ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE5587, NTE5589, NTE5593
Silicon Controlled Rectifier
for Phase Control Applications

Features:
- Low On–State Voltage
- High di/dt
- High dv/dt
- Excellent Surge and I^2t Ratings

Applications:
- Power Supplies
- Battery Chargers
- Motor Controls

Absolute Maximum Ratingsand Electrical Characteristics:

Repetitive Peak Voltages, V_{DRM} & V_{RRM}
- NTE5587 . . . . . 600V
- NTE5589 . . . . . 1200V
- NTE5593 . . . . . 1600V

RMS On–State Current, $I_{T(RMS)}$ 550A

Average On–State Current, $I_{T(AV)}$ 350

Peak One–Cycle, Non–Repetitive On–State Surge Current, I_{TSM}
- 50Hz 9100A
- 60Hz 10,000A

Critical Rate–of–Rise of On–State Current, di/dt
- Repetitive 150A/μs
- Non–Repetitive 800A/μs

I^2t fo Fusing (8.2ms), I^2t . . . . . 416,000A^2sec

Peak Gate Power Dissipation, P_{GM} 16W

Average Gate Power Dissipation, $P_{G(AV)}$ 3W

Peak On–State Voltage (I_{TM} = 625A, T_J = +25°C), V_{TM} 1.4V

Peak Forward Leakage Current (At V_{DRM}, T_J = +125°C), I_{DRM} 30mA

Peak Reverse Leakage Current (At V_{RRM}, T_J = +125°C), I_{RRM} 30mA

Gate Current to Trigger (V_D = 12V, T_J = +25°C), I_{GT} 150mA

Gate Voltage to Trigger (V_D = 12V, T_J = +25°C), V_{GT} 3V

Non–Triggering Gate Voltage (At V_{DRM}, T_J = +125°C), V_{GDM} 0.15V

Absolute Maximum Ratingsand Electrical Characteristics (Cont'd):

Peak Forward Gate Current, I_{GTM} 4A

Peak Reverse Gate Voltage, V_{GRM} 5V

Typical Turn–Off Time, t_q

(I_T = 250A, di_R/dt = 25A/µs, re–applied, dv/dt = 20V/µs, linear to 0.8V_{DRM}, T_J = +125°C) 150µs

Typical Turn–On Time (V_D = 100V, I_T = 100A), t_{on} 7µs

Minimum Critical dv/dt exponential to V_{DRM} (T_J = +125°C), dv/dt 300V/µs

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

Storage Temperature Range, T_{stg} . . . . . –40° to +150°C

Maximum Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 0.10°C/W

Maximum Thermal Resistance, Case–to–Sink (Lubricated), R_{thCS} . . . . . 0.05°C/W

Mounting Torque . . . . . 360in.–lb.

Mounting Torque (Lubricated) 400kg–cm