

## NTE5586 & NTE5588 Silicon Controlled Rectifier for Phase Control Applications

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

Repetitive Peak Voltages,  $V_{\text{DRM}}$  &  $V_{\text{RRM}}$

NTE5586 .....	600V
NTE5588 .....	1600V

Non-Repetitive Peak Off-State Voltage,  $V_{\text{DSM}}$

NTE5586 .....	600V
NTE5588 .....	1600V

Non-Repetitive Peak Reverse Blocking Voltage,  $V_{\text{RSM}}$

NTE5586 .....	700V
NTE5588 .....	1700V

Average On-State Current (Half Sine Wave,  $T_C = +85^\circ\text{C}$ ),  $I_{\text{T(AV)}}$  .....

RMS On-State Current,  $I_{\text{(RMS)}}$  .....

Continuous On-State Current,  $I_{\text{T}}$  .....

Peak One-Cycle, Non-Repetitive Surge Current (10ms Duration),  $I_{\text{TSM}}$

60% $V_{\text{RRM}}$ reapplied .....	4650A
$V_{\text{R}} \leq 10\text{V}$ .....	5120A

Maximum  $I^2t$  for Fusing ( $V_{\text{R}} \leq 10\text{V}$ ),  $I^2t$

10ms Duration .....	131,000A <sup>2</sup> sec
10ms Duration .....	97350A <sup>2</sup> sec

Peak Forward Gate Current (Anode Positive with Respect to Cathode),  $I_{\text{FGM}}$  .....

Peak Forward Gate Voltage (Anode Positive with Respect to Cathode),  $V_{\text{FGM}}$  .....

Peak Reverse Gate Voltage,  $V_{\text{RGM}}$  .....

Average Gate Power,  $P_{\text{G}}$  .....

Peak Gate Power (100 $\mu\text{s}$  Pulse Width),  $P_{\text{GM}}$  .....

Rate of Rise of Off-State Voltage (To 80%  $V_{\text{DRM}}$ , Gate Open),  $dv/dt$  .....

Rate of Rise of ON-State Current,  $di/dt$

(Gate Drive 20V, 20 $\Omega$ , with  $t_r \leq 1\mu\text{s}$ , Anode Voltage  $\leq 80\%$   $V_{\text{DRM}}$ )

Repetitive .....	500A/ $\mu\text{s}$
Non-Repetitive .....	1000A/ $\mu\text{s}$

Peak On-State Voltage ( $I_{\text{TM}} = 710\text{A}$ ),  $V_{\text{TM}}$  .....

Forward Conduction Threshold Voltage,  $V_{\text{O}}$  .....

Forward Conduction Slope Resistance,  $r$  .....

Repetitive Peak Off-State Current (At  $V_{\text{DRM}}$ ),  $I_{\text{DRM}}$  .....

Repetitive Peak Reverse Current (At  $V_{\text{RRM}}$ ),  $I_{\text{RRM}}$  .....

Maximum Gate Current Required to Fire All Devices ( $V_{\text{A}} = 6\text{V}$ ,  $I_{\text{A}} = 2\text{A}$ ,  $T_J = +25^\circ\text{C}$ ),  $I_{\text{GT}}$  ..

Maximum Gate Voltage Required to Fire All Devices ( $V_{\text{A}} = 6\text{V}$ ,  $I_{\text{A}} = 2\text{A}$ ,  $T_J = +25^\circ\text{C}$ ),  $V_{\text{GT}}$  .....

Maximum Holding ( $V_{\text{A}} = 6\text{V}$ ,  $I_{\text{A}} = 2\text{A}$ ,  $T_J = +25^\circ\text{C}$ ),  $I_{\text{H}}$  .....

Maximum Gate Voltage which will not Trigger any Device,  $V_{\text{GD}}$  .....

**Electrical Characteristics (Cont'd):** (Maximum values @  $T_J = +125^\circ\text{C}$  unless otherwise specified)

Operating Temperature Range, $T_C$	$-40^\circ$ to $+125^\circ\text{C}$
Storage Temperature Range, $T_{\text{stg}}$	$-40^\circ$ to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Case ( $V_F = \text{Max Rating}$ ), $R_{\text{thJC}}$	
DC and $180^\circ$ Sine wave	$0.12^\circ\text{C/W}$
$120^\circ$ Rectangular wave	$0.14^\circ\text{C/W}$
Thermal Resistance, Case-to-Heat Sink, $R_{\text{thCHS}}$	$0.04^\circ\text{C/W}$

