



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

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

Absolute Maximum Ratings: ($T_J = +125^\circ\text{C}$ 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, $T_C = +90^\circ\text{C}$), $I_{\text{T(AV)}}$

RMS On-State Current, $I_{\text{(RMS)}}$

Continuous On-State Current, I_{T}

Peak One-Cycle, Non-Repetitive Surge Current (10ms Duration), I_{TSM}

60% V_{RRM} reapplied	2450A
$V_R \leq 10\text{V}$	2695A

Maximum I^2t for Fusing ($V_R \leq 10\text{V}$), I^2t

10ms Duration	$36300\text{A}^2\text{sec}$
10ms Duration	$27000\text{A}^2\text{sec}$

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

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

Peak Reverse Gate Voltage, V_{RGM}

Average Gate Power, P_G

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

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

Rate of Rise of ON-State Current, di/dt

(Gate Drive 20V, 20 Ω , with $t_r \leq 1\mu\text{s}$, Anode Voltage $\leq 80\%$ V_{DRM})	
Repetitive	$500\text{A}/\mu\text{s}$
Non-Repetitive	$1000\text{A}/\mu\text{s}$

Electrical Characteristics: (Maximum values @ $T_J = +125^\circ\text{C}$ unless otherwise specified)

Peak On-State Voltage ($I_{\text{TM}} = 377\text{A}$), V_{TM}

1.57V

Forward Conduction Threshold Voltage, V_O

0.9V

Forward Conduction Slope Resistance, r

1.79m Ω

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 ($V_A = 6\text{V}$, $I_A = 2\text{A}$, $T_J = +25^\circ\text{C}$), I_{GT} ..

150mA

Maximum Gate Voltage Required to Fire All Devices ($V_A = 6\text{V}$, $I_A = 2\text{A}$, $T_J = +25^\circ\text{C}$), V_{GT} ..

3V

Maximum Holding ($V_A = 6\text{V}$, $I_A = 2\text{A}$, $T_J = +25^\circ\text{C}$), I_H

600mA

Electrical Characteristics (Cont'd): (Maximum values @ $T_J = +125^\circ\text{C}$ 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 ($V_F = \text{Max Rating}$), R_{tnJC}	
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

