

NTE5600 thru NTE5607 TRIAC, 4 Amp

Description:

The NTE5600 through NTE5607 TRIACs are designed primarily for full-wave AC control applications such as light dimmers, 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:

- 2 Mode Gate Triggering
- Blocking Voltages to 600V
- All Diffused and Glass Passivated Junctions for Greater Parameters Uniformity and Stability

Absolute Maximum Ratings:

Repetitive Peak Off-State Voltage ($T_C = +110^\circ\text{C}$, Note 1), V_{DRM}

NTE5600	25V
NTE5601	50V
NTE5602	100V
NTE5603	200V
NTE5604	300V
NTE5605	400V
NTE5606	500V
NTE5607	600V

RMS On-State Current ($T_C = +85^\circ\text{C}$), $I_{\text{T(RMS)}}$ 4A

Peak Surge Current (One Full Cycle, 60Hz, $T_J = -40^\circ$ to $+110^\circ\text{C}$), I_{TSM} 30A

Circuit Fusing ($t = 8.3\text{ms}$), I^2t $3.7\text{A}^2\text{s}$

Peak Gate Power, P_{GM} 10W

Average Gate Power, $P_{\text{G(AV)}}$ 0.5W

Peak Gate Voltage, V_{GM} 5V

Operating Junction Temperature Range, T_J -40° to $+110^\circ\text{C}$

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

Thermal Resistance, Junction-to-Case, R_{thJC} 3.5°C/W

Thermal Resistance, Junction-to-Ambient, R_{thJA} 75°C/W

Mounting Torque (6-32 Screw, Note 2) 8 in. lb.

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. Torque rating applies with the use of a compression washer. Mounting torque in excess of 8 in. lb. does not appreciably lower case-to-sink thermal resistance. MT_2 and heatsink contact pad are common.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current	I_{DRM} , I_{RRM}	Rated V_{DRM} or V_{RRM} , Gate Open, $T_J = +25^\circ\text{C}$	–	–	10	μA
		Rated V_{DRM} or V_{RRM} , Gate Open, $T_J = +110^\circ\text{C}$	–	–	2	mA
On-State Voltage (Either Direction)	V_{TM}	$I_{\text{TM}} = 6\text{A Peak}$	–	–	2	V
Peak Gate Trigger Voltage MT ₂ (+), G (+); MT ₂ (–), G (–) MT ₂ (+), G (–); MT ₂ (–), G (+)	V_{GT}	Main Terminal Voltage = 12V, $R_L = 100\Omega$, $T_J = -40^\circ\text{C}$	–	1.4	2.5	V
Peak Gate Trigger Voltage MT ₂ (+), G (+); MT ₂ (–), G (–) MT ₂ (+), G (–); MT ₂ (–), G (+)	V_{GT}	Main Terminal Voltage = Rated V_{DRM} , $R_L = 10\text{k}\Omega$, $T_J = +110^\circ\text{C}$	0.2	–	–	V
Holding Current (Either Direction)	I_{H}	Main Terminal Voltage = 12V, Gate Open, $T_J = -40^\circ\text{C}$, Initiating Current = 1A	–	–	70	mA
		Main Terminal Voltage = 12V, Gate Open, $T_J = +25^\circ\text{C}$	–	–	30	mA
Turn-On Time (Either Direction)	t_{on}	$I_{\text{TM}} = 14\text{A}$, $I_{\text{GT}} = 100\text{mA}$	–	1.5	–	μs
Blocking Voltage Application Rate at Commutation	dv/dt	Rated V_{DRM} , Gate Open, $T_J = +85^\circ\text{C}$	–	5	–	V/ μs
Gate Trigger Current Quads I & III	I_{GT}	Main Terminal Voltage = 12V, $R_L = 100\Omega$, $T_J = +25^\circ\text{C}$	–	–	30	mA
		Main Terminal Voltage = 12V, $R_L = 100\Omega$, $T_J = -40^\circ\text{C}$	–	–	60	mA

