



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

## NTE5580 thru NTE5585 Silicon Controlled Rectifier (SCR) 275 Amp, TO93

**Features:**

- Center Fired Gate
- All Diffused Design
- Low Gate Current
- Low Thermal Impedance
- High Surge

**Electrical Characteristics:**

Repetitive Peak Off-State and Reverse Voltage,  $V_{DRM}$  &  $V_{RRM}$

NTE5580 .....	200V
NTE5582 .....	600V
NTE5584 .....	1200V
NTE5585 .....	1600V

Maximum RMS On-State Current,  $I_{T(RMS)}$  ..... 275A

Maximum Average On-State Current,  $I_{T(AV)}$

$T_C = +88^\circ\text{C}$ , 180° conduction .....	150A
$T_C = +80^\circ\text{C}$ , 3 phase conduction .....	135A

Maximum Peak One-Cycle, Non-Repetitive Surge Current,  $I_{TSM}$

50Hz .....	3200A
60Hz .....	3500A

Maximum  $I^2t$  for Fusing (1.5msec),  $I^2t$  ..... 32,000A<sup>2</sup>sec

Peak On-State Voltage ( $T_J = +25^\circ\text{C}$ , 180° conduction, Rated  $I_{T(AV)}$ ),  $V_{TM}$  ..... 1.7V

Maximum Thermal Resistance, Junction-to-Case,  $R_{thJC}$  ..... 0.14°C/W

Typical Turn-Off Time ( $T_J = 125^\circ\text{C}$ ),  $t_q$  ..... 250µs

Rate-of-Rise of Turned-On Current,  $di/dt$  ..... 200A/µs

Operating Junction Temperature Range,  $T_J$  ..... -40° to +125°C

Maximum Reverse Recovered Charge ( $T_J = +25^\circ\text{C}$ ),  $Q_{RR}$  ..... 200µc

Maximum Critical Rate-of-Rise of Off-State Voltage,  $dV/dt$

Exponential @ Max. Rated  $T_J$  ..... 200V/µs

Maximum Required Gate Current to Trigger,  $I_{GT}$

$T_J = -40^\circ\text{C}$ .....	200mA
$T_J = +25^\circ\text{C}$ .....	150mA

Maximum Required Gate Voltage to Trigger ( $T_J = -40^\circ$  to  $+125^\circ\text{C}$ ),  $V_{GT}$  ..... 3V

Peak On-State Voltage,  $V_F$  ..... Note 1

Maximum Stud Torque ..... 300 In-Lbs (33.9 N-M)

Note 1.  $V_F = A + B \cdot L_N(I) + C \cdot I + D\sqrt{I}$

Where:  $I_{MIN} = 10A$   
 $I_{MAX} = 3000A$   
 $A = .523$   
 $B = .022$   
 $C = .0005$   
 $D = .038$

