SOLID STATE INC.
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2N1842 thru 2N1850 SILICON

TO-208AA
(TO-48)

Industrial-type, silicon controlled rectifiers in a stud package with current handling capability to 16 amperes at junction temperatures to 100°C.

MAXIMUM RATINGS (T_J = 100°C unless otherwise noted)

Rating		Symbol	Value	Unit
Peak Reverse Blocking Voltage*		$V_{RSM(rep)}$*		Volts
	2N1842		25	
	2N1843		50	
	2N1844		100	
	2N1845		150	
	2N1846		200	
	2N1847		250	
	2N1848		300	
	2N1849		400	
	2N1850		500	
Peak Reverse Blocking Voltage (Transient) (Non-Recurrent 5 ms max.)		$V_{RSM(non-rep)}$		Volts
	2N1842		35	
	2N1843		75	
	2N1844		150	
	2N1845		225	
	2N1846		300	
	2N1847		350	
	2N1848		400	
	2N1849		500	
	2N1850		600	
Forward Current RMS (All Conduction Angles)		$I_{T(RMS)}$	16	Amp
Circuit Fusing Considerations (T_J = -40 to +100°C, t ≦ 8.3 ms)		I^2t	60	A^2s
Peak Forward Surge Current (One Cycle, 60 Hz, T_J = -40 to +100°C)		I_{TSM}	125	Amp
Peak Gate Power -		P_{GM}	5.0	Watts
Average Gate Power		$P_{G(AV)}$	0.5	Watt
Peak Gate Current -		I_{GM}	2.0	Amp
Peak Gate Voltage - Forward		V_{GFM}	10	Volts
Reverse		V_{GRM}	5.0	
Operating Junction Temperature Range		T_J	-40 to +100	°C
Storage Temperature Range		T_{stg}	-40 to +125	°C
Stud Torque		—	30	in. lb.

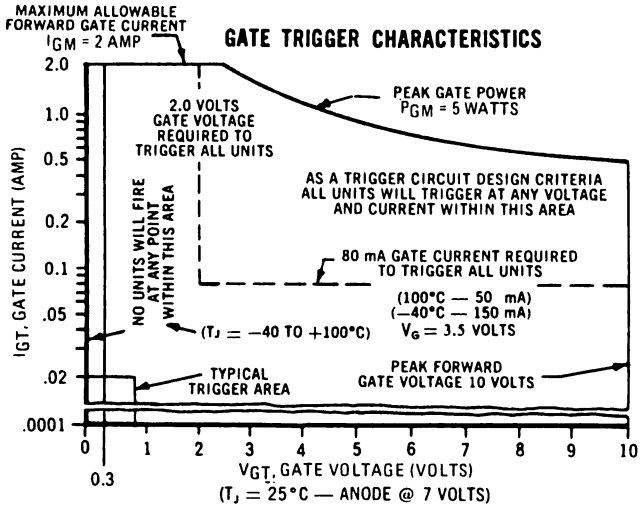
*$V_{RSM(rep)}$ for all types can be applied on a continuous dc basis without incurring damage. Ratings apply for zero or negative gate voltage.

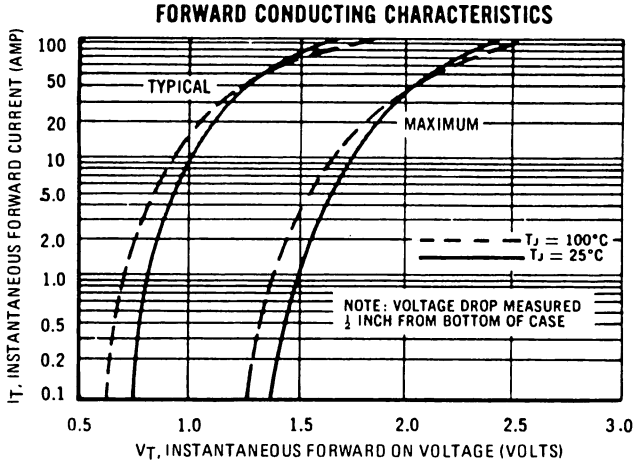
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

