



ELECTRONICS, INC.

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NTE5520 thru NTE5531 Silicon Controlled Rectifier (SCR), 25A

Maximum Ratings and Characteristics:

Blocking State ($T_J = +125^\circ\text{C}$ unless otherwise specified)

Repetitive Peak Forward and Reverse Voltage, V_{DRM} , V_{RRM}

NTE5520	25V
NTE5521	50V
NTE5522	100V
NTE5523	150V
NTE5524	200V
NTE5525	250V
NTE5526	300V
NTE5527	400V
NTE5528	500V
NTE5529	600V
NTE5530	700V
NTE5531	800V

Non-Repetitive Transient Peak Forward and Reverse Voltage ($t \leq 5.0\text{msec}$), V_{RSM}

NTE5520	35V
NTE5521	75V
NTE5522	150V
NTE5523	225V
NTE5524	300V
NTE5525	350V
NTE5526	400V
NTE5527	500V
NTE5528	600V
NTE5529	780V
NTE5530	840V
NTE5531	960V

Forward and Reverse Leakage Current, (full cycle average), $I_{D(av)}$, $I_{R(av)}$

NTE5520	6.5mA
NTE5521	6.5mA
NTE5522	6.5mA
NTE5523	6.5mA
NTE5524	6.0mA
NTE5525	5.5mA
NTE5526	5.0mA
NTE5527	4.0mA
NTE5528	3.0mA
NTE5529	2.5mA
NTE5530	2.25mA
NTE5531	2.0mA

Maximum Ratings and Characteristics (Cont'd):

Conducting State ($T_J = +125^\circ\text{C}$ unless otherwise specified)

RMS Forward Current, $I_{T(rms)}$	25A
Forward Current (180° Conduction), $I_{T(av)}$	16A
Surge Current (at 60Hz), I_{TSM}	
1/2 Cycle	150A
3 Cycles	110A
10 Cycles	90A
I^2t for Fusing (at 60Hz half-wave), I^2t	90A ² sec
Forward Voltage Drop at $T_J = +25^\circ\text{C}$, ($I_F = 16\text{A dc}$), V_{TM}	1.7V

Thermal Characteristics

Operating Junction Temperature Range, T_J	-65° to $+125^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$
Max. Thermal Impedance, Junction-to-Case, R_{thJC}	1.3°C/W
Max. Thread Torque, Lubricated	30in. lbs

Gate Parameters ($T_J = +25^\circ\text{C}$ unless otherwise specified)

Gate Current to Trigger ($V_{FB} = 12\text{V}$), I_{GT}	40mA
Gate Voltage to Trigger Over Temperature Range ($V_{FB} = 12\text{V}$), V_{GT}	3.0V
Non-Triggering Gate Voltage at $T_J = +125^\circ\text{C}$ (Rated V_{FB}), V_{GNT}	0.25V
Peak Forward Gate Current, I_{GFRM}	5A
Peak Reverse Gate Voltage, V_{GRM}	5V
Peak Gate Power, P_{GM}	5W
Average Gate Power, $P_{G(AV)}$	0.5W

Switching State

Typical Turn-On Time ($I_T = 10\text{A}$, 10–90%, $V_{DRM} = 10\text{V}$, $T_J = +25^\circ\text{C}$), t_{on}	3 μs
Minimum di/dt (Linear to 5.0 $I_{T(av)}$), di/dt	25A/ μs
Typical Turn-Off Time, t_q	
($I_T = 10\text{A}$, $T_J = +125^\circ\text{C}$, $di_R/dt = 10\text{A}/\mu\text{s}$, $dv/dt = 20\text{V}/\mu\text{s}$ Linear to 0.8 V_{DRM})	50 μs
Typical dv/dt (Exp. to V_{DRM}), dv/dt	100V/ μs

