



2N1842 thru 2N1850 SILICON



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

TO-208AA
(TO-48)

MAXIMUM RATINGS ($T_J = 100^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Reverse Blocking Voltage* 2N1842 2N1843 2N1844 2N1845 2N1846 2N1847 2N1848 2N1849 2N1850	$V_{RSM(rep)}$ *	25 50 100 150 200 250 300 400 500	Volts
Peak Reverse Blocking Voltage (Transient) (Non-Recurrent 5 ms max.) 2N1842 2N1843 2N1844 2N1845 2N1846 2N1847 2N1848 2N1849 2N1850	$V_{RSM(non-rep)}$	35 75 150 225 300 350 400 500 600	Volts
Forward Current RMS (All Conduction Angles)	$I_T(RMS)$	16	Amp
Circuit Fusing Considerations ($T_J = -40$ to $+100^\circ\text{C}$, $t \leq 8.3$ ms)	I^2t	60	A^2s
Peak Forward Surge Current (One Cycle, 60 Hz, $T_J = -40$ to $+100^\circ\text{C}$)	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 Reverse	V_{GFM} V_{GRM}	10 5.0	Volts
Operating Junction Temperature Range	T_J	-40 to +100	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-40 to +125	$^\circ\text{C}$
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.

2N1842 thru 2N1850 (continued)

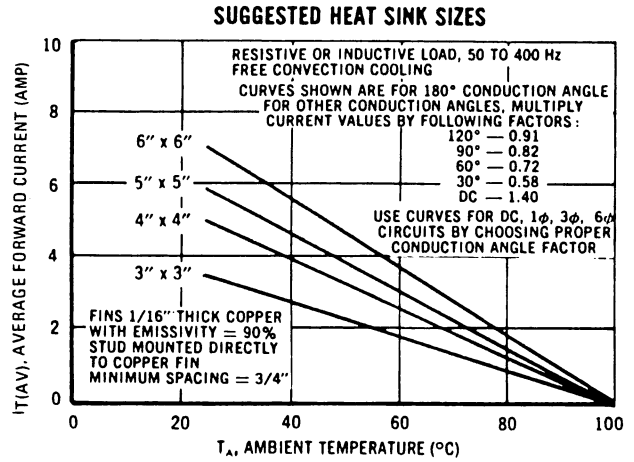
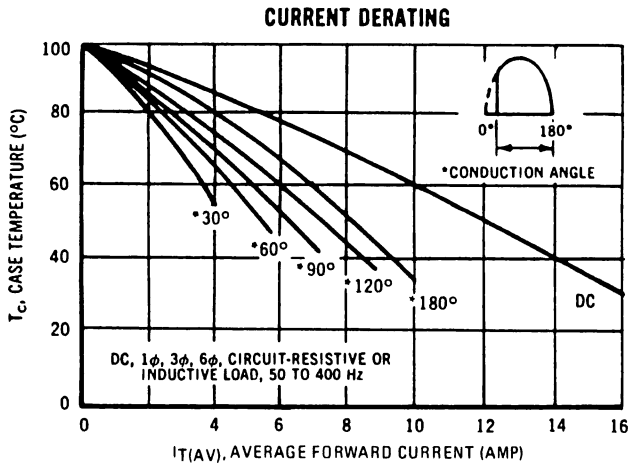
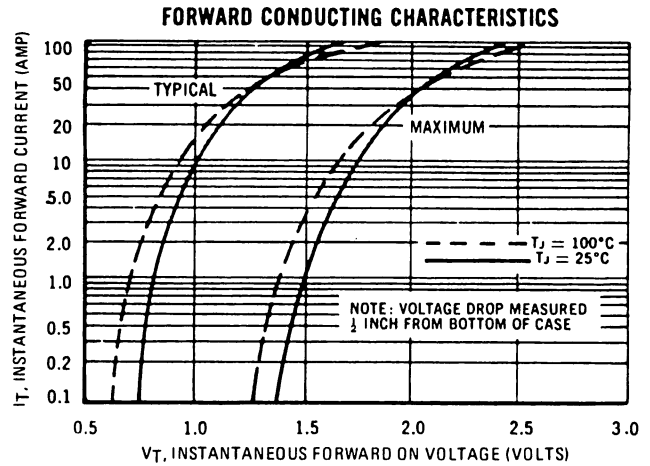
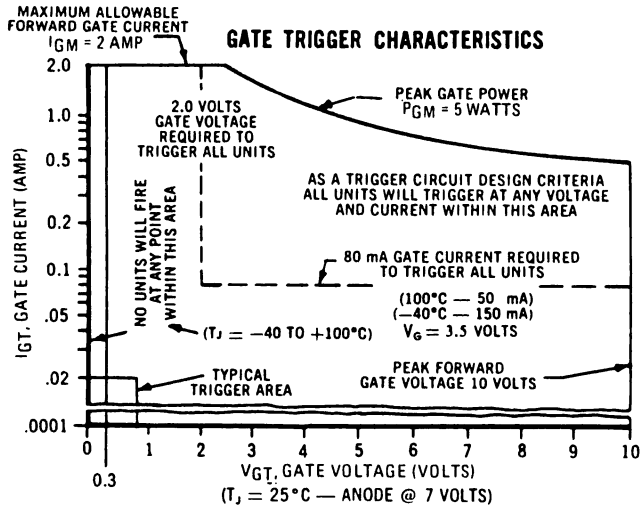
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