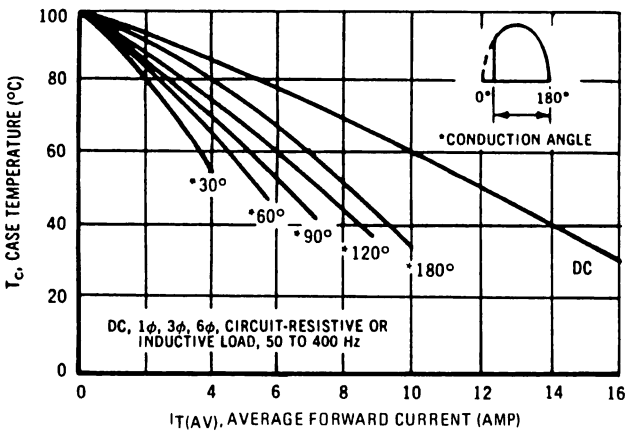
Characteristic		Symbol	Min	Typ	Max	Units
Peak Forward Blocking Voltage* (T_J = 100°C)		V_{DRM}*				Volts
	2N1842		25	—	—	
	2N1843		50	—	—	
	2N1844		100	—	—	
	2N1845		150	—	—	
	2N1846		200	—	—	
	2N1847		250	—	—	
	2N1848		300	—	—	
	2N1849		400	—	—	
	2N1850		500	—	—	
Peak Forward or Reverse Blocking Current (Rated V_{FOM} or V_{ROM} gate open, T_J = 100°C)		I_{DRM} I_{RRM}	—	—	6.0	mA
Gate Trigger Current (Continuous dc) (Anode Voltage = 7 Vdc, R_L = 50 Ω)		I_{GT}	—	15	80	mA
Gate Trigger Voltage (Continuous dc) (Anode Voltage = 7 Vdc, R_L = 50 Ω)		V_{GT}	—	0.8	2.0	Volts
(V_{DRM} = Rated V, R_L = 50 Ω, T_J = 100°C)		V_{GNT}	0.3	—	—	
Holding Current (Anode Voltage = 7 Vdc, Gate Open)		I_H	—	20	—	mA
Forward On Voltage (I_F = 16 Adc)		V_{TM}	—	1.1	1.8	Volts
Turn-On Time (t_d + t_r) (I_G = 50 mA, I_F = 10 A)		t_{gt}	—	1.0	—	μs
Turn-Off Time (I_F = 10 A, I_R = 10 A; dv/dt = 20 V/μs, T_J = 100°C) (V_{DRM} = rated voltage)		t_q	—	25	—	μs
Forward Voltage Application Rate (Gate open, T_J = 100°C)		dv/dt	—	30	—	V/μs
Thermal Resistance (Junction to Case)		θ_{JC}	—	1.0	2.0	°C/W

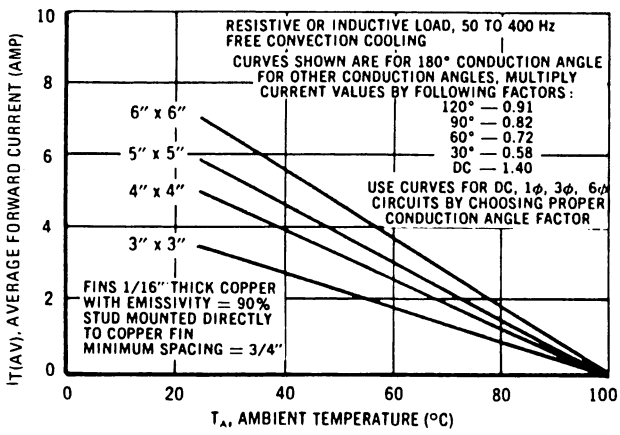
*V_{DRM} for all types can be applied on a continuous dc basis without incurring damage.
Ratings apply for zero or negative voltage.

