ELECTRONICS, INC.
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NTE5452 thru NTE5458
Silicon Controlled Rectifier (SCR)
4 Amp Sensitive Gate

Description:

The NTE5452 through NTE5458 are sensitive gate 4 Amp SCR's in a TO202 type package designed to be driven directly with IC and MOS devices. These reverse–blocking triode thyristors may be switched from off–state to conduction by a current pulse applied to the gate terminal. They 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}
- NTE5452 . . . . . 30V
- NTE5453 . . . . . 50V
- NTE5454 . . . . . 100V
- NTE5455 . . . . . 200V
- NTE5456 . . . . . 300V
- NTE5457 . . . . . 400V
- NTE5458 . . . . . 600V

Repetitive Peak Off–State Voltage (T_C = +100°C), V_{DRXM}
- NTE5452 . . . . . 30V
- NTE5453 . . . . . 50V
- NTE5454 . . . . . 100V
- NTE5455 . . . . . 200V
- NTE5456 . . . . . 300V
- NTE5457 . . . . . 400V
- NTE5458 . . . . . 600V

RMS On–State Current, $I_{T(RMS)}$ 4A
Peak Surge (Non–Repetitive) On–State Current (One Cycle at 50 or 60Hz), I_{TSM} 20A
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:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Off–State Current	I_{RRM}	V_{RRM} = Max, V_{DRXM} = Max, T_C = +100°C, $R_{G–K}$ = 1kΩ	–	–	100	μA
	I_{DRXM}		–	–	100	μA
Maximum On–State Voltage	V_{TM}	T_C = +25°C, I_T = 4A (Peak)	–	–	2.2	V
DC Holding Current	I_{HOLD}	T_C = +25°C	–	–	3	mA
DC Gate–Trigger Current	I_{GT}	V_D = 6VDC, R_L = 100Ω, T_C = +25°C	–	50	200	μA
DC Gate–Trigger Voltage	V_{GT}	V_D = 6VDC, R_L = 100Ω, T_C = +25°C	–	–	0.8	V
Total Gate Controlled Turn–On Time	t_{gt}	T_C = +25°C	–	1.2	–	μs
I^2t for Fusing Reference	I^2t	> 1.5msoc	–	–	0.5	A^2sec
Critical rate of Applied Forward Voltage	dv/dt (critical)	$R_{G–K}$ = 1kΩ, T_C = +100°C	–	8	–	V/μs