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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°), $I_{T(RMS)}$

4A

Peak Surge (Non-Repetitive) On-State Current (One Cycle at 50 or 60Hz), I_{TSM}

40A

Peak Gate-Trigger Current (3 μ s Max), I_{GTM}

1A

Peak Gate-Power Dissipation ($I_{GT} \leq I_{GTM}$ for 3 μ s Max), P_{GM}

20W

Average Gate Power Dissipation, $P_{G(AV)}$

200mW

Operating Temperature Range, T_{opr}

-40° to +100°C

Storage Temperature Range, T_{stg}

-40° to +150°C

Typical Thermal Resistance, Junction-to-Case, R_{thJC}

+5°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	-	V/ μs

