



**ELECTRONICS, INC.**  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089

## NTE5400 thru NTE5406 Silicon Controlled Rectifier (SCR) 0.8 Amp Sensitive Gate

**Description:**

The NTE5400 through NTE5406 sensitive gate SCR semiconductors are halfwave unidirectional gate controlled rectifiers (SCR–thyristor) rated at 0.8 amps RMS maximum on–state current, with rated voltages up to 600 volts.

These devices feature 200 microamp gate sensitivity, 5 millamp holding current and 8 amp surge capabilities.

Available in a TO–92 plastic package, these devices feature excellent environmental stress and temperature cycling characteristics and, coupled with their small size and electrical performance, lend themselves to various types of control functions encountered with sensors, motors, lamps, relays, counters, triggers, etc.

**Absolute Maximum Ratings:**

Repetitive Peak Reverse Voltage ( $T_C = +100^\circ\text{C}$ ), $V_{RRM}$	
NTE5400 .....	30V
NTE5401 .....	60V
NTE5402 .....	100V
NTE5403 .....	150V
NTE5404 .....	200V
NTE5405 .....	400V
NTE5406 .....	600V
Repetitive Peak Off–State Voltage ( $T_C = +100^\circ\text{C}$ ), $V_{DRXM}$	
NTE5400 .....	30V
NTE5401 .....	60V
NTE5402 .....	100V
NTE5403 .....	150V
NTE5404 .....	200V
NTE5405 .....	400V
NTE5406 .....	600V
RMS On–State Current, $I_{T(RMS)}$ .....	0.8A
Peak Surge (Non–Repetitive) On–State Current (One Cycle at 50 or 60Hz), $I_{TSM}$ .....	8A
Peak Gate–Trigger Current ( $3\mu\text{s Max}$ ), $I_{GTM}$ .....	500mA
Peak Gate–Power Dissipation ( $I_{GT} \leq I_{GTM}$ for $3\mu\text{s Max}$ ), $P_{GM}$ .....	20W
Average Gate Power Dissipation, $P_{G(AV)}$ .....	200mW
Operating Temperature Range, $T_{opr}$ .....	$-40^\circ$ to $+100^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-40^\circ$ to $+150^\circ\text{C}$
Typical Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	$+5^\circ\text{C/W}$
Typical Thermal Resistance, Junction–to–Ambient, $R_{thJA}$ .....	$+200^\circ\text{C/W}$

**Electrical Characteristics:**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Off-State Current	$I_{RRM}$	$V_{RRM} = \text{Max}, V_{DRXM} = \text{Max}, T_C = +100^\circ\text{C}, R_{G-K} = 1\text{k}\Omega$	-	-	50	$\mu\text{A}$
	$I_{DRXM}$		-	-	50	$\mu\text{A}$
Maximum On-State Voltage	$V_{TM}$	$T_C = +25^\circ\text{C}, I_T = 1.2\text{A (Peak)}$	-	-	1.7	V
DC Holding Current	$I_{HOLD}$	$T_C = +25^\circ\text{C}$	-	-	5	mA
DC Gate-Trigger Current	$I_{GT}$	$V_D = 6\text{VDC}, R_L = 100\Omega, T_C = +25^\circ\text{C}$	-	50	200	$\mu\text{A}$
DC Gate-Trigger Voltage	$V_{GT}$	$V_D = 6\text{VDC}, R_L = 100\Omega, T_C = +25^\circ\text{C}$	-	-	0.8	V
$I^2t$ for Fusing Reference	$I^2t$	$> 1.5\text{msoc}$	-	-	0.15	$\text{A}^2\text{sec}$
Critical Rate of Applied Forward Voltage	$dv/dt$ (critical)	$T_C = +100^\circ\text{C}$	-	5	-	$\text{V}/\mu\text{s}$

