



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

## NTE5551 & NTE5553 Silicon Controlled Rectifier (SCR) 750 Amp, TO200AB

**Absolute Maximum Ratings:** ( $T_J = +125^\circ\text{C}$  unless otherwise specified)

Repetitive Peak Voltages, $V_{RRM}$ , $V_{DRM}$ , $V_{DSM}$	
NTE5551 .....	600V
NTE5553 .....	1600V
Non-Repetitive Peak Reverse Blocking Voltage, $V_{RSM}$	
NTE5551 .....	700V
NTE5553 .....	1700V
Average On-State Current (Half Sine Wave), $I_{T(AV)}$	
$T_{hs} = +55^\circ\text{C}$ (Double Side Cooled) .....	390A
$T_{hs} = +85^\circ\text{C}$ (Single Side Cooled) .....	160A
RMS On-State Current ( $T_{hs} = +25^\circ\text{C}$ , Double Side Cooled), $I_{T(RMS)}$ .....	780A
Continuous On-State Current ( $T_{hs} = +25^\circ\text{C}$ , Double Side Cooled), $I_T$ .....	668A
Peak One-Cycle Surge (10ms duration, 60% $V_{RRM}$ re-applied), $I_{TSM(1)}$ .....	4650A
Non-Repetitive On-State Current (10ms duration, $V_R \leq 10V$ ), $I_{TSM(2)}$ .....	5120A
Maximum Permissible Surge Energy ( $V_R \leq 10V$ ), $I^2t$	
10ms duration .....	131000A <sup>2</sup> s
3ms duration .....	97350A <sup>2</sup> s
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 (100 $\mu$ s pulse width), $P_{GM}$ .....	100W
Rate of Rise of Off-State Voltage (To 80% $V_{DRM}$ gate open-circuit), $dv/dt$ .....	200V/ $\mu$ s
Rate of Rise of On-State Current, $di/dt$	
(Gate drive 20V, 20 $\Omega$ with $t_r \leq 1\mu$ s, anode voltage $\leq 80\%$ $V_{DRM}$ )	
Repetitive .....	500A/ $\mu$ s
Non-Repetitive .....	1000A/ $\mu$ 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 .....	0.095°C/W
Single Side Cooled .....	0.190°C/W

**Absolute Maximum Ratings (Cont'd):** ( $T_J = +125^\circ\text{C}$  unless otherwise specified)

Peak On-State Voltage ( $I_{TM} = 840\text{A}$ ), $V_{TM}$ .....	1.75V
Forward Conduction Threshold Voltage, $V_O$ .....	0.92V
Forward Conduction Slope Resistance, $r$ .....	0.99m $\Omega$
Repetitive Peak Off-State Current (At $V_{DRM}$ ), $I_{DRM}$ .....	20mA
Repetitive Peak Reverse Current (At $V_{RRM}$ ), $I_{RRM}$ .....	20mA
Maximum Gate Current ( $V_A = 6\text{V}$ , $I_A = 1\text{A}$ , $T_J = +25^\circ\text{C}$ ), $I_{GT}$ .....	150mA
Maximum Gate Voltage ( $V_A = 6\text{V}$ , $I_A = 1\text{A}$ , $T_J = +25^\circ\text{C}$ ), $V_{GT}$ .....	3V
Maximum Holding Current ( $V_A = 6\text{V}$ , $I_A = 1\text{A}$ , $T_J = +25^\circ\text{C}$ ), $I_H$ .....	600mA
Maximum Gate Voltage Which Will Not Trigger Any Device, $V_{GD}$ .....	0.25V

