Blocking Current Rated VDRM and VRRM, Gate Open at TC = 125°C	IDROM IRROM	— —	— —	50 2	μA mA
Forward "On State" Voltage ITM = 30A	VTM	—	1.8	2.6	V
Gate Trigger Current (dc) VD = 12 Vdc RL = 30 Ohms	IGT	—	10	15	mA
Gate Trigger Voltage (dc) VD = 12 Vdc, RL = 30 Ohms VD = VDRM, RL = 500 Ohms, TC = 125°C	VGT	— 0.2	1 —	1.5 —	V
Holding Current VD = 12 Vdc, IT (initial) = 200mA	IH	—	15	—	mA
Critical Rate of Rise of Off-State Voltage (Exponential Waveform) TC = 125°C, Gate Open, VD = VDRM S2600B, S2600D S2600M S2600N	dv/dt	— — — —	— 150 125 75	— — — —	V/μS
Turn-On Time IT = 2A, VD = VDRM IG = 80mA	tgt	—	1.2	—	μS
Turn-Off Time VD = VDRM, TC = 75°C, dv/dt = 20V/μS IT = 2A for 50 μS, di/dt = 10A/μS IG = 80mA at Turn-On	tq	—	65	—	μS
Thermal Resistance Junction to Case Junction to Ambient	RθJC RθJA	— —	— —	7 150	°C/W

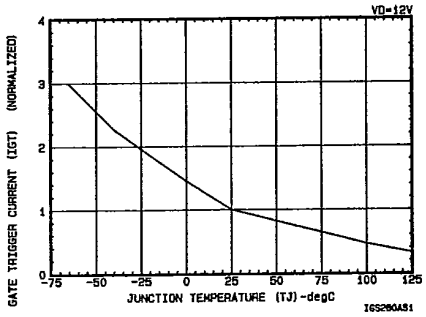

Fig. 1 - Typical Gate Trigger Current Vs. Temperature

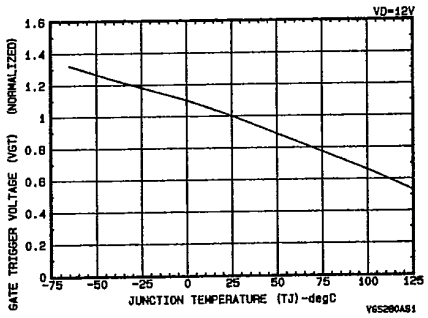

Fig. 2 - Typical Gate Trigger Voltage Vs. Temperature

S2600B, S2600D, S2600M, S2600N

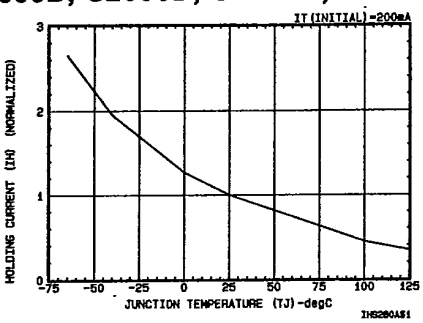

Fig. 3 - Typical Holding Current Vs. Temperature

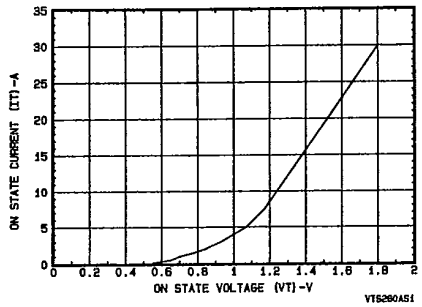

Fig. 4 - Typical On State Voltage Vs. Current

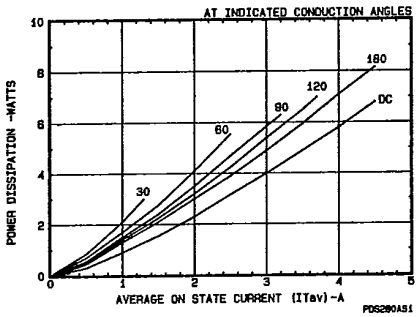

Fig. 5 - Maximum Power Dissipation Vs. Average Current

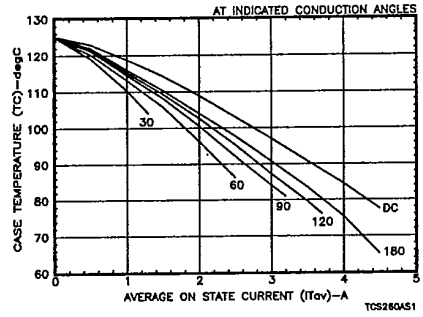

Fig. 6 - Maximum Case Temperature Vs. Average Current

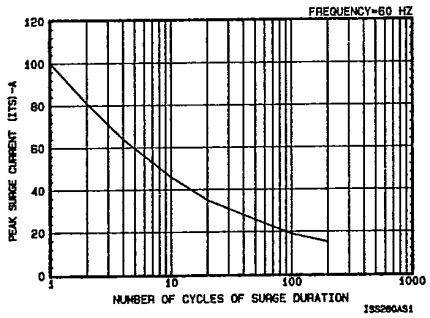

Fig. 7 - Peak Surge Current Vs. Duration

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