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# NTE5480 thru NTE5487
# Silicon Controlled Rectifier (SCR)
# 8 Amp, TO64

**Description:**

The NTE5480 through NTE5487 are multi–purpose PNPN silicon controlled rectifiers in a TO64 type package suited for industrial and consumer applications. These 8 amp devices are available in voltages ranging from 25V to 600V.

**Features:**

- Uniform Low–Level Noise–Immune Gate Triggering: $I_{GT}$ = 10mA Typ @ $T_C$ = +25°C
- Low Forward "ON" Voltage: $v_T$ = 1V Typ @ 5A @ +25°C
- High Surge–Current Capability: $I_{TSM}$ = 100A Peak
- Shorted Emitter Construction

**Absolute Maximum Ratings:** ($T_J$ = –40° to +100°C unless otherwise specified)

Peak Repetitive Forward and Reverse Blocking Voltage (Note 1), $V_{DRM}$ or $V_{RRM}$
- NTE5480 . . . . . 25V
- NTE5481 . . . . . 50V
- NTE5482 . . . . . 100V
- NTE5483 . . . . . 200V
- NTE5484 . . . . . 300V
- NTE5485 . . . . . 400V
- NTE5486 . . . . . 500V
- NTE5487 **(This device is discontinued)** . . . . . 600V

Forward Current RMS, $I_{T(RMS)}$ . . . . . 8A

Peak Forward Surge Current (One Cycle, 60Hz, $T_J$ = –40° to +100°C, $I_{TSM}$ . . . . . 100A

Circuit Fusing ($t \le 8.3$ms, $T_J$ = –40° to +100°C), $I^2t$ . . . . . $40A^2s$

Peak Gate Power, $P_{GM}$ . . . . . 5W

Average Gate Power, $P_{G(AV)}$ . . . . . 0.5W

Peak Gate Current, $I_{GM}$ . . . . . 2A

Peak Gate Voltage (Note 2), $V_{GM}$ . . . . . 10V

Operating Temperature Range, $T_J$ . . . . . –40° to +100°C

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

Typical Thermal Resistance, Junction–to–Case, $R_{thJC}$ . . . . . 1.5°C/W

Typical Thermal Resistance, Case–to–Ambient, $R_{thJA}$ . . . . . 50°C/W

Note 1. Ratings apply for zero or negative gate voltage. Devices should not be tested for blocking capability in a manner such that the voltage applied exceeds the rated blocking voltage.

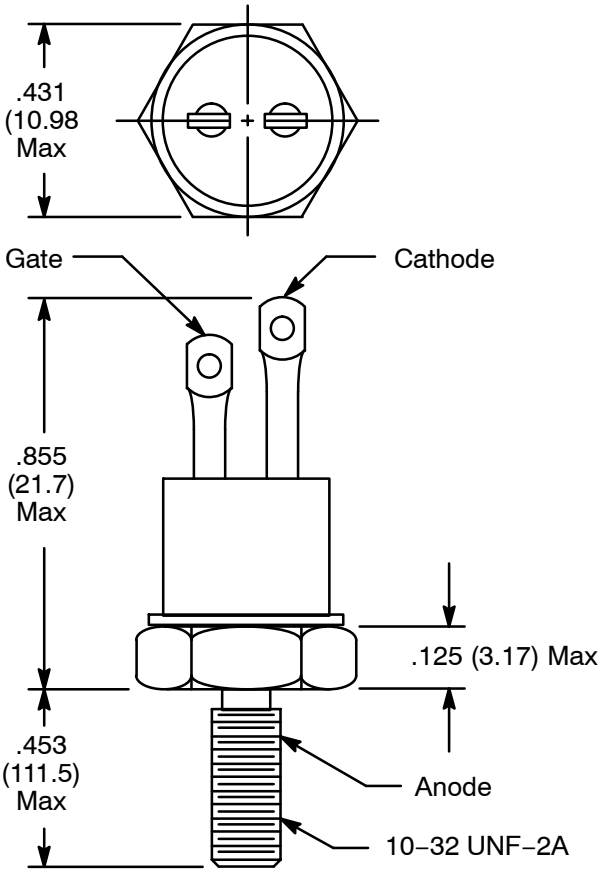
Note 2. Devices should not be operated with a positive bias applied to the gate concurrently with a negative potential applied to the anode.

**Electrical Characteristics:** ($T_C$ = +25°C unless otherwise specified)

| Parameter | Symbol | Test Conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| Peak Forward or Reverse Blocking Current | $I_{DRM}$, $I_{RRM}$ | Rated $V_{DRM}$ or $V_{RRM}$, Gate Open | $T_J$ = +25°C | – | – | 10 | μA |
| | | | $T_J$ = +100°C | – | – | 2 | mA |
| Gate Trigger Current (Continuous DC) | $I_{GT}$ | $V_D$ = 7V, $R_L$ = 100Ω, Note 3 | | – | 10 | 30 | mA |
| | | | $T_C$ = −40°C | – | – | 60 | mA |
| Gate Trigger Voltage (Continuous DC) | $V_{GT}$ | $V_D$ = 7V, $R_L$ = 100Ω | | – | 0.75 | 1.5 | V |
| | | | $T_C$ = −40°C | – | – | 2.5 | V |
| | | | $T_J$ = +100°C | 0.2 | – | – | V |
| Forward “ON” Voltage | $v_{TM}$ | $I_{TM}$ = 15.7A, Note 4 | | – | 1.4 | 2.0 | V |
| Holding Current | $I_H$ | $V_D$ = 7V, Gate Open | | – | 10 | 30 | mA |
| | | | $T_C$ = −40°C | – | – | 60 | mA |
| Turn−On Time ($t_d$ + $t_r$) | $t_{on}$ | $I_G$ = 20mA, $I_F$ = 5A, $V_D$ = Rated $V_{DRM}$ | | – | 1 | – | μs |
| Turn−Off Time | $t_{off}$ | $I_F$ = 5A, $I_R$ = 5A, dv/dt = 30V/μs | | – | 15 | – | μs |
| | | | $T_J$ = +100°C, $V_D$ = Rated $V_{DRM}$ | – | 25 | – | μs |
| Forward Voltage Application Rate (Exponential) | dv/dt | Gate Open, $T_J$ = +100°C, $V_D$ = Rated $V_{DRM}$ | | – | 50 | – | V/μs |

Note 3. For optimum operation, i.e. faster turn−on, lower switching losses, best di/dt capability, recommended $I_{GT}$ = 200mA minimum.

Note 4. Pulsed, 1ms max., Duty Cycle ≤ 1%.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