ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

NTE5567, NTE5568, NTE5569, & NTE5571
Silicon Controlled Rectifier (SCR)
80 Amp ($I_{T(RMS)}$), TO65 (TO208AC)

Features:
- High Current Rating
- Excellent Dynamic Characteristics
- Superior Surge Capabilities
- Standard Package

Voltage Ratings and Electrical Characteristics: (T_J = +125°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Values	Unit
Maximum Repetitive Peak Forward & Reverse Voltage NTE5567	V_{DRM}, V_{RRM}	Note 1		200	V
NTE5568				600	V
NTE5569				1200	V
NTE5571				1600	V
Maximum Non–Repetitive Peak Voltage NTE5567	V_{RSM}	Note 2		300	V
NTE5568				700	V
NTE5569				1300	V
NTE5571				1700	V
Peak Reverse & Off–State Current	I_{DRM}, I_{RRM}			15	mA
Average On–State Current NTE5567, NTE5568, NTE5569	$I_{T(AV)}$	180° Sinusoidal Conduction	T_C = +94°C	50	A
NTE5571			T_C = +90°C	50	A
RMS On–State Current	$I_{T(RMS)}$			80	A
Peak One–Cycle Non–Repetitive Surge Current	I_{TSM}	t = 10ms, No Voltage Reapplied, Sinusoidal Half Wave		1200	A
I^2t for Fusing NTE5567, NTE5568, NTE5569	I^2t	t = 10ms, Sinusoidal Half Wave	No Voltage Reapplied	10.18	KA^2s
NTE5571				7.21	KA^2s
NTE5567, NTE5568, NTE5569			100% V_{RRM} Reapplied	7.20	KA^2s
NTE5571				5.10	KA^2s

Note 1. Units may be broken over non–repetitively in the off–state direction without damage, if di/dt does not exceed 20A/μs.

Note 2. For voltage pulses with $t_p \le 5$ms.

Voltage Ratings and Electrical Characteristics (Cont'd): (T_J = +125°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Values	Unit
$I^2\sqrt{t}$ for Fusing NTE5567, NTE5568, NTE5569	$I^2\sqrt{t}$	t = 0.1 to 10ms, No Voltage Reapplied	10.18	$KA^2\sqrt{s}$
NTE5571			7.21	$KA^2\sqrt{s}$
Low Level Value of Threshold Voltage NTE5567, NTE5568, NTE5569	$I_{T(TO)}$	16.7% x π x $I_{T(AV)}$ < I < π x $I_{T(AV)}$	0.94	V
NTE5571			1.02	V
High Level Value of Threshold Voltage NTE5567, NTE5568, NTE5569	$I_{T(TO)2}$	π x $I_{T(AV)}$ < I < 20 x π x $I_{T(AV)}$	1.08	V
NTE5571			1.17	V
Low Level Value of On−State Slope Resistance NTE5567, NTE5568, NTE5569	r_{T1}	16.7% x π x $I_{T(AV)}$ < I <20 x π x $I_{T(AV)}$	4.08	mΩ
NTE5571			4.78	mΩ
High Level Value of On−State Slope Resistance NTE5567, NTE5568, NTE5569	r_{T2}	π x $I_{T(AV)}$ < I < 20 x π x $I_{T(AV)}$	3.34	mΩ
NTE5571			3.97	mΩ
Maximum On−State Voltage NTE5567, NTE5568, NTE5569	V_{TM}	I_{pk} = 157A, T_J = +25°C	1.60	V
NTE5571			1.78	V
Maximum Holding Current	I_H	T_J = +25°C, Anode Supply 22V, Resistive Load, Initial I_T = 2A	200	mA
Latching Current	I_L	Anode Supply 6V, Resistive Load	400	mA
Maximum Rate of Rise of Turned−On Current NTE5567, NTE5568,	di/dt	V_{DM} = Rated V_{DRM}, Gate Pulse = 20V, 15Ω, t_p = 6μs, t_r = 0.1μs Max, I_{TM} = (2 x Rated di/dt) A	200	A/μs
NTE5569, NTE5571			100	A/μs
Typical Delay Time	t_d	T_C = +25°C, V_{DM} = Rated V_{DRM}, DC Resistive Circuit, Gate Pulse = 10V, 15Ω Source, t_p = 20μs	0.9	μs
Typical Turn−Off Time	t_q	T_C = +125°C, I_{TM} = 50A, Reapplied dv/dt = 20V/μs, dir/dt = 10A/μs, V_R = 50V	110	μs
Maximum Critical Rate of Rise of Off−State Voltage	dv/dt	Linear to 100% Rated V_{DRM}	200	V/μs
		Linear to 67% Rated V_{DRM}	500	V/μs
Maximum Peak Gate Power	$P_{G(AV)}$	t_p ≤ 5ms	10	W
Maximum Average Gate Power	P_{GM}		2.5	W
Maximum Peak Positive Gate Current	I_{GM}		2.5	A
Maximum Peak Positive Gate Voltage	$+V_{GM}$		10	V
Maximum Peak Negative Gate Voltage	$-V_{GM}$		10	V
DC Gate Current Required to Trigger	I_{GT}	6V, Anode−to−Cathode Applied	100	mA
DC Gate Voltage Required to Trigger	V_{GT}	6V, Anode−to−Cathode Applied, T_J = +25°C	2.5	V
DC Gate Current Not to Trigger	I_{GD}	Rated V_{DRM}, Anode−to−Cathode Applied	5.0	mA

Note 1. Units may be broken over non−repetitively in the off−state direction without damage, if di/dt does not exceed 20A/μs.

Note 2. For voltage pulses with t_p ≤ 5ms.

Voltage Ratings and Electrical Characteristics (Cont'd): (T_J = +125°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Values	Unit
DC Gate Voltage Not to Trigger	V_{GD}	Rated V_{DRM}, Anode–to–Cathode Applied	0.2	V
Operating Junction Temperature Range	T_J		–40 to +125	°C
Storage Temperature Range	T_{stg}		–40 to +125	°C
Thermal Resistance, Junction–to–Case	R_{thJC}	DC Operation	0.35	K/W
Thermal Resistance, Case–to–Heatsink	R_{thCS}	Mounting Surface Smooth, Flat, and Greased	0.25	K/W
Mounting Torque	T	Non–Lubricated Threads	2.8	Nm

Note 1. Units may be broken over non–repetitively in the off–state direction without damage, if di/dt does not exceed 20A/μs.

Note 2. For voltage pulses with $t_p \leq 5$ms.