



## NTE5631 thru NTE5637 TRIAC – 10 Amp

### **Description:**

The NTE5631 through NTE5637 series of TRIACs are high performance glass passivated PNPN 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  $+125^\circ\text{C}$ ,  $R_{GK} = 1\text{k}\Omega$ ),  $V_{DRM}$

NTE5631 .....	50V
NTE5632 .....	100V
NTE5633 .....	200V
NTE5634 .....	300V
NTE5635 .....	400V
NTE5636 .....	500V
NTE5637 .....	600V

On-State Current (All Conduction Angles,  $T_C = +85^\circ\text{C}$ ),  $I_T(\text{RMS})$  ..... 10A

Non-Repetitive On-State Current (Half Cycle),  $I_{TSM}$

60Hz .....	110A
50Hz .....	100A

Fusing Current ( $t = 10\text{ms}$ ),  $I^2t$  ..... 50A<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,  $R_{thJC}$  ..... 2.5K/W

Thermal Resistance, Junction-to-Ambient,  $R_{thJA}$  ..... 60K/W

Lead Temperature (During Soldering, 1.6mm from case, 10sec max),  $T_L$  .....  $+250^\circ\text{C}$

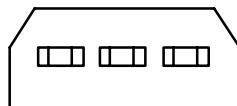
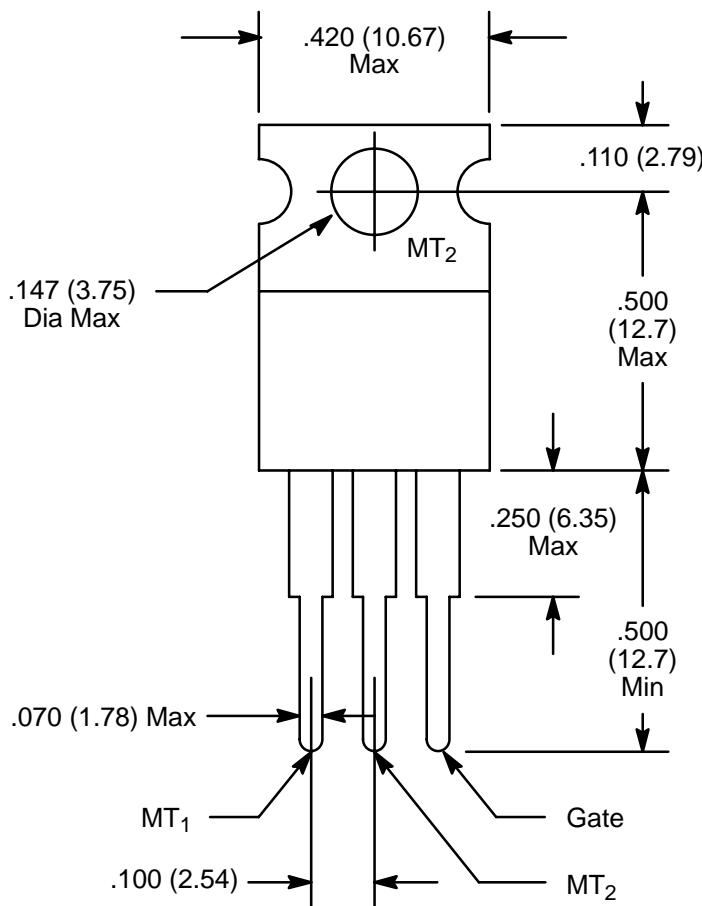
### **Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

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	$\mu\text{A}$
		$V_D = V_{DRM}$ , $R_{GK} = 1\text{k}\Omega$ , $T_J = +125^\circ\text{C}$	–	–	2	mA
On-State Voltage	$V_T$	$I_T = 15\text{A}$ , $T_J = +25^\circ\text{C}$	–	–	1.75	V
On-State Threshold Voltage	$V_{T(TO)}$	$T_J = +125^\circ\text{C}$	–	–	1.05	V
On-State Slope Resistance	$r_T$	$T_J = +125^\circ\text{C}$	–	–	52	$\text{m}\Omega$

**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/ $\mu$ s
Critical Rate-of-Rise, Off-State	$dv/dt_C$	$I_T = 8\text{A}$ , $di/dt = 3.55\text{A/ms}$ , $T_C = +85^\circ\text{C}$	5	—	—	V/ $\mu$ s

Note 1. For either polarity of gate voltage with reference to electrode MT<sub>1</sub>.



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