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## NTE5688, NTE5689, NTE5690 TRIAC - 40Amp, 1/2" Press Fit

### **Absolute Maximum Ratings:**

Repetitive Peak Off-State Voltage (Gate Open, $T_J = +110^\circ\text{C}$ , Note 1), $V_{\text{DRM}}$	
NTE5688 .....	200V
NTE5689 .....	400V
NTE5690 .....	600V
RMS On-State Current ( $T_C = +80^\circ\text{C}$ , Conduction Angle = $360^\circ$ ), $I_{\text{T(RMS)}}$ .....	40A
Non-Repetitive Peak Surge On-State Current (One-Cycle, at 50Hz or 60Hz), $I_{\text{TSM}}$ .....	400A
Peak Gate-Trigger Current (for $3\mu\text{s}$ Max), $I_{\text{GTM}}$ .....	12A
Peak Gate-Power Dissipation ( $I_{\text{GT}} \leq I_{\text{GTM}}$ ), $P_{\text{GM}}$ .....	40W
Average Gate-Power Dissipation, $P_{\text{G(AV)}}$ .....	750mW
Operating Temperature Range, $T_{\text{opr}}$ .....	$-40^\circ$ to $+110^\circ\text{C}$
Storage Temperature Range, $T_{\text{stg}}$ .....	$-40^\circ$ to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Case, $R_{\text{thJC}}$ .....	1.8°C/W Typ

### **Electrical Characteristics:** (At Specified Case Temperature)

Peak Off-State Current, $I_{\text{DRM}}$	
(Gate Open, $T_C = +110^\circ\text{C}$ , $V_{\text{DRM}} = \text{Max Rating}$ , Note 1) .....	1mA Max
Maximum On-State Voltage ( $T_C = +25^\circ\text{C}$ , $I_T = 40\text{A}$ , Note 1), $V_{\text{TM}}$ .....	2.0V Max
DC Holding Current (Gate Open, $T_C = +25^\circ\text{C}$ , Note 1), $I_{\text{Hold}}$ .....	60mA Max
Critical Rate-of-Rise of Off-State Voltage, Critical dv/dt	
( $V_D = V_{\text{DRM}}$ , Gate Open, $T_C = +110^\circ\text{C}$ , Note 1) .....	200V/ $\mu\text{s}$
Critical rate-of-Rise of commutation Voltage, Commutating dv/dt	
( $V_D = V_{\text{DRM}}$ , $I_T = 40\text{A}$ , Gate Unenergized, $T_C = +80^\circ\text{C}$ , Note 1) .....	3V/ $\mu\text{s}$
DC Gate-Trigger Current ( $V_D = 12\text{VDC}$ , $R_L = 30\Omega$ , $T_C = +25^\circ\text{C}$ ), $I_{\text{GT}}$	
( $T_{2+}$ Gate +, $T_{2-}$ Gate -) Quads I and III .....	100mA Max
( $T_{2+}$ Gate -, $T_{2-}$ Gate +) Quads II and IV .....	150mA Max
DC Gate-Trigger Voltage ( $V_D = 12\text{VDC}$ , $R_L = 30\Omega$ , $T_C = +25^\circ\text{C}$ ), $V_{\text{GT}}$ .....	2.5V Max
Gate-Controlled Turn-On Time, $T_{\text{gt}}$	
( $V_D = 400\text{V}$ , $I_{\text{GT}} = 200\text{mA}$ , $t_R = 0.1\mu\text{s}$ , $I_T = 10\text{A}$ (Peak), $T_C = +25^\circ\text{C}$ ) .....	3 $\mu\text{s}$

Note 1. All values apply in either direction.

