ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

NTE5550 thru NTE5558
Silicon Controlled Rectifier (SCR)
25 Amp, TO220

Description:

The NTE5550 thru NTE5558 SCR's are designed primarily for half–wave AC control applications, such as motor controls, heating controls and power supply crowbar circuits.

Features:

- Glass Passivated Junctions with Center Gate Fire for Greater Parameter Uniformity and Stability.
- Small, Rugged, Thermowatt Constructed for Low Thermal Resistance, High Heat Dissipation and Durability.
- Blocking Voltage to 800 Volts
- 300A Surge Current Capability

Absolute Maximum Ratings:

Peak Reverse Blocking Voltage (Note 1), V_{RRM}
- NTE5550 . . . . . 50V
- NTE5552 . . . . . 200V
- NTE5554 . . . . . 400V
- NTE5556 . . . . . 600V
- NTE5558 . . . . . 800V

Forward Current (T_C = +85°C), $I_{T(RMS)}$ 25A
(All Conduction Angles), $I_{T(AV)}$ 16A

Peak Non–Repetitive Surge Current (8.3ms), I_{TSM} 300A
(1/2 Cycle, Sine Wave, 1.5ms) 350A

Forward Peak Gate Power, P_{GM} 20W

Forward Average Gate Power, $P_{G(AV)}$ 0.5W

Forward Peak Gate Current, I_{GM} 2A

Operating Junction Temperature Range, T_J . . . . . –40° to +125°C

Storage Temperature Range, T_{stg} . . . . . –40° to +150°C

Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 1.5°C/W

Note 1. 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 should not be tested for blocking capability in a manner such that the voltage supplied exceeds the rated blocking voltage.

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

Parameter	Symbol	Min	Typ	Max	Unit
Peak Forward Blocking Voltage, (T_J = +125°C) NTE5550 NTE5552 NTE5554 NTE5556 NTE5558	V_{DRM}	 50 200 400 600 800	 – – – – –	 – – – – –	V
Peak Forward or Reverse Blocking Current, (Rated V_{DRM} or V_{RRM}) T_J = +25°C T_J = +125°C	I_{DRM}, I_{RRM}	 – –	 – –	 10 2	 μA mA
Forward "ON" Voltage, (I_{TM} = 50A, Note 2)	V_{TM}	–	–	1.8	V
Gate Trigger Current (Continuous DC), T_C = +25°C (Anode Voltage = 12Vdc, R_L = 100Ω) T_C = –40°C	I_{GT}	– –	– 25	40 75	mA
Gate Trigger Voltage (Continuous DC) (Anode Voltage = 12Vdc, R_L = 100Ω, T_C = –40°C)	V_{GT}	–	1	1.5	V
Gate Non–Trigger Voltage (Anode Voltage = Rated V_{DRM}, R_L =100Ω, T_J = +125°C)	V_{GD}	0.2	–	–	V
Holding Current (Anode Voltage = 12Vdc, T_C = –40°C)	I_H	–	35	40	mA
Turn–On Time (I_{TM} = 25A, I_{GT} = 50mAdc)	t_{gt}	–	1.5	2	μs
Turn–Off Time (V_{DRM} = rated voltage) (I_{TM} =25A, I_R = 25A) (I_{TM} =25A, I_R = 25A, T_J = +125°C)	t_q	 – –	 15 35	 – –	μs
Critical Rate of Rise of Off–State Voltage (Gate Open, Rated V_{DRM}, Exponential Waveform)	dv/dt	–	50	–	V/μs

Note 2. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.