ELECTRONICS, INC.
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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 200μA.

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°C), V_{RRM}
- NTE5408 . . . . . 200V
- NTE5409 . . . . . 400V
- NTE5410 . . . . . 600V

Repetitive Peak Off–State Voltage (T_C = +100°C), V_{DRXM}
- NTE5408 . . . . . 200V
- NTE5409 . . . . . 400V
- NTE5410 . . . . . 600V

RMS On–State Current (T_C = +75°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 (3μs Max), I_{GTM} 1A

Peak Gate–Power Dissipation ($I_{GT} \le I_{GTM}$ for 3μs 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°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Off−State Current	I_{RRM}	V_{RRM} = Max, V_{DRXM} = Max, T_C = +100°C, R_{GK} = 1kΩ	−	−	0.75	mA
	I_{DRXM}		−	−	0.75	mA
Maximum On−State Voltage	V_{TM}	I_T = 10A (Peak)	−	−	2.2	V
DC Holding Current	I_{HOLD}	R_{GK} = 1000Ω	−	−	5	mA
DC Gate−Trigger Current	I_{GT}	V_D = 6VDC, R_L = 100Ω	−	−	200	μA
DC Gate−Trigger Voltage	V_{GT}	V_D = 6VDC, R_L = 100Ω	−	−	0.8	V
Gate Controlled Turn−On Time	t_{gt}	I_G x 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} = 1kΩ, T_C = +100°C	−	5	−	V/μs