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## NTE56015 thru NTE56018 TRIAC, 25 Amp

### Description:

The NTE56015 through NTE56018 series of TRIACs are high performance glass passivated PNP devices in a TO220 type package designed for general purpose applications where moderate gate sensitivity is required.

### Absolute Maximum Ratings: ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

|                                                                                                                         |       |                                     |
|-------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------|
| Repetitive Peak Off-State Voltage ( $T_J = -40^\circ$ to $+125^\circ\text{C}$ , $R_{GK} = 1\text{k}\Omega$ ), $V_{DRM}$ |       |                                     |
| NTE56015                                                                                                                | ..... | 200V                                |
| NTE56016                                                                                                                | ..... | 400V                                |
| NTE56017                                                                                                                | ..... | 600V                                |
| NTE56018                                                                                                                | ..... | 800V                                |
| On-State Current (All Conduction Angles, $T_C = +85^\circ\text{C}$ ), $I_{T(RMS)}$                                      |       | 25A                                 |
| Non-Repetitive On-State Current (Half Cycle), $I_{TSM}$                                                                 |       |                                     |
| 60Hz                                                                                                                    | ..... | 260A                                |
| 50Hz                                                                                                                    | ..... | 250A                                |
| Fusing Current ( $t = 10\text{ms}$ ), $I^2t$                                                                            |       | 312A <sup>2</sup> s                 |
| Peak Gate Current ( $t = 10\mu\text{s}$ Max), $I_{GM}$                                                                  |       | 4A                                  |
| Peak Gate Dissipation ( $t = 10\mu\text{s}$ Max), $P_{GM}$                                                              |       | 10W                                 |
| Gate Dissipation ( $t = 20\text{ms}$ Max), $P_{G(AV)}$                                                                  |       | 1W                                  |
| Operating Junction Temperature Range, $T_J$                                                                             |       | $-40^\circ$ to $+125^\circ\text{C}$ |
| Storage Temperature Range, $T_{stg}$                                                                                    |       | $-40^\circ$ to $+125^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Case, $R_{thJC}$                                                                        |       | 1.5K/W                              |
| Thermal Resistance, Junction-to-Ambient, $R_{thJA}$                                                                     |       | 60K/W                               |
| Lead Temperature (During Soldering, 1.6mm from case, 10sec max), $T_L$                                                  |       | $+250^\circ\text{C}$                |

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

| Parameter                  | Symbol      | Test Conditions                                                           | Min | Typ | Max  | Unit          |
|----------------------------|-------------|---------------------------------------------------------------------------|-----|-----|------|---------------|
| Off-State Leakage Current  | $I_{DRM}$   | $V_D = V_{DRM}$ , $R_{GK} = 1\text{k}\Omega$ , $T_J = +25^\circ\text{C}$  | -   | -   | 10   | $\mu\text{A}$ |
|                            |             | $V_D = V_{DRM}$ , $R_{GK} = 1\text{k}\Omega$ , $T_J = +125^\circ\text{C}$ | -   | -   | 3    | mA            |
| On-State Voltage           | $V_T$       | $I_T = 37.5\text{A}$ , $T_J = +25^\circ\text{C}$                          | -   | -   | 1.4  | V             |
| On-State Threshold Voltage | $V_{T(TO)}$ | $T_J = +125^\circ\text{C}$                                                | -   | -   | 0.85 | V             |
| On-State Slope Resistance  | $r_T$       | $T_J = +125^\circ\text{C}$                                                | -   | -   | 13   | m $\Omega$    |

**Electrical Characteristics (Cont'd):** ( $T_A = +25^{\circ}\text{C}$  unless otherwise specified)

| Parameter                        | Symbol    | Test Conditions                                                                         | Min | Typ | Max | Unit             |
|----------------------------------|-----------|-----------------------------------------------------------------------------------------|-----|-----|-----|------------------|
| Gate Trigger Current             | $I_{GT}$  | $V_D = 12\text{V}$ , Note 1                                                             | -   | -   | 50  | mA               |
| Gate Trigger Voltage             | $V_{GT}$  | $V_D = 12\text{V}$ , All Quadrants                                                      | -   | -   | 2.5 | V                |
| Holding Current                  | $I_H$     | $R_{GK} = 1\text{k}\Omega$                                                              | -   | -   | 50  | mA               |
| Critical Rate-of-Rise            | $dv/dt$   | $V_D = 0.67 \times V_{DRM}$ , $R_{GK} = 1\text{k}\Omega$ , $T_J = +125^{\circ}\text{C}$ | 500 | -   | -   | V/ $\mu\text{s}$ |
| Critical Rate-of-Rise, Off-State | $dv/dt_c$ | $I_T = 25\text{A}$ , $di/dt = 11\text{A/ms}$ , $T_C = +85^{\circ}\text{C}$              | 5   | -   | -   | V/ $\mu\text{s}$ |

Note 1. For either polarity of gate voltage with reference to electrode  $MT_1$ .

