



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

## NTE5561, NTE5594 thru NTE5596 Silicon Controlled Rectifier (SCR) 850 Amp, TO200AC

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

Repetitive Peak Voltage, $V_{DRM}$	
NTE5561 .....	1600V
NTE5594 .....	200V
NTE5595 .....	600V
NTE5596 .....	1200V
Repetitive Peak Reverse Voltage, $V_{RRM}$	
NTE5561 .....	1600V
NTE5594 .....	200V
NTE5595 .....	600V
NTE5596 .....	1200V
Non-Repetitive Peak Off-State Voltage, $V_{DSM}$	
NTE5561 .....	1600V
NTE5594 .....	200V
NTE5595 .....	600V
NTE5596 .....	1200V
Non-Repetitive Peak Reverse Blocking Voltage, $V_{RSM}$	
NTE5561 .....	1700V
NTE5594 .....	300V
NTE5595 .....	700V
NTE5596 .....	1200V
Average On-State Current (Half Sine Wave), $I_{T(AV)}$	
+55°C Heatsink Temperature, Double Side Cooled .....	820A
+85°C Heatsink Temperature, Single Side Cooled .....	320A
RMS On-State Current (+25°C Heatsink Temperature, Double Side Cooled), $I_{T(RMS)}$ .....	
1640A	
Continuous On-State Current (+25°C Heatsink Temperature, Double Side Cooled), $I_T$ .....	
1400A	
Peak One Cycle Surge (Non-Repetitive) On-State Current (10ms Duration), $I_{TSM}$	
60% $V_{RRM}$ re-applied .....	11500A
$V_R \leq 10V$ .....	12650A
Maximum Permissible Surge Energy ( $V_R \leq 10V$ ), $I^2t$	
10ms Duration .....	8000000A <sup>2</sup> s
3ms Duration .....	5900000A <sup>2</sup> 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 (100µs Pulse Width), $P_{GM}$ .....	
120W	
Rate of Rise of Off-State Voltage (To 80% $V_{DRM}$ Gate Open-Circuit), $dv/dt$ .....	
500V/µs	
Rate of Rise of Off-State Current, $di/dt$	
(Gate Drive 20V, 20Ω with $t_r \leq 1\mu\text{s}$ , Anode Voltage $\leq 80\% V_{DRM}$ )	
Repetitive .....	500A/µs
Non-Repetitive .....	1000A/µs
Operating Temperature Range, $T_{hs}$ .....	
-40° to +125°C	
Storage Temperature Range, $T_{hs}$ .....	
-40° to +150°C	

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

Peak On-State Voltage ( $I_{TM} = 1700\text{A}$ ), $V_{TM}$ .....	1.75V
Forward Conduction Threshold Voltage, $V_O$ .....	1.08V
Forward Conduction Slope Resistance, $r$ .....	$0.395\Omega$
Repetitive Peak Off-State Current (At $V_{DRM}$ ), $I_{DRM}$ .....	60mA
Repetitive Peak Reverse Current (At $V_{RRM}$ ), $I_{RRM}$ .....	60mA
Maximum Gate Current Required to Fire All Devices ( $T_J = +25^\circ\text{C}$ , $V_A = 6\text{V}$ , $I_A = 2\text{A}$ ), $I_{GT}$ ..	200mA
Maximum Gate Voltage Required to Fire All Devices ( $T_J = +25^\circ\text{C}$ , $V_A = 6\text{V}$ , $I_A = 2\text{A}$ ), $V_{GT}$ .....	3V
Maximum Holding Current ( $T_J = +25^\circ\text{C}$ , $V_A = 6\text{V}$ , $I_A = 2\text{A}$ ), $I_H$ .....	1A
Maximum Gate Voltage which will Not Trigger Any Device, $V_{GD}$ .....	0.25V
Thermal Resistance, Junction-to-Heatsink for a Device with a Max. Forward Voltage Drop, $R_{thJ-HS}$	
Double Side Cooled .....	$0.044^\circ\text{C/W}$
Single Side Cooled .....	$0.088^\circ\text{C/W}$

