

3875081 G E SOLID STATE  
Silicon Controlled Rectifiers

01E 17718 DT-25-13

**S2600B, S2600D, S2600M, S2600N**

File Number **1693**

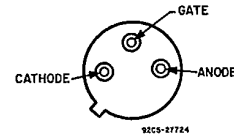
## High Voltage, Medium Current Silicon Controlled Rectifiers

For Power Switching, Power Control and Ignition Applications

**Features:**

- 800V, 125 Deg. C T<sub>J</sub> 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 <sub>C</sub> = 65°C) .....	7			A	
IT (av) (T <sub>C</sub> = 65°C, θ = 180 Deg.) .....	4.5			A	
ITSM (for 1 full cycle) .....	100			A	
di/dt .....	200			A/μs	
I <sup>2</sup> T (at 8.3 ms) .....	40			A <sup>2</sup> s	
(at 1.5 ms) .....	30			A <sup>2</sup> s	
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			UNITS
		S2600 FAMILY			
		MIN.	TYP.	MAX.	
Repetitive Peak Forward and Reverse Blocking Current Rated VDRM and VRRM, Gate Open at $T_C = 125^\circ\text{C}$	IDROM IRROM	—	—	50 2	$\mu\text{A}$ 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, $T_C = 125^\circ\text{C}$	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) $T_C = 125^\circ\text{C}$ , Gate Open, VD = VDRM S2600B, S2600D S2600M S2600N	dv/dt	—	— 150 125 75	—	V/ $\mu\text{S}$
Turn-On Time IT = 2A, VD = VDRM IG = 80mA	tgt	—	1.2	—	$\mu\text{S}$
Turn-Off Time VD = VDRM, $T_C = 75^\circ\text{C}$ , dv/dt = 20V/ $\mu\text{S}$ IT = 2A for 50 $\mu\text{S}$ , di/dt = 10A/ $\mu\text{S}$ IG = 80mA at Turn-On	tq	—	65	—	$\mu\text{S}$
Thermal Resistance Junction to Case Junction to Ambient	R $\theta$ JC R $\theta$ JA	—	—	7 150	$^\circ\text{C}/\text{W}$

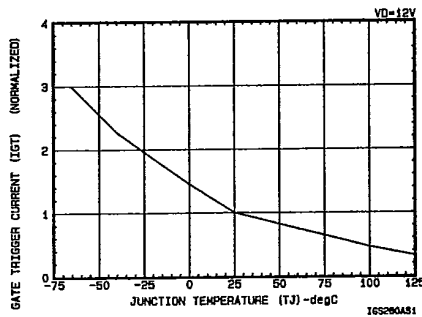


Fig. 1 - Typical Gate Trigger Current Vs. Temperature

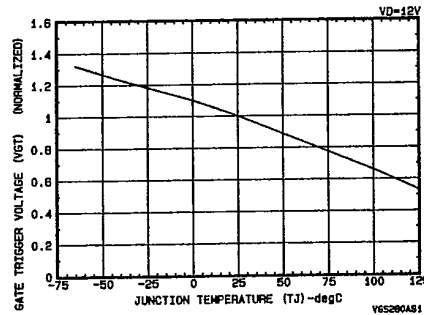


Fig. 2 - Typical Gate Trigger Voltage Vs. Temperature

Silicon Controlled Rectifiers

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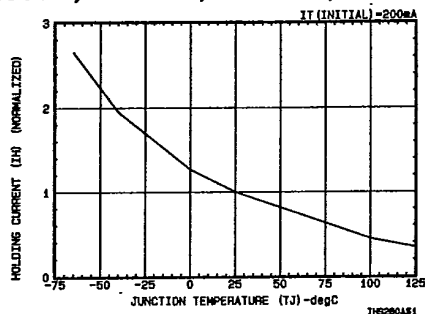


Fig. 3 - Typical Holding Current Vs. Temperature

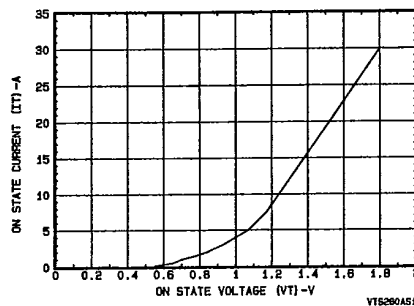


Fig. 4 - Typical On State Voltage Vs. Current

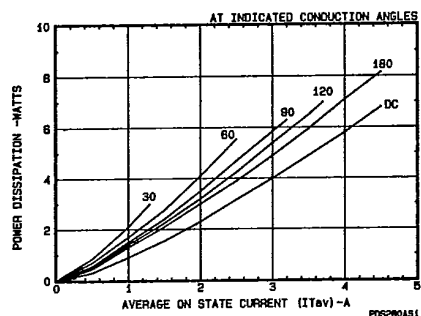


Fig. 5 - Maximum Power Dissipation Vs. Average Current

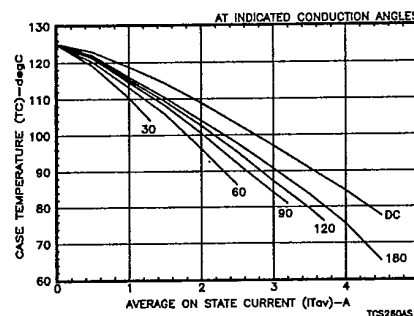


Fig. 6 - Maximum Case Temperature Vs. Average Current

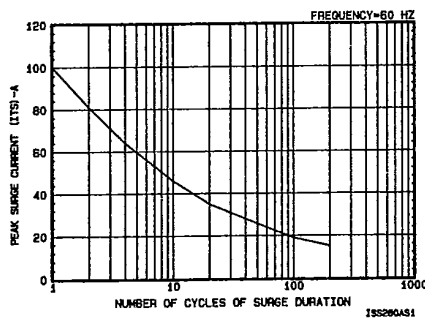


Fig. 7 - Peak Surge Current Vs. Duration