

**2N1842A thru 2N1850A 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 125°C.

MAXIMUM RATINGS ($T_J = 125^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Peak Reverse Blocking Voltage* 2N1842A 2N1843A 2N1844A 2N1845A 2N1846A 2N1847A 2N1848A 2N1849A 2N1850A	$V_{RSM(rep)}^*$	25 50 100 150 200 250 300 400 500	Volts
Peak Reverse Blocking Voltage (Transient) (Non-Recurrent 5 ms max.) 2N1842A 2N1843A 2N1844A 2N1845A 2N1846A 2N1847A 2N1848A 2N1849A 2N1850A	$V_{RSM(non-rep)}$	35 75 150 225 300 350 400 500 600	Volts
Forward Current RMS	$I_T(RMS)$	16	Amp
Peak Forward Surge Current (One Cycle, 60 Hz, $T_J = -65$ to $+125^\circ\text{C}$)	I_{TSM}	125	Amp
Circuit Fusing Considerations ($T_J = -65$ to $+125^\circ\text{C}$, $t \leq 8.3$ ms)	I^2t	60	A^2s
Peak Gate Power - Forward	P_{GM}	5.0	Watts
Average Gate Power - Forward	$P_{G(AV)}$	0.5	Watt
Peak Gate Current - Forward	I_{GM}	2.0	Amp
Peak Gate Voltage - Forward Reverse	V_{GFM} V_{GRM}	10 5.0	Volts
Operating Junction Temperature Range	T_J	-65 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +150	$^\circ\text{C}$
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 A thru 2N1850A (continued)

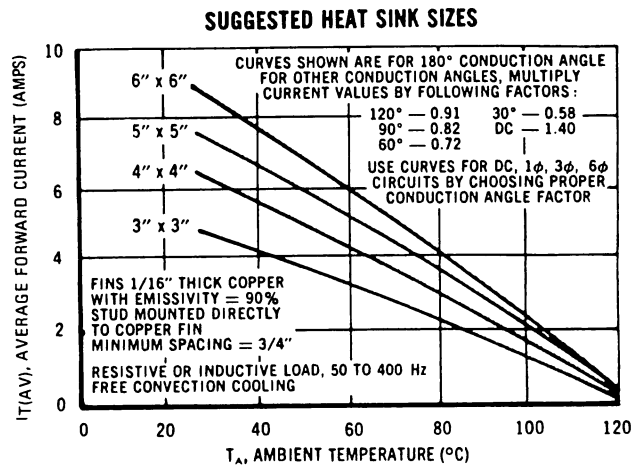
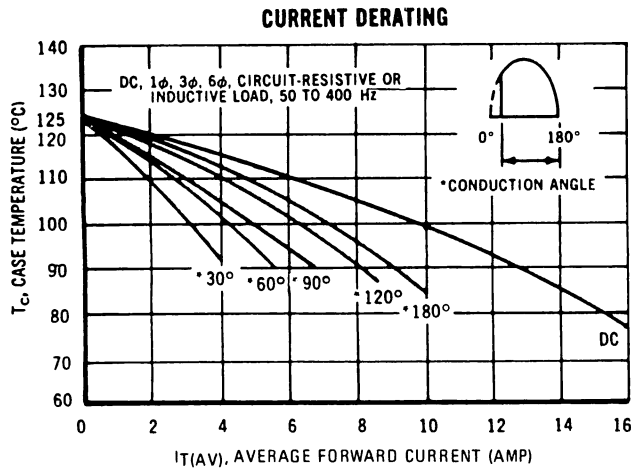
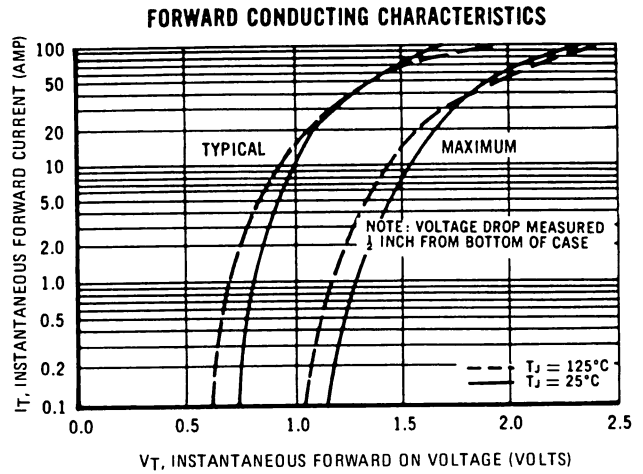
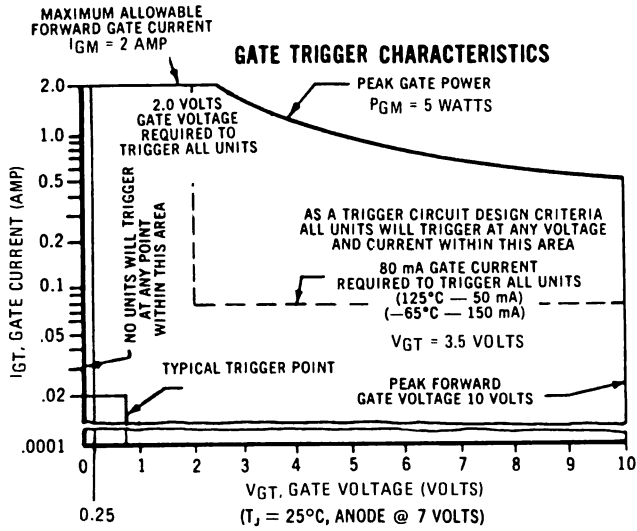
ELECTRICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$ unless otherwise noted)

