



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, $T_C = +85^\circ\text{C}$), $I_{T(AV)}$	
	226A
RMS On-State Current, $I_{(RMS)}$	
	355A
Continuous On-State Current, I_T	
	355A
Peak One-Cycle, Non-Repetitive Surge Current (10ms Duration), I_{TSM}	
60% V_{RRM} reapplied	4650A
$V_R \leq 10V$	5120A
Maximum I^2t for Fusing ($V_R \leq 10V$), 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 μ s Pulse Width), P_{GM}	
	100W
Rate of Rise of Off-State Voltage (To 80% V_{DRM} , Gate Open), dv/dt	
	200V/ μ s
Rate of Rise of ON-State Current, di/dt (Gate Drive 20V, 20 Ω , with $t_r \leq 1\mu$ s, Anode Voltage $\leq 80\%$ V_{DRM})	
Repetitive	500A/ μ s
Non-Repetitive	1000A/ μ s
Peak On-State Voltage ($I_{TM} = 710A$), 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 ($V_A = 6V$, $I_A = 2A$, $T_J = +25^\circ\text{C}$), I_{GT} ..	
	150mA
Maximum Gate Voltage Required to Fire All Devices ($V_A = 6V$, $I_A = 2A$, $T_J = +25^\circ\text{C}$), V_{GT}	
	3V
Maximum Holding ($V_A = 6V$, $I_A = 2A$, $T_J = +25^\circ\text{C}$), 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

