



ELECTRONICS, INC.
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NTE5520 thru NTE5531 Silicon Controlled Rectifier (SCR) 25 Amp, TO48

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°C |
| Storage Temperature Range, T_{stg} | -65° to +150°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} | 3μs |
| 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 = 10A/μs, dv/dt = 20V/μs Linear to 0.8 V_{DRM}) | 50μs |
| Typical dv/dt (Exp. to V_{DRM}), dv/dt | 100V/μs |

