



ELECTRONICS, INC.
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NTE5368 & NTE5369 Silicon Controlled Rectifier (SCR) 125 Amp

Absolute Maximum Ratings: ($T_J = +125^\circ\text{C}$ unless otherwise specified)

Repetitive Peak Voltages, V_{RRM} , V_{DRM} , V_{DSM}	
NTE5368	600V
NTE5369	1200V
Non-Repertitive Peak Reverse Blocking Voltage, V_{RSM}	
NTE5368	700V
NTE5369	1300V
Average On-State Current (Half Sine Wave, $T_C = +85^\circ\text{C}$), $I_{T(AV)}$	75A
RMS On-State Current, $I_{T(RMS)}$	175A
Continuous On-State Current, I_T	175A
Peak One-Cycle Surge (10ms duration, 60% V_{RRM} re-applied), $I_{TSM(1)}$	1500A
Non-Repertitive On-State Current (10ms duration, $V_R \leq 10V$), $I_{TSM(2)}$	1650A
Maximum Permissible Surge Energy ($V_R \leq 10V$), I^2t	
10ms duration	13600A ² s
3ms duration	10000A ² s
Peak Forward Gate Current (Anode positive with respect to cathode), I_{FGM}	14A
Peak Forward Gate Voltage (Anode positive with respect to cathode), V_{FGM}	20V
Peak Reverse Gate Voltage, V_{RGM}	5V
Average Gate Power, P_G	1.5W
Peak Gate Power (100 μ s pulse width), P_{GM}	60W
Rate of Rise of Off-State Voltage (To 80% V_{DRM} gate open-circuit), 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-Repertitive	1000A/ μ s
Operating Temperature Range, T_{hs}	-40° to +125°C
Storage Temperature Range, T_{stg}	-40° to +150°C
Thermal Resistance, Junction-to-Case, R_{thJC}	
(For a device with a maximum forward voltage drop characteristic)	0.23°C/W

Absolute Maximum Ratings (Cont'd): ($T_J = +125^\circ\text{C}$ unless otherwise specified)

Peak On-State Voltage ($I_{TM} = 280\text{A}$), V_{TM}	2.54V
Forward Conduction Threshold Voltage, V_O	1.7V
Forward Conduction Slope Resistance, r	3m 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 ($V_A = 6\text{V}$, $I_A = 1\text{A}$, $T_J = +25^\circ\text{C}$), I_{GT}	200mA
Maximum Gate Voltage ($V_A = 6\text{V}$, $I_A = 1\text{A}$, $T_J = +25^\circ\text{C}$), V_{GT}	3V
Maximum Holding Current ($V_A = 6\text{V}$, $I_A = 1\text{A}$, $T_J = +25^\circ\text{C}$), I_H	600mA
Maximum Gate Voltage Which Will Not Trigger Any Device, V_{GD}	0.25V
Typical Stored Charge ($I_{TM} = 200\text{A}$, $dr_R/dt = 10\text{A}/\mu\text{s}$, $V_{RM} = 50\text{V}$, 50% chord value), Q_{rr}	25 μC
Circuit Commutated Turn-Off Time ($I_{TM} = 200\text{A}$, $di_R/dt = 10\text{A}/\mu\text{s}$, $V_{RM} = 50\text{V}$), t_q	
(200V/ μs to 80% V_{DRM})	25–40 μs
(20V/ μs to 80% V_{DRM})	(typical) 20–35 μs

