



**ELECTRONICS, INC.**  
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## NTE5608 thru NTE5610 TRIAC 8 Amp

**Description:**

The NTE5608 through NTE5610 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 $+125^\circ\text{C}$ , $R_{GK} = 1\text{k}\Omega$ ), $V_{DRM}$	
NTE5608 .....	400V
NTE5609 .....	600V
NTE5610 .....	800V
On-State Current (All Conduction Angles, $T_C = +85^\circ\text{C}$ ), $I_{T(RMS)}$ .....	
8A	
Non-Repetitive On-State Current (Half Cycle), $I_{TSM}$	
60Hz .....	77A
50Hz .....	70A
Fusing Current ( $t = 10\text{ms}$ ), $I^2t$ .....	
24A <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, $R_{thJC}$ .....	
3K/W	
Thermal Resistance, Junction-to-Ambient, $R_{thJA}$ .....	
60K/W	
Lead Temperature (During Soldering, 1.6mm from case, 10sec max), $T_L$ .....	
$+25^\circ\text{C}$	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off-State Leakage Current	$I_{DRM}$	$V_D = V_{DRM}$ , $R_{GK} = 1\text{k}\Omega$ , $T_J = +25^\circ\text{C}$	-	-	5	$\mu\text{A}$
		$V_D = V_{DRM}$ , $R_{GK} = 1\text{k}\Omega$ , $T_J = +125^\circ\text{C}$	-	-	2	mA
On-State Voltage	$V_T$	$I_T = 12\text{A}$ , $T_J = +25^\circ\text{C}$	-	-	1.85	V
On-State Threshold Voltage	$V_{T(TO)}$	$T_J = +125^\circ\text{C}$	-	-	1	V
On-State Slope Resistance	$r_T$	$T_J = +125^\circ\text{C}$	-	-	80	$\text{m}\Omega$

**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	–	–	10	mA
Gate Trigger Voltage	$V_{GT}$	$V_D = 12\text{V}$ , All Quadrants	–	–	2.5	V
Holding Current	$I_H$	$R_{GK} = 1\text{k}\Omega$	–	–	10	mA
Critical Rate-of-Rise	$dv/dt$	$V_D = 0.67 \times V_{DRM}$ , $R_{GK} = 1\text{k}\Omega$ , $T_J = +125^\circ\text{C}$	50	–	–	V/ $\mu\text{s}$
Critical Rate-of-Rise, Off-State	$dv/dt_c$	$I_T = 8\text{A}$ , $di/dt = 3.55\text{A/ms}$ , $T_C = +85^\circ\text{C}$	2	–	–	V/ $\mu\text{s}$

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

