



ELECTRONICS, INC.
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NTE5563 Silicon Controlled Rectifier (SCR) 1880 Amp

Absolute Maximum Ratings: ($T_J = +125^\circ\text{C}$ 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), $I_{T(AV)}$ | |
| $T_{hs} = +55^\circ\text{C}$ (Double Side Cooled) | 1400A |
| $T_{hs} = +85^\circ\text{C}$ (Single Side Cooled) | 550A |
| RMS On-State Current ($T_{hs} = +25^\circ\text{C}$, Double Side Cooled), $I_{T(RMS)}$ | 2840A |
| Continuous On-State Current ($T_{hs} = +25^\circ\text{C}$, 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, $V_R \leq 10V$), $I_{TSM(2)}$ | 22550A |
| Maximum Permissible Surge Energy ($V_R \leq 10V$), I^2t | |
| 10ms duration | 2500000A ² s |
| 3ms duration | 1890000A ² s |
| 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 (100 μ s pulse width), P_{GM} | 120W |
| Rate of Rise of Off-State Voltage (To 80% V_{DRM} gate open-circuit), dv/dt | 200V/ μ s |
| Rate of Rise of On-State Current, di/dt | |
| (Gate drive 20V, 20 Ω with $t_r \leq 1\mu$ s, anode voltage $\leq 80\%$ V_{DRM}) | |
| Repetitive | 500A/ μ s |
| Non-Repetitive | 1000A/ μ s |
| 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 | 0.174m Ω |

Absolute Maximum Ratings (Cont'd): ($T_J = +125^\circ\text{C}$ 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 ($V_A = 6\text{V}$, $I_A = 2\text{A}$, $T_J = +25^\circ\text{C}$), I_{GT} | 300mA |
| Maximum Gate Voltage ($V_A = 6\text{V}$, $I_A = 2\text{A}$, $T_J = +25^\circ\text{C}$), V_{GT} | 3V |
| Maximum Holding Current ($V_A = 6\text{V}$, $I_A = 2\text{A}$, $T_J = +25^\circ\text{C}$), I_{H} | 1A |
| Maximum Gate Voltage Which Will Not Trigger Any Device, V_{GD} | 0.25V |

