ELECTRONICS, INC.
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NTE5563
Silicon Controlled Rectifier (SCR)
1600V, 1880 Amp, 2.9” Dia Hockey Puck

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

Repetitive Peak Voltages, V_{RRM}, V_{DRM}, V_{DSM} 1600V

Non–Repetitive Peak Reverse Blocking Voltage, ... 1700V

Average On–State Current (Half Sine Wave), $I_{T(AV)}$

T_{hs} = +55°C (Double Side Cooled) 1400A

T_{hs} = +85°C (Single Side Cooled) 550A

RMS On–State Current (T_{hs} = +25°C, Double Side Cooled), $I_{T(RMS)}$ 2840A

Continuous On–State Current (T_{hs} = +25°C, Double Side Cooled), I_T 2400A

Peak One–Cycle Surge (10ms duration, 60% V_{RRM} re–applied), $I_{TSM\ (1)}$ 20500A

Non–Repetitive On–State Current (10ms duration, $V_R \le 10V$), $I_{TSM\ (2)}$ 22550A

Maximum Permissible Surge Energy ($V_R \le 10V$), I^2t

10ms duration . . . . . 2500000A^2s

3ms duration . . . . . 1890000A^2s

Peak Forward Gate Current (Anode positive with respect to cathode), I_{FGM} 20A

Peak Forward Gate Voltage (Anode positive with respect to cathode), V_{FGM} 22V

Peak Reverse Gate Voltage, V_{RGM} 5V

Average Gate Power, P_G 4W

Peak Gate Power (100μs pulse width), P_{GM} 120W

Rate of Rise of Off–State Voltage (To 80% V_{DRM} gate open–circuit), 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

Operating Temperature Range, T_{hs} . . . . . –40° to +125°C

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

Thermal Resistance, Junction–to–Heatsink, $R_{th(j-hs)}$

(For a device with a maximum forward voltage drop characteristic)

Double Side Cooled . . . . . 0.03°C/W

Single Side Cooled . . . . . 0.06°C/W

Peak On–State Voltage (I_{TM} = 2550A), V_{TM} 1.41V

Forward Conduction Threshold Voltage, V_O 0.965V

Forward Conduction Slope Resistance, r 0.174mΩ

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

Repetitive Peak Off−State Current (At V_{DRM}), I_{DRM} 100mA
Repetitive Peak Reverse Current (At V_{RRM}), I_{RRM} 100mA
Maximum Gate Current (V_A = 6V, I_A = 2A, T_J = +25°C), I_{GT} 300mA
Maximum Gate Voltage (V_A = 6V, I_A = 2A, T_J = +25°C), V_{GT} 3V
Maximum Holding Current (V_A = 6V, I_A = 2A, T_J = +25°C), I_H 1A
Maximum Gate Voltage Which Will Not Trigger Any Device, V_{GD} 0.25V