



ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089  
<http://www.nteinc.com>

## NTE5693/NTE5695/NTE5697 NTE56022/NTE56024/NTE56026 TRIAC, 40 Amp

### **Description:**

This NTE 40 Amp series medium power TRIACs are bi-directional triode thyristors which may be switched from off-state to conduction for either polarity of applied voltage with positive or negative gate triggering. These devices are designed for control of AC loads in applications such as lighting, heating and motor speed control, as well as static switching relays. These devices are available in a standard TO48 package (NTE5693, NTE5695, and NTE5697) or an Isolated TO48 package (NTE56022, NTE56024, and NTE56026).

### **Absolute Maximum Ratings:**

Repetitive Peak Off-State Voltage ( $T_J = +100^\circ\text{C}$ ), $V_{DRM}$	
NTE5693, NTE56022	200V
NTE5695, NTE56024	400V
NTE5697, NTE56026	600V
Repetitive Peak Reverse Voltage ( $T_J = +100^\circ\text{C}$ ), $V_{RRM}$	
NTE5693, NTE56022	200V
NTE5695, NTE56024	400V
NTE5697, NTE56026	600V
RMS On-State Current ( $T_C = +75^\circ\text{C}$ , 360° Continuous), $I_{T(RMS)}$	40A
Peak Surge (Non-Repetitive) On-State Current, $I_{TSM}$	
One-Cycle, 60Hz	400A
One-Cycle, 50Hz	350A
Peak Gate-Trigger Current (3° s Max), $I_{GTM}$	12A
Peak Gate-Power Dissipation ( $I_{GT} \leq I_{GTM}$ for 3° s Max), $P_{GM}$	40W
Average Gate-Power Dissipation, $P_{G(AV)}$	750mW
Operating Junction Temperature Range, $T_{opr}$	-40° to +100°C
NTE56026 <b>ONLY</b>	-65° to +110°C
Storage Temperature Range, $T_{stg}$	-40° to +150°C
NTE56026 <b>ONLY</b>	-65° to +150°C
Thermal Resistance, Junction-to-Case, $R_{thJC}$	
NTE5693, NTE5695, NTE5697	1.8°C/W
NTE56022, NTE56024	2.1°C/W
NTE56026	1°C/W

**Electrical Characteristics:** (At Maximum Ratings and Indicated Case Temperatures unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Off-State Current	$I_{DROM}$	$T_J = +100^\circ\text{C}$ , Gate Open, $V_{DROM} = \text{Max Rating}$	-	-	4	mA
Maximum On-State Voltage	$V_T$	$T_C = +25^\circ\text{C}$ , $I_T = 100\text{A}$ (Peak)	-	-	2.5	V
DC Holding Current	$I_{HOLD}$	$T_C = +25^\circ\text{C}$ , Gate Open	-	-	60	mA
Critical rate-of-Rise of Off-State Voltage NTE5693, NTE56022	Critical dv/dt	$T_C = +100^\circ\text{C}$ , At $V_{DROM}$ , Gate Open	-	200	-	$\text{V}/^\circ\text{s}$
NTE5695, NTE56024			-	150	-	$\text{V}/^\circ\text{s}$
NTE5697, NTE56026			-	100	-	$\text{V}/^\circ\text{s}$
Critical Rate-of-Rise of Commutation Voltage	Commutating dv/dt	$T_C = +75^\circ\text{C}$ , Gate Unenergized, $V_D = V_{DROM}$ , $T = I_{T(RMS)}$ , Commutating di/dt = 16A/ms	3	-	-	$\text{V}/^\circ\text{s}$
DC Gate-Trigger Current ( $T_{2+}$ , Gate+; $T_{2-}$ , Gate-) Quads I-II	$I_{GT}$	$T_C = +25^\circ\text{C}$ , $V_D = 12\text{VDC}$ , $R_L = 30\leq$	-	-	50	mA
			( $T_{2+}$ , Gate-; $T_{2-}$ , Gate+) Quads II-IV	-	-	80
DC Gate-Trigger Voltage	$V_{GT}$	$T_C = +25^\circ\text{C}$ , $V_D = 12\text{VDC}$ , $R_L = 30\leq$	-	-	2.5	V
Gate-Controlled Turn-On Time	$t_{gt}$	$T_C = +25^\circ\text{C}$ , $V_D = V_{DROM}$ , $I_{GT} = 300\text{mA}$ , $t_r = 0.1^\circ\text{s}$ , $I_T = 10\text{A}_{(\text{Peak})}$	-	3	-	$^\circ\text{s}$

