

NTE5580 thru NTE5585 Silicon Controlled Rectifier for Phase Control Applications

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 32,000A²sec

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

