

NTE5408 thru NTE5410 Silicon Controlled Rectifier (SCR) 3 Amp Sensitive Gate, TO5

Description:

The NTE5408 through NTE5410 sensitive gate SCRs are designed to be driven directly with IC and MOS devices. These SCRs feature proprietary, void-free glass-passivated chips and are hermetically sealed in TO5 type packages. These 4A devices are available in voltages up to 600V and with a gate current of 200 μ A.

These NTE SCRs are reverse-blocking triode thyristors and may be switched from off-state to conduction by a current pulse applied to the gate terminal. The NTE5408 through NTE5410 are designed for control applications in lighting, heating, cooling, and static switching relays.

Absolute Maximum Ratings:

Repetitive Peak Reverse Voltage ($T_C = +100^\circ\text{C}$), V_{RRM}	
NTE5408	200V
NTE5409	400V
NTE5410	600V
Repetitive Peak Off-State Voltage ($T_C = +100^\circ\text{C}$), V_{DRXM}	
NTE5408	200V
NTE5409	400V
NTE5410	600V
RMS On-State Current ($T_C = +75^\circ\text{C}$, Conduction Angle of 180°), $I_{T(RMS)}$	
Peak Surge (Non-Repetitive) On-State Current (One Cycle at 50 or 60Hz), I_{TSM}	
Peak Gate-Trigger Current ($3\mu\text{s}$ Max), I_{GTM}	
Peak Gate-Power Dissipation ($I_{GT} \leq I_{GTM}$ for $3\mu\text{s}$ Max), P_{GM}	
Average Gate Power Dissipation, $P_{G(AV)}$	
Operating Temperature Range, T_{opr}	
Storage Temperature Range, T_{stg}	
Typical Thermal Resistance, Junction-to-Case, R_{thJC}	
	4A
	40A
	1A
	20W
	200mW
	-40° to $+100^\circ\text{C}$
	-40° to $+150^\circ\text{C}$
	$+5^\circ\text{C/W}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Off-State Current	I_{RRM}	$V_{RRM} = \text{Max}, V_{DRXM} = \text{Max},$ $T_C = +100^\circ\text{C}, R_{GK} = 1\text{k}\Omega$	–	–	0.75	mA
	I_{DRXM}		–	–	0.75	mA
Maximum On-State Voltage	V_{TM}	$I_T = 10\text{A (Peak)}$	–	–	2.2	V
DC Holding Current	I_{HOLD}	$R_{GK} = 1000\Omega$	–	–	5	mA
DC Gate-Trigger Current	I_{GT}	$V_D = 6\text{VDC}, R_L = 100\Omega$	–	–	200	μA
DC Gate-Trigger Voltage	V_{GT}	$V_D = 6\text{VDC}, R_L = 100\Omega$	–	–	0.8	V
Gate Controlled Turn-On Time	t_{gt}	$I_G \times 3_{GT}$	–	1.2	–	μs
I^2t for Fusing Reference	I^2t	For SCR Protection	–	–	2.6	A^2sec
Critical Rate of Applied Forward Voltage	dv/dt (critical)	$R_{GK} = 1\text{k}\Omega, T_C = +100^\circ\text{C}$	–	5	–	$\text{V}/\mu\text{s}$

