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NTE5500 thru NTE5509
Silicon Controlled Rectifier (SCR)
16 Amp, TO48

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°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 = 5ms 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° to +125°C), I_{TSM} 200A

Circuit Fusing Considerations (T_J = –65° to +125°C, t ≤ 8.3ms), I^2t . . . . . 165A^2s

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°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°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Stud Torque . . . . . 30 in. lb. (3.33 m•N)

Electrical Characteristics: (T_C = +25°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°C	–	–	10	mA
NTE5507			–	–	8	mA
NTE5508			–	–	6	mA
NTE5509			–	–	4	mA
Gate Trigge Current (Continuous DC)	I_{GT}	Anode Voltage = 7V, R_L = 50Ω	–	10	25	mA
Gate Trigger Voltage (Continuous DC)	V_{GT}	Anode Voltage = 7V, R_L = 50Ω	0.25	–	3.0	V
Holding Current	I_{HOLD}	Anode Voltage = 7V, Gate Open	–	20	–	mA
Forward ON Voltage	V_{TM}	I_T = 20A	–	1.1	1.5	V
Turn–On Time	t_{gt}	I_T = 10A, I_G = 100mA	–	1.0	–	µs
Turn–Off Time	t_q	T_J = +125°C, I_T = 10A, I_R = 10A, dv/dt = 30V/µs Min, V_{DRM} = Rated Voltage	–	30	–	µs
Forward Voltage Application Rate	dv/dt	T_J = +125°C, Gate Open	–	30	–	V/µs
Thermal Resistance, Junction to Case	$R_{\Theta JC}$		–	1.0	2.0	°C/W