



**ELECTRONICS, INC.**  
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## NTE5655 thru NTE5657 TRIAC – 800mA Sensitive Gate

### **Description:**

The NTE5655 through NTE5657 are 800mA sensitive gate TRIACs in a TO92 type package designed to be driven directly with IC and MOS devices. These TRIACs feature void-free glass passivated chips.

These NTE devices are bi-directional triode thyristors and may be switched from off-state to conduction for either polarity of applied voltage with positive or negative gate trigger current. They are designed for control applications in lighting, heating, cooling and static switching relays.

### **Absolute Maximum Ratings:**

Repetitive Peak Off-State Voltage (Gate Open, $T_J = +100^\circ\text{C}$ ), $V_{\text{DRM}}$	
NTE5655 .....	200V
NTE5656 .....	400V
NTE5657 .....	600V
RMS On-State Current ( $T_C = +75^\circ\text{C}$ , Conduction Angle of $360^\circ\text{C}$ ), $I_{\text{TRMS}}$ .....	
800mA	
Peak Surge (Non-Repetitive) On-State Current (One Cycle, 50Hz or 60Hz), $I_{\text{TSM}}$ .....	
8A	
Peak Gate-Trigger Current ( $3\mu\text{s}$ Max), $I_{\text{GTM}}$ .....	
500mA	
Peak Gate-Power Dissipation ( $I_{\text{GT}} \leq I_{\text{GTM}}$ for $3\mu\text{s}$ Max), $P_{\text{GM}}$ .....	
20W	
Average Gate-Power Dissipation, $P_{\text{G(AV)}}$ .....	
200mW	
Operating Temperature Range, $T_J$ .....	
$-40^\circ$ to $+100^\circ\text{C}$	
Storage Temperature Range, $T_{\text{stg}}$ .....	
$-40^\circ$ to $+150^\circ\text{C}$	
Typical Thermal Resistance, Junction-to-Case, $R_{\text{thJC}}$ .....	
75°C/W	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Off-State Current	$I_{\text{DRM}}$	$V_{\text{DRM}} = \text{Max Rating, Gate Open, } T_J = +100^\circ\text{C}$	-	0.75	-	mA
Max. On-State Voltage	$V_{\text{TM}}$	$i_T = 800\text{mA (Peak)}$	-	-	1.9	V
DC Holding Current	$I_{\text{H}}$	Gate Open	-	-	15	mA
Critical Rate-of-Rise of Off-State Voltage	Critical dv/dt	$V_D = V_{\text{DRM}}, \text{ Gate Open, } T_C = +100^\circ\text{C}$	-	10	-	V/ $\mu\text{s}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Gate Trigger Current T <sub>2</sub> (+) Gate (+), T <sub>2</sub> (-) Gate (-) T <sub>2</sub> (+) Gate (-), T <sub>2</sub> (-) Gate (+)	I <sub>GT</sub>	V <sub>D</sub> = 6V, R <sub>L</sub> = 100Ω	-	-	5	mA
DC Gate Trigger Voltage	V <sub>GT</sub>	V <sub>D</sub> = 6V, R <sub>L</sub> = 100Ω	-	-	2.2	V
Gate-Controlled Turn-On Time	t <sub>gt</sub>	V <sub>D</sub> = V <sub>DRM</sub> , I <sub>GT</sub> = 80mA, t <sub>r</sub> = 0.1μs, i <sub>T</sub> = 10A (Peak)	-	2.2	-	μs

