

NTE5646 TRIAC – Internally Triggered

Description:

The NTE5646 is a TRIAC that includes a diac trigger mounted inside the same package. This device saves the user the added expense of buying a discrete diac and the assembling associated with a gated triac. This device includes a dial trigger mounted inside the same isolated TO220 type package.

Absolute Maximum Ratings:

Repetitive Peak Off–State Voltage (Gate Open, $T_J = +110^{\circ}\text{C}$, Note 1), V_{DRM} 600V
 RMS On–State Current ($T_C = +80^{\circ}\text{C}$, Conduction Angle of 360°), $I_{\text{T(RMS)}}$ 10A
 Peak Surge (Non–Repetitive) On–State Current (One Cycle, at 50Hz or 60Hz), I_{TSM} 100A
 Peak Gate–Trigger Current (3sec Max), I_{GTM} 1.5A
 Operating Junction Temperature Range, T_{opr} -40° to $+110^{\circ}\text{C}$
 Storage Temperature Range, T_{stg} -40° to $+150^{\circ}\text{C}$
 Typical Thermal Resistance, Junction to Case, $R_{\theta\text{JC}}$ 2.8°C/W

Note 1. All values apply in either direction.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Off–State Current	I_{DRM}	Gate Open, $T_V = +110^{\circ}\text{C}$, $V_{\text{DRM}} = 600\text{V}$, Note 1	–	0.5	–	mA
Maximum On–State Voltage	V_{TM}	$I_T = 10\text{A}$, Note 1	–	–	1.5	V
DC Holding Current	I_{HOLD}	Gate Open, Note 1	–	–	60	mA
Critical Rate–of–Rise of Off–State Voltage	Critical dv/dt	$V_D = 600\text{V}$, Gate Open, $T_C = +110^{\circ}\text{C}$, Note 1	–	60	–	V/ μs
Critical Rate–of–Rise of Commutation Voltage	Commutating dv/dt	$T_C = +80^{\circ}\text{C}$, Gate Unenergized, $V_D = 600\text{V}$, $I_T = 10\text{A}$, Note 1	–	4	–	V/ μs
Gate–Controlled Turn–On Time	T_{gt}	$V_D = 600\text{V}$, $t_R = 0.1\mu\text{s}$, $I_T = 10\text{A}$ (Peak)	–	3	–	μs
Trigger DIAC Specifications						
Breakover Voltage Symmetry	$\Delta V_{\text{(BO)}}$		–	3	–	V
Breakover Voltage (Forward & Reverse)	V_{BO}		30	–	45	V
Dynamic Breakback Voltage (Forward & Reverse)	$[\Delta V \pm]$		–	5	–	V
Peak Breakover Current	I_{BO}		–	200	–	μA
Trigger Firing Capacitance	C		–	0.1	–	μF

Note 1. All values apply in either direction.

