ELECTRONICS, INC.
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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°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°C), $I_{T(RMS)}$ 4A
Peak Surge Current (One Full Cycle, 60Hz, T_J = –40° to +110°C), I_{TSM} 30A
Circuit Fusing (t = 8.3ms), I^2t . . . . . $3.7A^2s$
Peak Gate Power, P_{GM} 10W
Average Gate Power, $P_{G(AV)}$ 0.5W
Peak Gate Voltage, V_{GM} 5V
Operating Junction Temperature Range, T_J . . . . . –40° to +110°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°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°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°C	–	–	10	µA
		Rated V_{DRM} or V_{RRM}, Gate Open, T_J = +110°C	–	–	2	mA
On–State Voltage (Either Direction)	V_{TM}	I_{TM} = 6A 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 = 100Ω, T_J = –40°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 = 10kΩ, T_J = +110°C	0.2	–	–	V
Holding Current (Either Direction)	I_H	Main Terminal Voltage = 12V, Gate Open, T_J = –40°C, Initiating Current = 1A	–	–	70	mA
		Main Terminal Voltage = 12V, Gate Open, T_J = +25°C	–	–	30	mA
Turn–On Time (Either Direction)	t_{on}	I_{TM} = 14A, I_{GT} = 100mA	–	1.5	–	µs
Blocking Voltage Application Rate at Commutation	dv/dt	Rated V_{DRM}, Gate Open, T_J = +85°C	–	5	–	V/µs
Gate Trigger Current Quads I & III	I_{GT}	Main Terminal Voltage = 12V, R_L = 100Ω, T_J = +25°C	–	–	30	mA
		Main Terminal Voltage = 12V, R_L = 100Ω, T_J = –40°C	–	–	60	mA