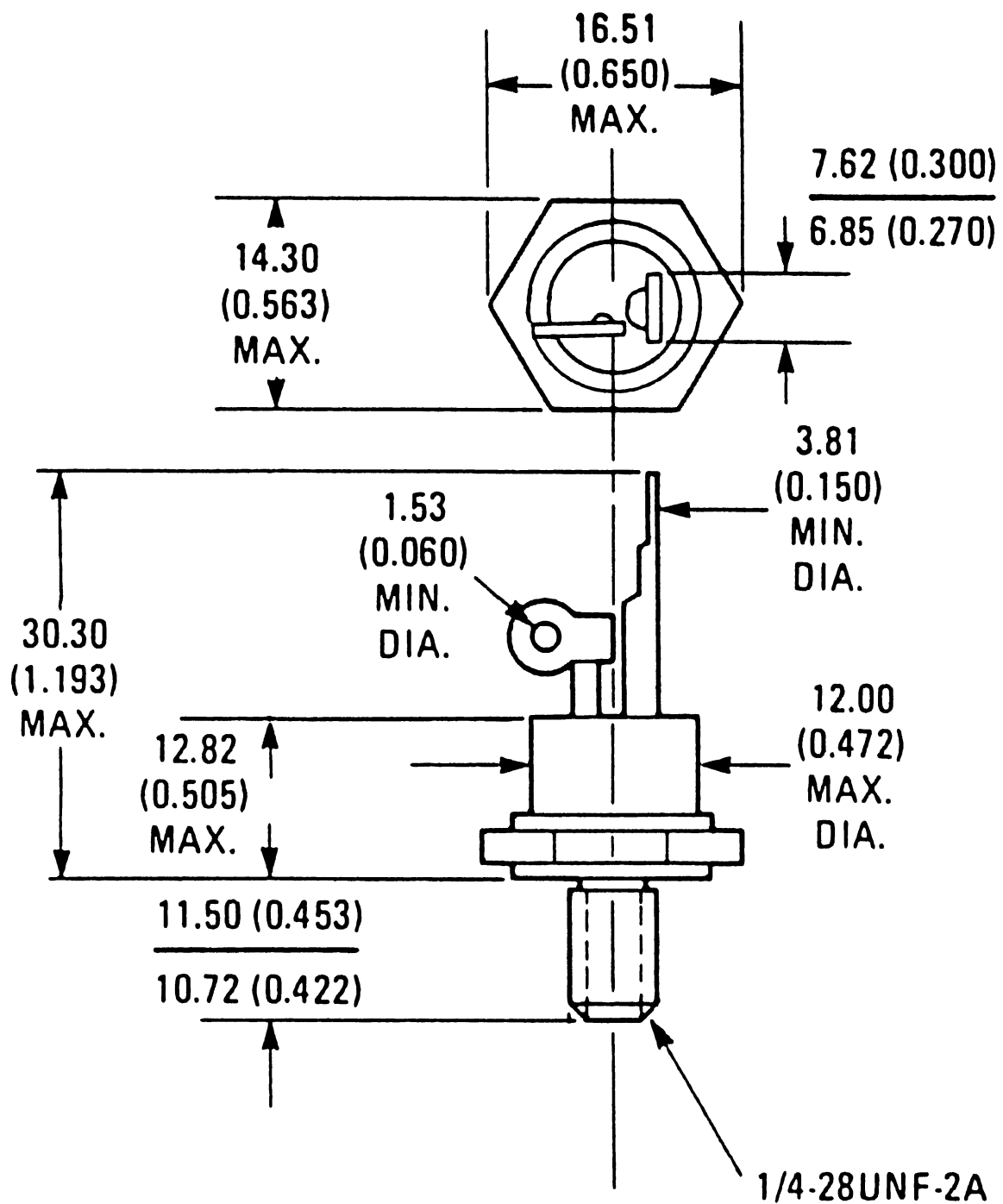
Characteristic	Symbol	Min	Typ	Max	Units
Peak Forward Blocking Voltage* ($T_J = 125^\circ\text{C}$)	V_{DRM}^*				Volts
2N1842A		25	—	—	
2N1843A		50	—	—	
2N1844A		100	—	—	
2N1845A		150	—	—	
2N1846A		200	—	—	
2N1847A		250	—	—	
2N1848A		300	—	—	
2N1849A		400	—	—	
2N1850A		500	—	—	
Peak Forward or Reverse Blocking Current (V_{DRM} , OR V_{RSM} , gate open, $T_J = 125^\circ\text{C}$)	I_{DRM} I_{RRM}	—	—	6.0	mA
Gate Trigger Current (Continuous dc) (Anode Voltage = 7 Vdc, $R_L = 50 \Omega$)	I_{GT}	—	15	80	mA
Gate Trigger Voltage (Anode Voltage = 7 Vdc, $R_L = 50 \Omega$) ($V_{\text{DRM}} = \text{Rated V}$, $R_L = 50 \Omega$, $T_J = 125^\circ\text{C}$)	V_{GT} V_{GNT}	— 0.25	0.8 —	2.0 —	Volts
Holding Current (Anode Voltage = 7 Vdc, Gate Open)	I_{H}	—	20	—	mA
Forward On Voltage ($I_T = 16 \text{ Adc}$)	V_T	—	1.1	1.6	Volts
Turn-On Time ($t_d + t_r$) ($I_{\text{GT}} = 50 \text{ mA}$, $I_T = 10 \text{ A}$)	t_{gt}	—	1.0	—	μs
Turn-Off Time ($I_T = 10 \text{ A}$, $I_R = 10 \text{ A}$, $dv/dt = 20 \text{ V}/\mu\text{s}$, $T_J = 125^\circ\text{C}$)	t_q	—	30	—	μs
Forward Voltage Application Rate (Gate Open, $T_J = 125^\circ\text{C}$)	dv/dt	—	30	—	$\text{V}/\mu\text{s}$
Thermal Resistance (Junction to Case)	θ_{JC}	—	1.0	2.0	$^\circ\text{C}/\text{W}$

* V_{DRM} for all types can be applied on a continuous dc basis without incurring damage.

Ratings apply for zero or negative gate voltage.

2N1842A thru 2N1850A (continued)





Conforms to JEDEC OUTLINE TO-208AA (TO-48)
Dimensions in Millimeters and (Inches)