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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 ONLY | -65° to +110°C |
| Storage Temperature Range, T_{stg} | -40° to +150°C |
| NTE56026 ONLY | -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 (T_{2+} , Gate-; T_{2-} , Gate+) Quads II-IV | I_{GT} | $T_C = +25^{\circ}\text{C}$, $V_D = 12\text{VDC}$, $R_L = 30\leq$ | - | - | 50 | mA |
| | | | - | - | 80 | mA |
| 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} | $T_C = +25^{\circ}\text{C}$, $V_D = V_{DROM}$, $I_{GT} = 300\text{mA}$, $t_r = 0.1^{\circ}\text{s}$, $I_T = 10\text{A}_{(Peak)}$ | - | 3 | - | $^{\circ}\text{s}$ |

