



ELECTRONICS, INC.
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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_{DRM} & V_{RRM}	
NTE5586	600V
NTE5588	1600V
Non-Repetitive Peak Off-State Voltage, V_{DSM}	
NTE5586	600V
NTE5588	1600V
Non-Repetitive Peak Reverse Blocking Voltage, V_{RSM}	
NTE5586	700V
NTE5588	1700V
Average On-State Current (Half Sine Wave, $T_C = +85^\circ\text{C}$), $I_{\text{T(AV)}}$	
226A	
RMS On-State Current, $I_{\text{(RMS)}}$	
355A	
Continuous On-State Current, I_{T}	
355A	
Peak One-Cycle, Non-Repetitive Surge Current (10ms Duration), I_{TSM}	
60% V_{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 ² sec
10ms Duration	97350A ² sec
Peak Forward Gate Current (Anode Positive with Respect to Cathode), I_{FGM}	
20A	
Peak Forward Gate Voltage (Anode Positive with Respect to Cathode), V_{FGM}	
18V	
Peak Reverse Gate Voltage, V_{RGM}	
5V	
Average Gate Power, P_{G}	
2W	
Peak Gate Power (100 μs Pulse Width), P_{GM}	
100W	
Rate of Rise of Off-State Voltage (To 80% V_{DRM} , Gate Open), dv/dt	
200V/ μs	
Rate of Rise of ON-State Current, di/dt	
(Gate Drive 20V, 20 Ω , with $t_r \leq 1\mu\text{s}$, Anode Voltage $\leq 80\%$ V_{DRM})	
Repetitive	500A/ μs
Non-Repetitive	1000A/ μs
Peak On-State Voltage ($I_{\text{TM}} = 710\text{A}$), V_{TM}	
1.62V	
Forward Conduction Threshold Voltage, V_{O}	
0.92V	
Forward Conduction Slope Resistance, r	
0.99m Ω	
Repetitive Peak Off-State Current (At V_{DRM}), I_{DRM}	
20mA	
Repetitive Peak Reverse Current (At V_{RRM}), I_{RRM}	
20mA	
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_{GT} ..	
150mA	
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_{GT}	
3V	
Maximum Holding ($V_{\text{A}} = 6\text{V}$, $I_{\text{A}} = 2\text{A}$, $T_J = +25^\circ\text{C}$), I_{H}	
600mA	
Maximum Gate Voltage which will not Trigger any Device, V_{GD}	
0.25V	

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

Operating Temperature Range, T_C -40° to $+125^\circ\text{C}$

Storage Temperature Range, T_{stg} -40° to $+150^\circ\text{C}$

Thermal Resistance, Junction-to-Case ($V_F = \text{Max Rating}$), R_{thJC}

 DC and 180° Sine wave 0.12°C/W

120° Rectangular wave 0.14°C/W

Thermal Resistance, Case-to-Heat Sink, $R_{\text{thC-HS}}$ 0.04°C/W

