

## Triacs

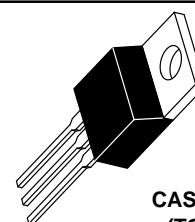
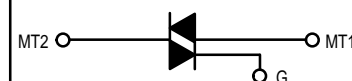
### Silicon Bidirectional Thyristors

... designed primarily for full-wave ac control applications, such as light dimmers, motor controls, heating controls and power supplies.

- Blocking Voltage to 400 Volts
- All Diffused and Glass Passivated Junctions for Greater Parameter Uniformity and Stability
- Small, Rugged, Thermowatt Construction for Low Thermal Resistance, High Heat Dissipation and Durability

**T2500D**

**TRIACs**  
**6 AMPERES RMS**  
**400 VOLTS**



**CASE 221A-07**  
**(TO-220AB)**  
**STYLE 4**

#### MAXIMUM RATINGS ( $T_J = 25^\circ\text{C}$ unless otherwise noted.)

Rating	Symbol	Value	Unit
Repetitive Peak Off-State Voltage <sup>(1)</sup> ( $T_J = -40$ to $+100^\circ\text{C}$ , Gate Open)	$V_{\text{DRM}}$	400	Volts
On-State Current RMS (Full Cycle Sine Wave 50 to 60 Hz) ( $T_C = +80^\circ\text{C}$ )	$I_{\text{T(RMS)}}$	6	Amps
Peak Non-repetitive Surge Current (One Full Cycle, 60 Hz, $T_C = +80^\circ\text{C}$ )	$I_{\text{TSM}}$	60	Amps
Circuit Fusing Considerations ( $t = 8.3$ ms)	$I^2t$	15	$\text{A}^2\text{s}$
Peak Gate Power ( $T_C = +80^\circ\text{C}$ , Pulse Width = $1 \mu\text{s}$ )	$P_{\text{GM}}$	16	Watts
Average Gate Power ( $T_C = +80^\circ\text{C}$ , $t = 8.3$ ms)	$P_{\text{G(AV)}}$	0.2	Watt
Peak Gate Trigger Current (Pulse Width = $10 \mu\text{s}$ )	$I_{\text{GTM}}$	4	Amps
Operating Junction Temperature Range	$T_J$	$-40$ to $+100$	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stg}}$	$-40$ to $+150$	$^\circ\text{C}$

1.  $V_{\text{DRM}}$  for all types can be applied on a continuous basis. Blocking voltages shall not be tested with a constant current source such that the voltage ratings of the devices are exceeded.

# T2500D

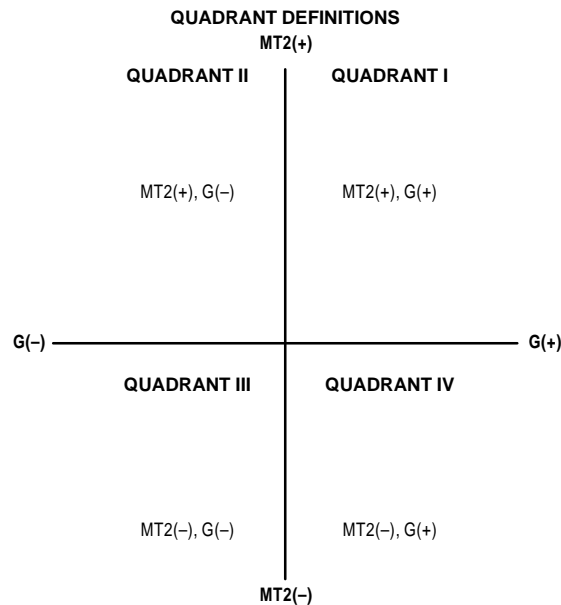
## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.7	$^{\circ}C/W$

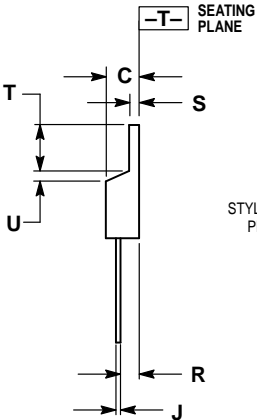
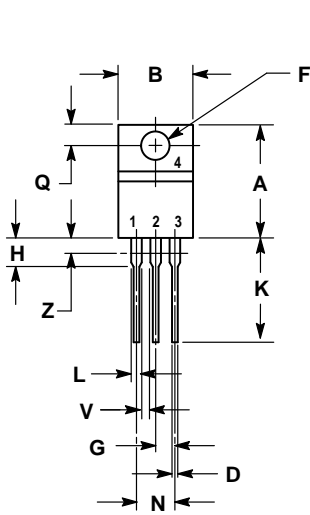
## ELECTRICAL CHARACTERISTICS ( $T_C = 25^{\circ}C$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Blocking Current (Rated $V_{DRM}$ , Gate Open, $T_J = 100^{\circ}C$ )	$I_{DRM}$	—	—	2	mA
Maximum On-State Voltage (Either Direction)* ( $I_T = 30$ A Peak)	$V_{TM}$	—	—	2	Volts
Gate Trigger Current (Continuous dc) ( $V_D = 12$ Vdc, $R_L = 12$ Ohms) MT2(+), G(+) MT2(+), G(-) MT2(-), G(-) MT2(-), G(+)	$I_{GT}$	— — — —	10 20 15 30	25 60 25 60	mA
Gate Trigger Voltage (Continuous dc) (All Quadrants) ( $V_D = 12$ Vdc, $R_L = 12$ Ohms) ( $V_D = V_{DROM}$ , $R_L = 125$ Ohms, $T_C = 100^{\circ}C$ )	$V_{GT}$	— 0.2	1.25 —	2.5 —	Volts
Holding Current (Either Direction) (Main Terminal Voltage = 12 Vdc, Gate Open, Initiating Current = 150 mA)	$I_H$	—	15	30	mA
Gate Controlled Turn-On Time (Rated $V_{DRM}$ , $I_T = 10$ A, $I_{GT} = 160$ mA, Rise Time = 0.1 $\mu s$ )	$t_{gt}$	—	1.6	—	$\mu s$
Critical Rate-of-Rise of Commutation Voltage (Rated $V_{DRM}$ , $I_{T(RMS)} = 6$ A, Commutating $di/dt = 3.2$ A/ms, Gate Unenergized, $T_C = 80^{\circ}C$ )	$dv/dt(c)$	—	10	—	$V/\mu s$
Critical Rate-of-Rise of Off-State Voltage (Rated $V_{DRM}$ , Exponential Voltage Rise, Gate Open, $T_C = 100^{\circ}C$ ) T2500D	$dv/dt$	—	75	—	$V/\mu s$

\*Pulse Test: Pulse Width  $\leq 300 \mu s$ , Duty Cycle  $\leq 2\%$ .



PACKAGE DIMENSIONS




STYLE 4:  
 PIN 1. MAIN TERMINAL 1  
 2. MAIN TERMINAL 2  
 3. GATE  
 4. MAIN TERMINAL 2

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.

DIM	INCHES		MILLIMETERS	
	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	0.060	1.15	1.52
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

CASE 221A-07  
 (TO-220AB)  
 ISSUE Z

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