



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

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

Electrical Characteristics: (At Specified Case Temperature)

Peak Off-State Current, I_{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_{TM}	2.0V Max
DC Holding Current (Gate Open, $T_C = +25^{\circ}\text{C}$, Note 1), I_{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/ μs
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/ μs
DC Gate-Trigger Current ($V_D = 12\text{VDC}$, $R_L = 30\Omega$, $T_C = +25^{\circ}\text{C}$), I_{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_{GT}	2.5V Max
Gate-Controlled Turn-On Time, T_{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 μs

Note 1. All values apply in either direction.

