

2N4361 thru 2N4368 PNP (SILICON)

2N4371 thru 2N4378

THYRISTORS SILICON CONTROLLED RECTIFIERS

... designed for high power industrial and consumer applications in power and speed controls such as welders, furnaces, motors, space heaters and other equipment where control of high current is needed.

THYRISTORS PNPN

110 AMPERES RMS
100 thru 1400 VOLTS**

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
*Repetitive Peak Reverse Blocking Voltage	$V_{RRM}^{(1)}$		Volts
2N4361, 2N4371		100	
2N4362, 2N4372		200	
2N4363, 2N4373		400	
2N4364, 2N4374		600	
2N4365, 2N4375		800	
2N4366, 2N4376		1000	
2N4367, 2N4377		1200	
2N4368, 2N4378		1400	
Non-Repetitive Peak Reverse Blocking Voltage ($t \leq 5.0$ ms)	V_{RSM}		Volts
2N4361, 2N4371		200	
2N4362, 2N4372		300	
2N4363, 2N4373		500	
2N4364, 2N4374		700	
2N4365, 2N4375		900	
2N4366, 2N4376		1100	
2N4367, 2N4377		1300	
2N4368, 2N4378		1500	
Forward Current RMS, $T_C = 75^\circ\text{C}$	$I_T(\text{RMS})$	110	Amp
*Peak Surge Current (One cycle, 60 Hz) ($T_J = -40$ to $+125^\circ\text{C}$)	I_{TSM}	1600	Amp
Circuit Fusing Considerations ($T_J = -40$ to $+125^\circ\text{C}$)	I^2t		A^2s
($t = 1.5$ ms)		8400	
($t = 8.3$ ms)		10,700	
*Peak Gate Power	P_{GFM}	15	Watts
*Average Gate Power	$P_{GF(AV)}$	3.0	Watt
*Peak Forward Gate Current	I_{GFM}	4.0	Amp
*Peak Reverse Gate Voltage	V_{GRM}	5.0	Volts
*Operating Junction Temperature Range	T_J	-40 to +125	$^\circ\text{C}$
*Storage Temperature Range	T_{stg}	-40 to +150	$^\circ\text{C}$
Stud Torque	—	130	in. lb.

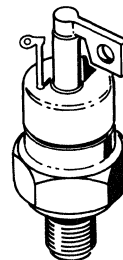
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	θ_{JC}	0.28	$^\circ\text{C}/\text{W}$

* Indicates JEDEC Registered Data.

** Consult factory for higher and intermediate voltages.

- (1) Ratings apply for zero or negative gate voltage. Devices should not be tested for blocking capability in a manner such that the voltage applied exceeds the rated blocking voltage.
- (2) Devices should not be operated with a positive bias applied to the gate concurrent with a negative potential applied to the anode.
- (3) Reliable operation can be impaired if torque rating is exceeded, terminal tubes bent, or seal broken.



2N4371
SERIES
CASE 246
TO-83

2N4361
SERIES
CASE 219
TO-94

2N4361 thru 2N4368/2N4371 thru 2N4378 (continued)

