

NTE56004 thru NTE56010 TRIAC, 15 Amp

The NTE56004 thru NTE56010 series of TRIACs are designed primarily for full-wave AC control applications, such as solid-state relays, motor controls, heating 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 anode voltage with positive or negative gate triggering.

Features:

- Blocking Voltage from 200 to 800 Volts
- All Diffused and Glass Passivated Junctions
- Small, Rugged, TO220 package for Low Thermal Resistance, High Heat Dissipation and Durability
- Gate Triggering specified in Four Quadrants

Absolute Maximum Ratings:

Peak Repetitive Off-State Voltage, ($T_J = -40^\circ$ to 125°C), V_{DRM}

NTE56004	200V
NTE56006	400V
NTE56008	600V
NTE56010	800V

Peak Gate Voltage, V_{GM} 10V

On-State Current RMS (Full Cycle Sine Wave 50 to 60Hz, $T_C = +90^\circ\text{C}$), $I_{\text{T(RMS)}}$ 15A

Circuit Fusing ($t = 8.3\text{ms}$) I^2t $93\text{A}^2\text{s}$

Peak Surge Current (One Full Cycle, 60Hz, $T_C = +80^\circ\text{C}$), I_{TSM}

Preceded and followed by rated current 150A

Peak Gate Power ($T_C = +80^\circ\text{C}$, Pulse Width = $2\mu\text{s}$), P_{GM} 20W

Average Gate Power ($T_C = +80^\circ\text{C}$, $t = 8.3\text{ms}$), $P_{\text{G(AV)}}$ 500mW

Peak Gate Current, I_{GM} 2A

Operating Junction Temperature Range, T_J -40° to $+125^\circ\text{C}$

Storage Temperature Range, T_{stg} -40° to $+150^\circ\text{C}$

Thermal Resistance, Junction-to-Case, R_{thJC} 2°C/W

Electrical Characteristics ($T_C = 25^\circ\text{C}$, and either polarity of MT2 to MT1 Voltage, unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current (Rated V_{DRM} , or V_{RRM} , Gate open) $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	I_{DRM} , I_{RRM}	— —	— —	10 2	μA mA
Peak On-State Voltage ($I_{\text{TM}} = 21\text{ A}$ Peak; Pulse Width = 1 to 2ms, Duty Cycle $\leq 2\%$)	V_{TM}	—	1.3	1.6	Volts
Gate Trigger Current (Continuous dc) ($V_D = 12\text{Vdc}$, $R_L = 100\text{ Ohms}$) MT2(+) G(+), MT2(+) G(-), MT2(-) G(-) MT2(-), G(+)	I_{GT}	— —	— —	50 75	mA
Gate Trigger Voltage (Continuous dc) ($V_D = 12\text{Vdc}$, $R_L = 100\text{ Ohms}$) MT2(+) G(+), MT2(+) G(-) MT2(-) G(-) MT2(-) G(+) ($V_D = \text{Rated } V_{\text{DRM}}$, $R_L = 10\text{k Ohms}$, $T_J = 110^\circ\text{C}$) MT2(+) G(+), MT2(-) G(-), MT2(+) G(-) MT2(-) G(+)	V_{GT}	— — — 0.2 0.2	0.9 1.1 1.4 — —	2 2 2.5 — —	Volts
Holding Current (Either Direction) ($V_D = 12\text{Vdc}$, $I_T = 200\text{mA}$, Gate Open)	I_H	—	6	40	mA
Turn-On Time ($V_D = \text{Rated } V_{\text{DRM}}$, $I_{\text{TM}} = 17\text{A}$) ($I_{\text{GT}} = 120\text{mA}$, Rise Time = $0.1\mu\text{s}$, Pulse Width = $2\mu\text{s}$)	t_{gt}	—	1.5	—	μs
Critical Rate of Rise of Commutation Voltage ($V_D = \text{Rated } V_{\text{DRM}}$, $I_{\text{TM}} = 21\text{ A}$, Commutating $di/dt = 8\text{A/ms}$, Gate Unenergized, $T_C = 80^\circ\text{C}$)	$dv/dt(c)$	—	5	—	$\text{V}/\mu\text{s}$

