

**NTE5620**  
**TRIAC**  
**800V<sub>RM</sub>, 8A, TO220 Full Pack**

The NTE5620 TRIAC is designed primarily for full-wave AC control applications, such as light dimmers, heater controls, motor controls, and power supplies; or wherever full wave silicon gate controlled solid state devices are needed. TRIAC type thyristors switch from a blocking to a conducting state for either polarity of applied voltage with positive or negative gate triggering.

**Features:**

- Blocking Voltage – 800 Volts
- All Diffused and Glass Passivated Junctions for Greater Parameter Uniformity and Stability
- Small, Rugged, TO220 Full Pack for Low Thermal Resistance, High Heat Dissipation, and Durability
- Gate Triggering Guaranteed in Four Modes

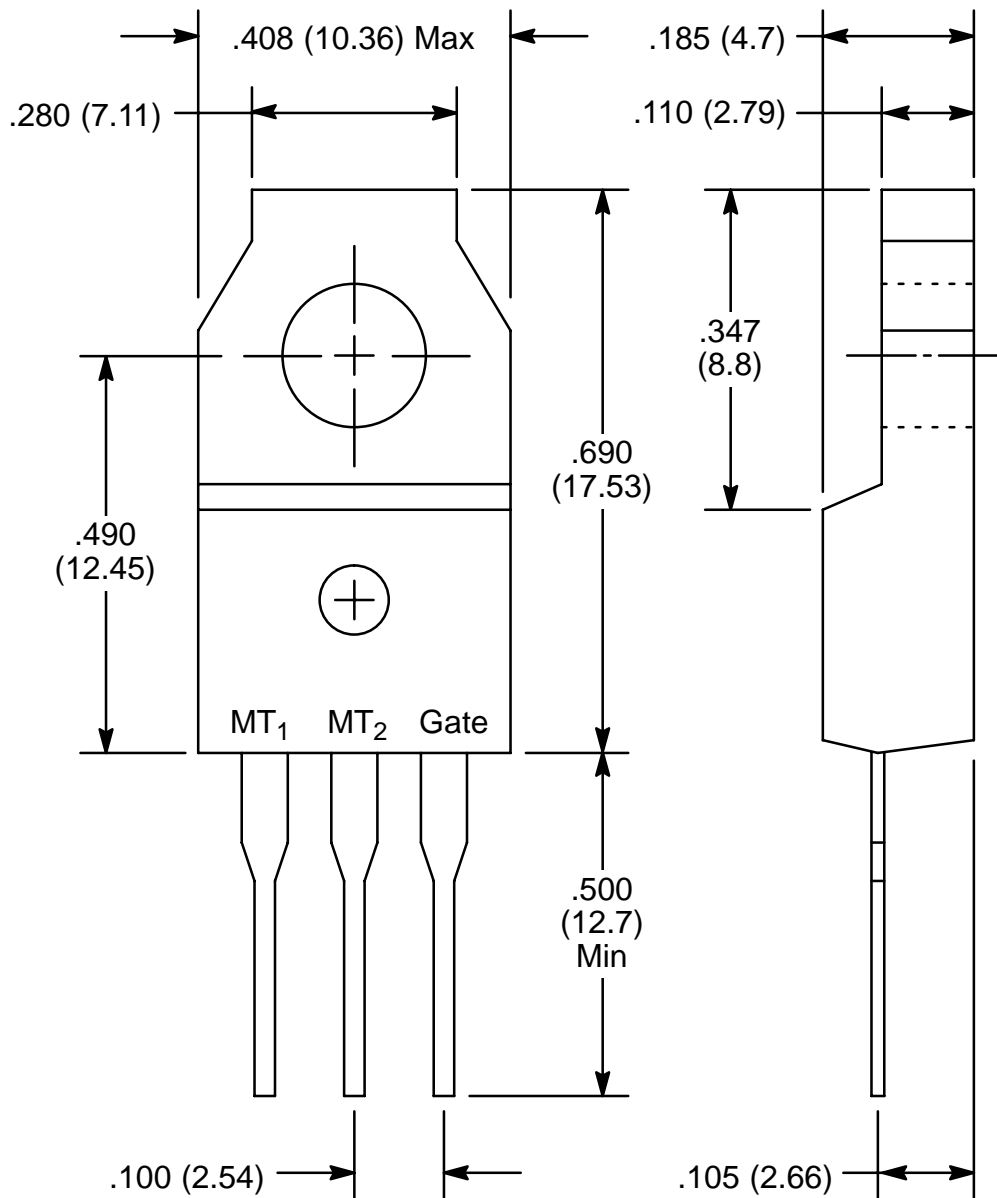
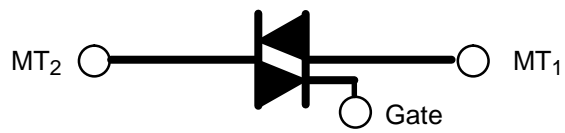
**Absolute Maximum Ratings:**