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

Characteristic	Symbol	Min	Typ	Max	Unit
*Peak Forward Blocking Voltage ($T_J = 125^\circ\text{C}$)	$V_{DRM(1)}$	100 200 400 600 800 1000 1200 1400	—	—	Volts
*Peak Forward Blocking Current (Rated V_{DRM} , with gate open, $T_J = 125^\circ\text{C}$)	I_{DRM}	—	—	10	mA
*Peak Reverse Blocking Current (Rated V_{RRM} , with gate open, $T_J = 125^\circ\text{C}$)	I_{RRM}	—	—	10	mA
Forward "On" Voltage ($I_T = 50$ A Peak, $T_J = 25^\circ\text{C}$)	V_T	—	—	1.6	Volts
Forward "On" Voltage ($I_{TM} = 500$ A Peak, $T_J = 25^\circ\text{C}$)	V_{TM}	—	—	2.5	Volts
Gate Trigger Current (Anode Voltage = 12 V, $R_L = 3.0$ ohms)	I_{GT}	—	—	200	mA
Gate Trigger Voltage (Anode Voltage = 12 V, $R_L = 3.0$ ohms)	V_{GT}	—	—	3.0	Volts
Holding Current (Anode Voltage = 12 V, gate open, $T_J = 125^\circ\text{C}$)	I_H	—	30	—	mA
*Non-Triggering Gate Voltage (Anode Voltage = Rated V_{DM} , $R_L = 100$ ohms, $T_J = 125^\circ\text{C}$)	V_{GD}	—	—	0.15	Volts
Turn-Off Time ($I_{TM} = 50$ A, $I_R = 20$ A, $T_J = 125^\circ\text{C}$)	t_q	—	40	—	μs
*Forward Voltage Application Rate (Exponential to V_{DRM})	dv/dt	100	—	—	$\text{V}/\mu\text{s}$

* Indicates JEDEC Registered Data.

(1) Ratings apply for zero or negative gate voltage. Devices should not be tested with a constant current source for forward or reverse blocking capability such that the voltage applied exceeds the rated blocking voltage.

DERATING AND DISSIPATION FOR RESISTIVE AND INDUCTIVE LOADS ($f = 50$ to 400 Hz, SQUARE WAVE)

FIGURE 1 – CURRENT DERATING

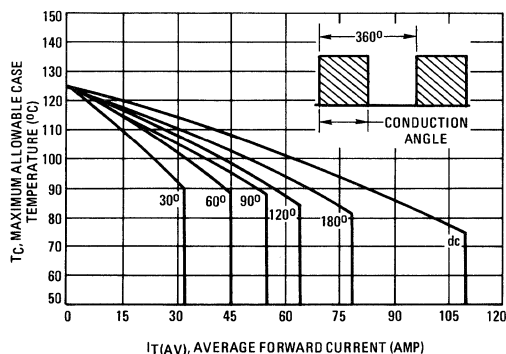
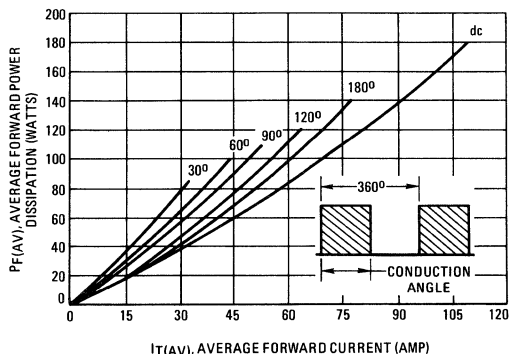


FIGURE 2 – FORWARD POWER DISSIPATION



2N4361 thru 2N4368/2N4371 thru 2N4378 (continued)

DERATING AND DISSIPATION FOR RESISTIVE AND INDUCTIVE LOADS (f = 50 to 400 Hz, SINE WAVE)

