ELECTRONICS, INC.
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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° 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°C), $I_{T(RMS)}$ 15A

Circuit Fusing (t = 8.3ms) I^2t . . . . . $93A^2s$

Peak Surge Current (One Full Cycle, 60Hz, T_C = +80°C), I_{TSM}
- Preceded and followed by rated current 150A

Peak Gate Power (T_C = +80°C, Pulse Width = 2μs), P_{GM} 20W

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

Peak Gate Current, I_{GM} 2A

Operating Junction Temperature Range, T_J . . . . . –40° to +125°C

Storage Temperature Range, T_{stg} . . . . . –40° to +150°C

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

Electrical Characteristics (T_C = 25°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°C T_J=125°C	I_{DRM}, I_{RRM}	 – –	 – –	 10 2	 µA mA
Peak On–State Voltage (I_{TM} = 21 A Peak; Pulse Width = 1 to 2ms, Duty Cycle ≤ 2%)	V_{TM}	–	1.3	1.6	Volts
Gate Trigger Current (Continuous dc) (V_D = 12Vdc, R_L = 100 Ohms) MT2(+) G(+), MT2(+) G(–), MT2(–) G(–) MT2(–), G(+)	I_{GT}	 – –	 – –	 50 75	mA
Gate Trigger Voltage (Continuous dc) (V_D = 12Vdc, R_L = 100 Ohms) MT2(+) G(+), MT2(+) G(–) MT2(–) G(–) MT2(–) G(+) (V_D = Rated V_{DRM}, R_L = 10k Ohms, T_J = 110°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 = 12Vdc, I_T = 200mA, Gate Open)	I_H	–	6	40	mA
Turn–On Time (V_D = Rated V_{DRM}, I_{TM} = 17A) (I_{GT} = 120mA, Rise Time = 0.1µs, Pulse Width = 2µs)	t_{gt}	–	1.5	–	µs
Critical Rate of Rise of Commutation Voltage (V_D = Rated V_{DRM}, I_{TM} = 21 A, Commutating di/dt = 8A/ms, Gate Unenergized, T_C = 80°C)	dv/dt(c)	–	5	–	V/µs