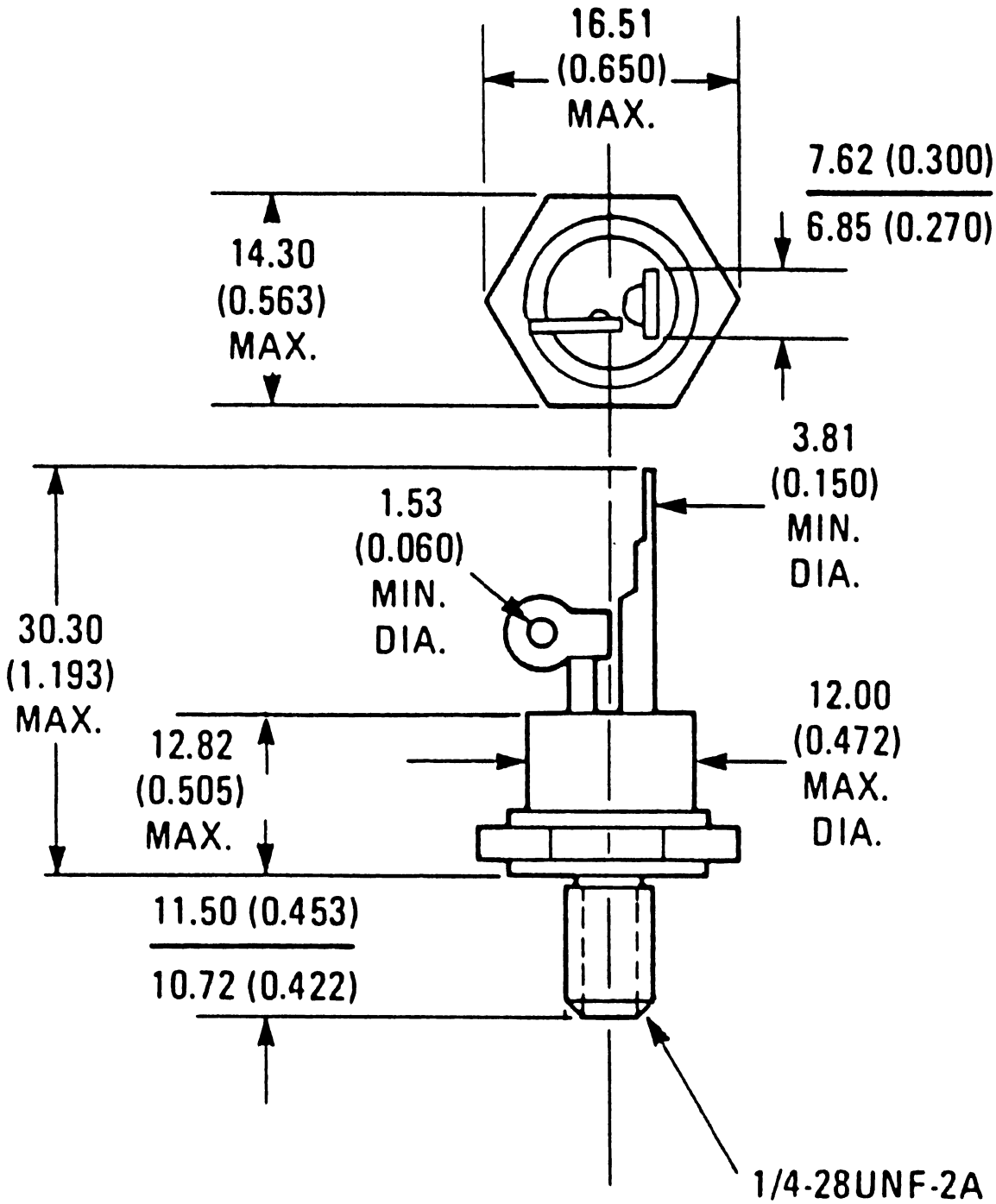
2N1842 thru 2N1850 (continued)











Conforms to JEDEC OUTLINE TO-208AA (TO-48)

Dimensions in Millimeters and (Inches)