ELECTRONICS, INC.
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NTE5461 thru NTE5468
Silicon Controlled Rectifier (SCR)
10 Amp

Description:

The NTE5461 through NTE5468 series silicon controlled rectifiers are designed primarily for half–wave AC control applications such as motor controls, heating controls, and power supplies; or wherever half–wave silicon gate–controlled, solid–state devices are needed. These devices are supplied in a TO220 type package.

Features:

- Glass Passivated Junctions and Center Gate Fire for Greater Parameter Uniformity and Stability
- Small, Rugged, Thermowatt Construction for Low Thermal Resistance, High Heat Dissipation, and Durability
- Blocking Voltage to 800 Volts

Absolute Maximum Ratings:

Peak Repetitive Reverse Voltage; Peak Repetitive Off–State Voltage (Note 1), V_{RRM}, V_{DRM}
- NTE5461 . . . . . 50V
- NTE5462 . . . . . 100V
- NTE5463 . . . . . 200V
- NTE5465 . . . . . 400V
- NTE5466 . . . . . 600V
- NTE5468 . . . . . 800V

Non–Repetitive Peak Reverse Voltage; Non–Repetitive Off–State Voltage, V_{RSM}, V_{DSM}
- NTE5461 . . . . . 75V
- NTE5462 . . . . . 125V
- NTE5463 . . . . . 250V
- NTE5465 . . . . . 500V
- NTE5466 . . . . . 700V
- NTE5468 . . . . . 900V

RMS Forward Current (All Conducting Angles, T_C = +75°C), $I_{T(RMS)}$ 10A
Peak Forward Surge Current (1 Cycle, Sine Wave, 60Hz, T_C = +80°C), I_{TSM} 100A
Circuit Fusing Considerations (T_J = –65° to +100°C, t = 1 to 8.3ms), I^2t . . . . . $40A^2s$
Forward Peak gate Power ($t \le 10\mu s$), P_{GM} 16W
Forward Average Gate Power, $P_{G(AV)}$ 500mW
Operating Junction Temperature Range, T_J . . . . . –40° to +100°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2°C/W

Note 1. V_{DRM} and V_{RRM} for all types can be applied on a continuous DC basis without incurring damage. Ratings apply for zero or negative gate voltage. Devices shall not have a positive bias applied to the gate concurrently with a negative potential on the anode.

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current	I_{DRM}, I_{RRM}	Rated V_{DRM} or V_{RRM}	T_C = +25°C	–	–	10	µA
			T_C = +100°C	–	–	2	mA
Instantaneous On–State Voltage	V_T	I_{TM} = 30A(Peak), Pulse Width ≤ 1ms, Duty Cycle ≤ 2%		–	1.7	2.0	V
Gate Trigger Current (Continuous DC)	I_{GT}	V_D = 12V, R_L = 30Ω		–	8	15	mA
Gate Trigger Voltage (Continuous DC)	V_{GT}	V_D = 12V, R_L = 30Ω		–	0.9	1.5	V
Holding Current	I_H	Gate Open, V_D = 12V, I_T = 150mA		–	10	20	mA
Gate Controlled Turn–On Time	t_{gt}	V_D = Rated V_{DRM}, I_{TM} = 2A, I_{GR} = 80mA		–	1.6	–	µs
Circuit Commutated Turn–Off Time	t_q	V_D = V_{DRM}, I_{TM} = 2A, Pulse Width = 50µs, dv/dt = 200V/µs, di/dt = 10A/µs, T_C = +75°C		–	25	–	µs
Critical Rate–of–Rise of Off–State Voltage	dv/dt	V_D = Rated V_{DRM}, Exponential Rise, T_C = +100°C		–	100	–	V/µs