Peak Repetitive Off-State Voltage, $V_{DRM}$ ( $T_J = -40^\circ$ to $+125^\circ\text{C}$ , 1/2 Sine Wave 50 to 60Hz, Gate Open, Note 1) .....	800V
On-State Current RMS, $I_{T(RMS)}$ ( $T_C = +80^\circ\text{C}$ , Full Cycle Sine Wave 50 to 60Hz, Note 2) .....	8A
Peak Non-Repetitive Surge Current, $I_{TSM}$ (One Full Cycle, 60Hz, $T_C = +125^\circ\text{C}$ , Preceded and followed by rated current) .....	100A
Peak Gate Power ( $T_C = +80^\circ\text{C}$ , Pulse Width = 2 $\mu\text{s}$ ), $P_{GM}$ .....	16W
Average Gate Power ( $T_C = +80^\circ\text{C}$ , $t = 8.3\text{ms}$ ), $P_{G(AV)}$ .....	350mW
Peak Gate Current (Pulse Width = 2 $\mu\text{s}$ ), $I_{GM}$ .....	4A
RMS Isolation Voltage ( $T_A = +25^\circ\text{C}$ , Relative Humidity $\leq 20\%$ ), $V_{(ISO)}$ .....	1500V
Operating Junction Temperature Range, $T_J$ .....	$-40^\circ$ to $+125^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-40^\circ$ to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	2.2 $^\circ\text{C/W}$
Typical Thermal Resistance, Case-to-Sink, $R_{thCS}$ .....	2.2 $^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient, $R_{thJA}$ .....	60 $^\circ\text{C/W}$

- Note 1. Ratings apply for open gate conditions. Thyristor devices shall not be tested with a constant current source for blocking capability such that the voltage applied exceeds the rated blocking voltage.
- Note 2. The case temperature reference point for all  $T_C$  measurements is a point on the center lead of the package as close as possible to the plastic body.

**Electrical Characteristics:** ( $T_C = +25^\circ\text{C}$  unless otherwise specified)

Characteristics	Symbol	Min	Typ	Max	Unit
Peak Blocking Current (Either Direction) (Rated $V_{\text{DRM}}$ , $T_J = +125^\circ\text{C}$ , Gate Open)	$I_{\text{DRM}}$	–	–	2	mA
Peak On–State Voltage (Either Direction) ( $I_{\text{TM}} = 11.3\text{A}$ Peak; Pulse Width = 1 to 2ms, Duty Cycle < 2%)	$V_{\text{TM}}$	–	1.7	2.0	V
Peak Gate Trigger Current (Main Terminal Voltage = 12Vdc, $R_L = 100$ Ohms) MT2(+), G(+) MT2(+), G(–) MT2(–), G(–) MT2(–), G(+)	$I_{\text{GT}}$	–	–	50 50 50 75	mA
Peak Gate Trigger Voltage (Main Terminal Voltage = 12Vdc, $R_L = 100$ Ohms) MT2(+), G(+) MT2(+), G(–) MT2(–), G(–) MT2(–), G(+) (Main Terminal Voltage = Rated $V_{\text{DRM}}$ , $R_L = 10\text{k}\Omega$ , $T_J = +125^\circ\text{C}$ ) MT2(+), G(+); MT2(+), G(–); MT2(–), G(–) MT2(–), G(+)	$V_{\text{GT}}$	–	0.9 0.9 1.1 1.4	2.0 2.0 2.0 2.5	V
Holding Current (Either Direction) (Main Terminal Voltage = 24Vdc, Gate Open $I_T = 200\text{mA}$ )	$I_H$	–	–	50	mA
Critical Rate of Rise of Off–State Voltage (Rated $V_{\text{DRM}}$ , Exponential Waveform, $T_J = +125^\circ\text{C}$ , Gate Open)	dv/dt	–	100	–	V/ $\mu\text{s}$
Critical Rate of Rise of Commutation Voltage (Rated $V_{\text{DRM}}$ , $I_{\text{T(RMS)}} = 6\text{A}$ , Commutating di/dt = 4.3A/ms, Gate Unenergized, $T_C = +80^\circ\text{C}$ )	dv/dt(c)	–	5	–	V/ $\mu\text{s}$



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