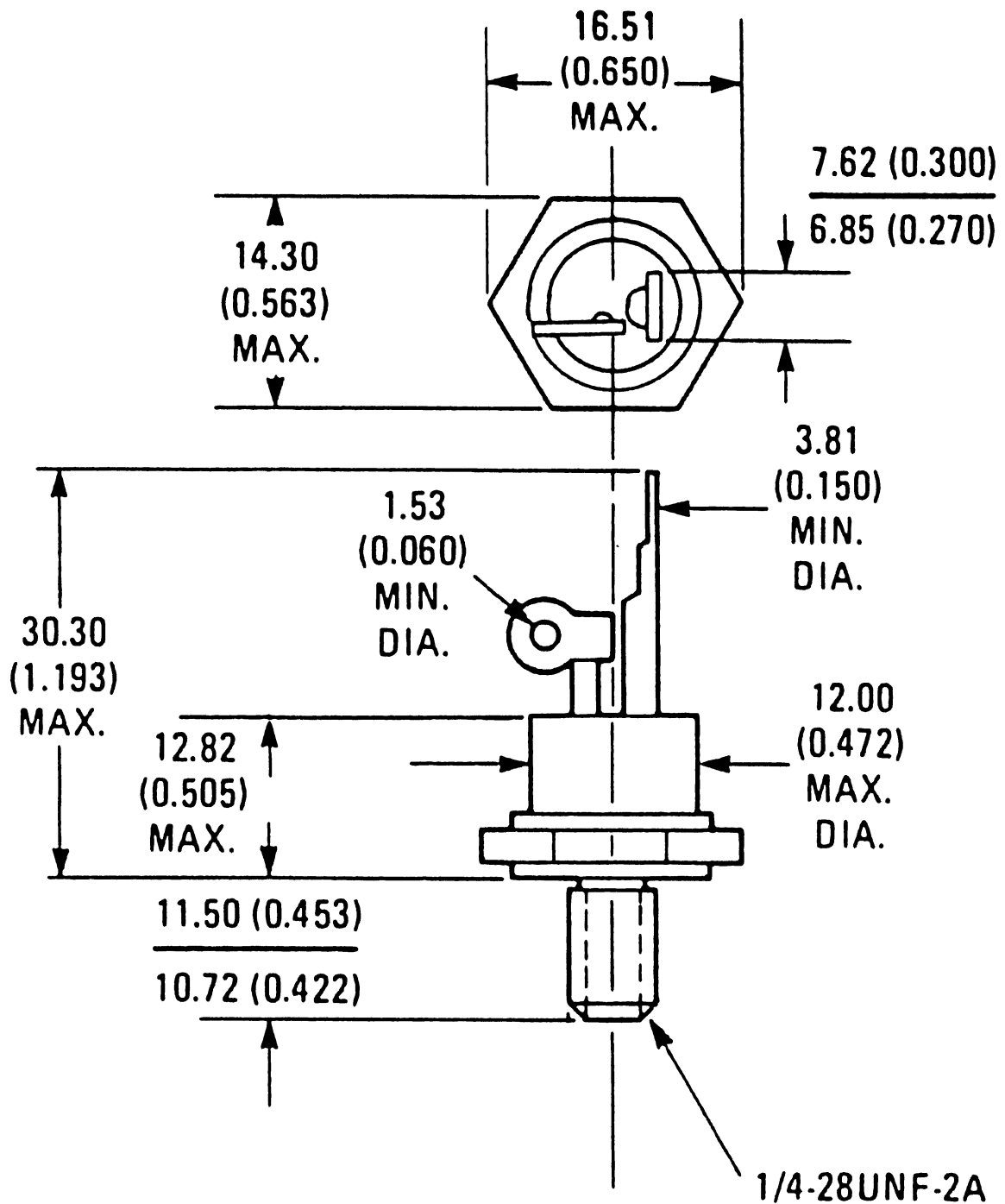
Characteristic	Symbol	Min	Typ	Max	Units
Peak Forward Blocking Voltage* (T _J = 100°C)	V _{DRM} *				Volts
2N1842		25	—	—	
2N1843		50	—	—	
2N1844		100	—	—	
2N1845		150	—	—	
2N1846		200	—	—	
2N1847		250	—	—	
2N1848		300	—	—	
2N1849		400	—	—	
2N1850		500	—	—	
Peak Forward or Reverse Blocking Current (Rated 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 _{DRM} = Rated V, R _L = 50 Ω, T _J = 100°C)	V _{GT} V _{GNT}	— 0.3	0.8 —	2.0 —	Volts
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)