ELECTRONICS, INC.
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NTE5576 & NTE5578
Silicon Controlled Rectifier (SCR)
175 Amps, TO94

Absolute Maximum Ratings: (T_J = +125°C unless otherwise specified)

Repetitive Peak Voltages, V_{DRM} & V_{RRM}
- NTE5576 . . . . . 600V
- NTE5578 . . . . . 1600V

Non–Repetitive Peak Off–State Voltage, V_{DSM}
- NTE5576 . . . . . 600V
- NTE5578 . . . . . 1600V

Non–Repetitive Peak Reverse Blocking Voltage, V_{RSM}
- NTE5576 . . . . . 700V
- NTE5578 . . . . . 1700V

Average On–State Current (Half Sine Wave, T_C = +90°C), $I_{T(AV)}$ 110A

RMS On–State Current, $I_{(RMS)}$ 175A

Continuous On–State Current, I_T 175A

Peak One–Cycle, Non–Repetitive Surge Current (10ms Duration), I_{TSM}
- 60% V_{RRM} reapplied 2450A
- $V_R \le 10V$ 2695A

Maximum I^2t for Fusing ($V_R \le 10V$), I^2t
- 10ms Duration . . . . . 36300A^2sec
- 10ms Duration . . . . . 27000A^2sec

Peak Forward Gate Current (Anode Positive with Respect to Cathode), I_{FGM} 19A

Peak Forward Gate Voltage (Anode Positive with Respect to Cathode), V_{FGM} 18V

Peak Reverse Gate Voltage, V_{RGM} 5V

Average Gate Power, P_G 2W

Peak Gate Power (100μs Pulse Width), P_{GM} 100W

Rate of Rise of Off–State Voltage (To 80% V_{DRM}, Gate Open), dv/dt 200V/μs

Rate of Rise of ON–State Current, di/dt
(Gate Drive 20V, 20Ω, with $t_r \le 1\mu s$, Anode Voltage ≤ 80% V_{DRM})
- Repetitive 500A/μs
- Non–Repetitive 1000A/μs

Electrical Characteristics: (Maximum values @ T_J = +125°C unless otherwise specified)

Peak On–State Voltage (I_{TM} = 377A), V_{TM} 1.57V

Forward Conduction Threshold Voltage, V_O 0.9V

Forward Conduction Slope Resistance, r 1.79mΩ

Repetitive Peak Off–State Current (At V_{DRM}), I_{DRM} 20mA

Repetitive Peak Reverse Current (At V_{RRM}), I_{RRM} 20mA

Maximum Gate Current Required to Fire All Devices (V_A = 6V, I_A = 2A, T_J = +25°C), I_{GT} . . 150mA

Maximum Gate Voltage Required to Fire All Devices (V_A = 6V, I_A = 2A, T_J = +25°C), V_{GT} 3V

Maximum Holding (V_A = 6V, I_A = 2A, T_J = +25°C), I_H 600mA

Electrical Characteristics (Cont'd): (Maximum values @ T_J = +125°C unless otherwise specified)

Maximum Gate Voltage which will not Trigger any Device, V_{GD} 0.25V

Operating Temperature Range, T_C . . . . . −40° to +125°C

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

Thermal Resistance, Junction−to−Case (V_F = Max Rating), R_{thJC}

DC and 180° Sine wave . . . . . 0.23°C/W

120° Rectangular wave . . . . . 0.28°C/W

Thermal Resistance, Case−to−Heat Sink, R_{thC-HS} . . . . . 0.08°C/W