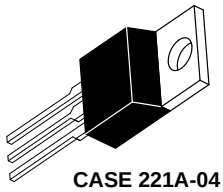
Silicon Controlled Rectifiers
Reverse Blocking Triode Thyristors

S2800 Series

. . . designed primarily for half-wave ac control applications, such as motor controls, heating controls and power supplies; or wherever half-wave silicon gate-controlled, solid-state devices are needed.

- Glass Passivated Junctions with Center Gate Fire for Greater Parameter Uniformity and Stability
- Small, Rugged, Thermowatt Construction for Low Thermal Resistance, High Heat Dissipation and Durability
- Blocking Voltage to 800 Volts

SCRs
10 AMPERES RMS
50 thru 800 VOLTS



CASE 221A-04
(TO-220AB)
STYLE 3

MAXIMUM RATINGS (T_J = 25°C unless otherwise noted.)

Rating			Symbol	Value	Unit
Peak Repetitive Forward and Reverse Blocking Voltage(1) (T_J = 25 to 100°C, Gate Open)			V_{RRM} V_{DRM}		Volts
	S2800	F		50	
		A		100	
		B		200	
		D		400	
		M		600	
		N		800	
Peak Non-repetitive Reverse Voltage and Non-Repetitive Off-State Voltage(1)			V_{RSM} V_{DSM}		Volts
	S2800	F		75	
		A		125	
		B		250	
		D		500	
		M		700	
		N		900	
RMS Forward Current (All Conduction Angles)	T_C = 75°C		$I_{T(RMS)}$	10	Amps
Peak Forward Surge Current (1 Cycle, Sine Wave, 60 Hz, T_C = 80°C)			I_{TSM}	100	Amps
Circuit Fusing Considerations (t = 8.3 ms)			I^2t	40	A^2s
Forward Peak Gate Power (t ≤ 10 μs)			P_{GM}	16	Watts
Forward Average Gate Power			$P_{G(AV)}$	0.5	Watt
Operating Junction Temperature Range			T_J	–40 to +100	°C
Storage Temperature Range			T_{stg}	–40 to +150	°C

1. V_{DRM} and V_{RRM} for all types can be applied on a continuous basis. Ratings apply for zero or negative gate voltage; however, 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.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current (V_{AK} = Rated V_{DRM} or V_{RRM}, Gate Open) T_C = 25°C T_C = 100°C	I_{DRM}, I_{RRM}	— —	— —	10 2	μA mA
Instantaneous On-State Voltage, (I_{TM} = 30 A Peak, Pulse Width ⩽ 1 ms, Duty Cycle ⩽ 2%)	V_T	—	1.7	2	Volts
Gate Trigger Current (Continuous dc) (V_D = 12 Vdc, R_L = 30 Ohms)	I_{GT}	—	8	15	mA
Gate Trigger Voltage (Continuous dc) (V_D = 12 Vdc, R_L = 30 Ohms)	V_{GT}	—	0.9	1.5	Volts
Holding Current (Gate Open, V_D = 12 Vdc, I_T = 150 mA)	I_H	—	10	20	mA
Gate Controlled Turn-On Time (V_D = Rated V_{DRM}, I_{TM} = 2 A, I_{GR} = 80 mA)	t_{gt}	—	1.6	—	μs
Circuit Commutated Turn-Off Time (V_D = V_{DRM}, I_{TM} = 2 A, Pulse Width = 50 μs, dv/dt = 200 V/μs, di/dt = 10 A/μs, T_C = 75°C)	t_q	—	25	—	μs
Critical Rate-of-Rise of Off-State Voltage (V_D = Rated V_{DRM}, Exponential Rise, T_C = 100°C)	dv/dt	—	100	—	V/μs

FIGURE 1 – CURRENT DERATING

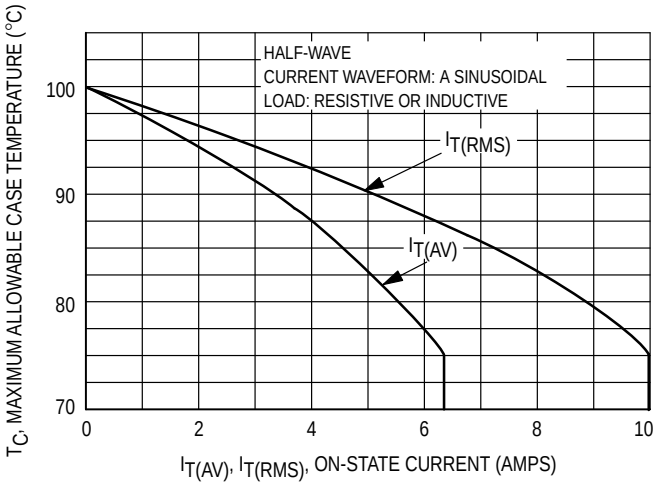
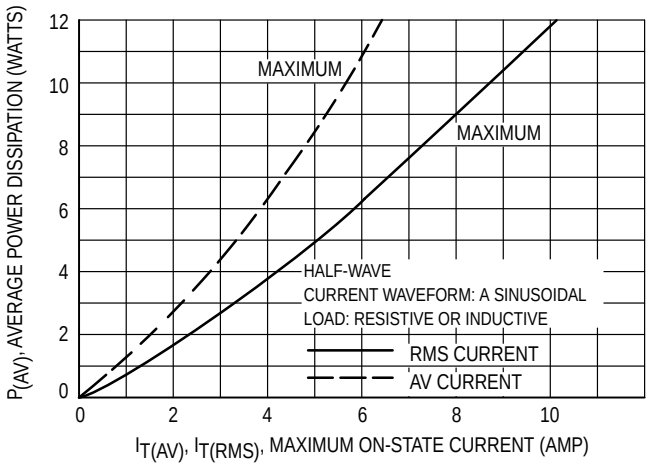
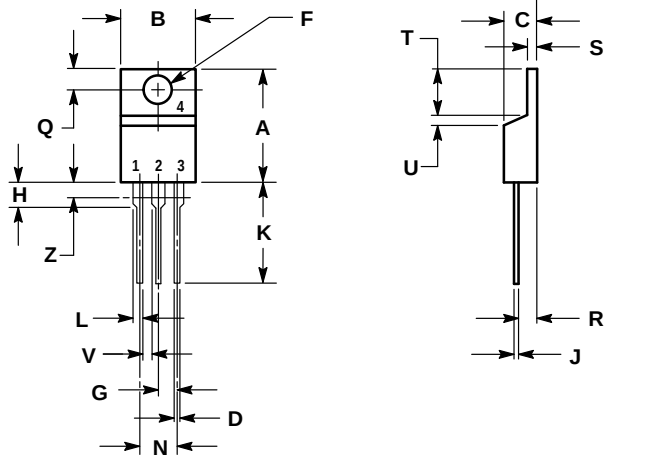


FIGURE 2 – POWER DISSIPATION



PACKAGE DIMENSIONS



STYLE 3:
PIN 1. CATHODE
2. ANODE
3. GATE
4. ANODE

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.014	0.022	0.36	0.55
K	0.500	0.562	12.70	14.27
L	0.045	0.055	1.15	1.39
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	—	1.15	—
Z	—	0.080	—	2.04

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(TO–220AB)

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