FIGURE 3 – CURRENT DERATING

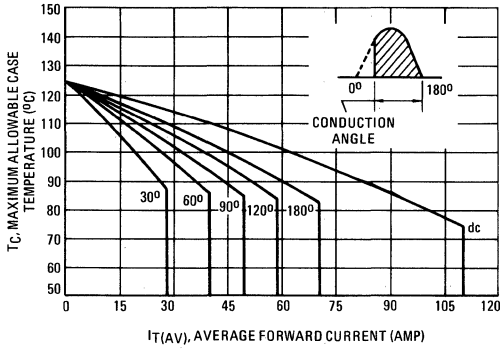


FIGURE 4 – FORWARD POWER DISSIPATION

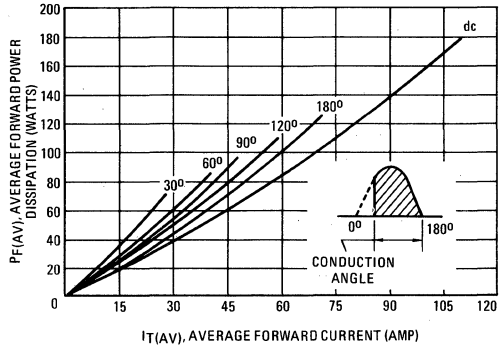
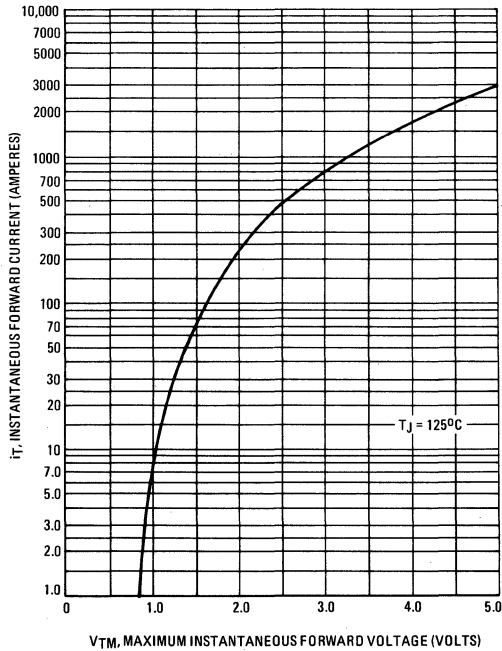
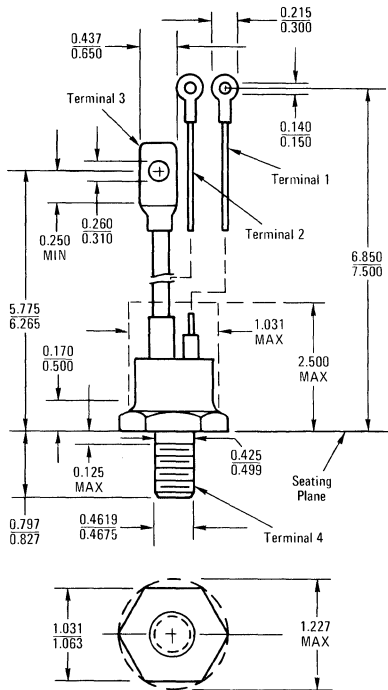


FIGURE 5 – FORWARD CONDUCTION CHARACTERISTIC



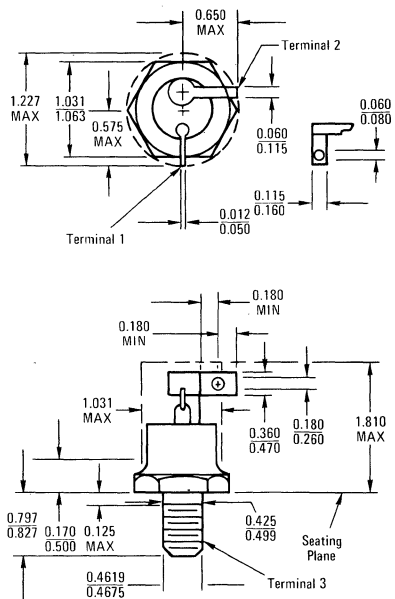
2N4361 thru 2N4368/2N4371 thru 2N4378 (continued)



To convert inches to millimeters multiply by 25.4
All JEDEC dimensions and notes apply

CASE 219-01
TO-94

- TERMINAL 1 - GATE (WHITE)
- TERMINAL 2 - CATHODE POTENTIAL (RED)
- TERMINAL 3 - CATHODE (RED)
- TERMINAL 4 - ANODE



To convert inches to millimeters multiply by 25.4
All JEDEC dimensions and notes apply

CASE 246-01
TO-83

- TERMINAL 1 - GATE
- TERMINAL 2 - CATHODE
- TERMINAL 3 - ANODE