



ELECTRONICS, INC.

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NTE5500 thru NTE5509 Silicon Controlled Rectifier (SCR) 16 Amp

Description:

The NTE5500 thru NTE5509 series of industrial-type silicon controlled rectifiers (SCR) are available in a TO48 style package with a current handling capability to 25 Amps at junction temperatures to +125°C.

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

Peak Forward Blocking Voltage, V_{DRM}

NTE5500	25V
NTE5501	50V
NTE5502	100V
NTE5503	150V
NTE5504	200V
NTE5505	250V
NTE5506	300V
NTE5507	400V
NTE5508	500V
NTE5509	600V

Peak Reverse Blocking Voltage (Note1, Note2), $V_{RSM(rep)}$

NTE5500	25V
NTE5501	50V
NTE5502	100V
NTE5503	150V
NTE5504	200V
NTE5505	250V
NTE5506	300V
NTE5507	400V
NTE5508	500V
NTE5509	600V

Peak Reverse Blocking Voltage (Transient, Non-Recurrent, $t = 5\text{ms Max}$, Note2), $V_{RSM(non-rep)}$

NTE5500	35V
NTE5501	75V
NTE5502	150V
NTE5503	225V
NTE5504	300V
NTE5505	350V
NTE5506	400V
NTE5507	500V
NTE5508	600V
NTE5509	700V

Forward Current RMS (All Conduction Angles), I_T 25A

Peak Forward Surge Current (One Cycle, 60Hz, $T_J = -65^\circ$ to $+125^\circ\text{C}$), I_{TSM} 200A

Circuit Fusing Considerations ($T_J = -65^\circ$ to $+125^\circ\text{C}$, $t \leq 8.3\text{ms}$), I^2t 165A²s

Note 1. V_{RSM} can be applied on a continuous DC basis without incurring change.

Note 2. $V_{RSM(rep)}$ ratings apply for zero or negative gate voltage.

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

Peak Gate Power – Forward, P_{GM}	5W
Average Gate Power – Forward, $P_{G(AV)}$	500mW
Peak Gate Current – Forward, I_{GM}	2A
Peak Gate Voltage – Forward, V_{GFM}	10V
Peak Gate Voltage – Reverse, V_{GRM}	5V
Operating Junction Temperature Range, T_J	-65° to $+125^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$
Stud Torque	30 in. lb. (3.33 m•N)

Electrical Characteristics: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Forward or Reverse Blocking Current NTE5500 thru NTE5506	I_{DRM}, I_{RRM}	$T_J = +125^\circ\text{C}$	–	–	10	mA
NTE5507			–	–	8	mA
NTE5508			–	–	6	mA
NTE5509			–	–	4	mA
Gate Triggs Current (Continuous DC)	I_{GT}	Anode Voltage = 7V, $R_L = 50\Omega$	–	10	25	mA
Gate Trigger Voltage (Continuous DC)	V_{GT}	Anode Voltage = 7V, $R_L = 50\Omega$	0.25	–	3.0	V
Holding Current	I_{HOLD}	Anode Voltage = 7V, Gate Open	–	20	–	mA
Forward ON Voltage	V_{TM}	$I_T = 20\text{A}$	–	1.1	1.5	V
Turn-On Time	t_{gt}	$I_T = 10\text{A}, I_G = 100\text{mA}$	–	1.0	–	μs
Turn-Off Time	t_q	$T_J = +125^\circ\text{C}, I_T = 10\text{A}, I_R = 10\text{A},$ $dv/dt = 30\text{V}/\mu\text{s}$ Min, $V_{DRM} = \text{Rated Voltage}$	–	30	–	μs
Forward Voltage Application Rate	dv/dt	$T_J = +125^\circ\text{C}, \text{Gate Open}$	–	30	–	$\text{V}/\mu\text{s}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$		–	1.0	2.0	$^\circ\text{C}/\text{W}$

