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## NTE5588 Silicon Controlled Rectifier (SCR) 1600V, 360 Amps, TO93

**Electrical Characteristics:** (Maximum values @  $T_J = +125^\circ\text{C}$  unless otherwise specified)

|  |                           |
|--|---------------------------|
| Repetitive Peak Voltages, $V_{\text{DRM}}$ & $V_{\text{RRM}}$ .....  | 1600V                     |
| Non-Repetitive Peak Off-State Voltage, $V_{\text{DSM}}$ .....  | 1600V                     |
| Non-Repetitive Peak Reverse Blocking Voltage, $V_{\text{RSM}}$ .....   | 1700V                     |
| Average On-State Current (Half Sine Wave, $T_C = +85^\circ\text{C}$ ), $I_{\text{T(AV)}}$ .....  | 226A                      |
| RMS On-State Current, $I_{\text{T(RMS)}}$ .....  | 355A                      |
| Continuous On-State Current, $I_{\text{T}}$ .....  | 355A                      |
| Peak One-Cycle, Non-Repetitive Surge Current (10ms Duration), $I_{\text{TSM}}$   |                           |
| 60% $V_{\text{RRM}}$ reapplied .....   | 4650A                     |
| $V_{\text{R}} \leq 10\text{V}$ .....   | 5120A                     |
| Maximum $I^2t$ for Fusing ( $V_{\text{R}} \leq 10\text{V}$ ), $I^2t$   |                           |
| 10ms Duration .....  | 131,000A <sup>2</sup> sec |
| 10ms Duration .....  | 97350A <sup>2</sup> sec   |
| Peak Forward Gate Current (Anode Positive with Respect to Cathode), $I_{\text{FGM}}$ .....   | 20A                       |
| Peak Forward Gate Voltage (Anode Positive with Respect to Cathode), $V_{\text{FGM}}$ .....   | 18V                       |
| Peak Reverse Gate Voltage, $V_{\text{RGM}}$ .....  | 5V                        |
| Average Gate Power, $P_{\text{G}}$ .....   | 2W                        |
| Peak Gate Power (100 $\mu\text{s}$ Pulse Width), $P_{\text{GM}}$ .....   | 100W                      |
| Rate of Rise of Off-State Voltage (To 80% $V_{\text{DRM}}$ , Gate Open), $dv/dt$ .....   | 200V/ $\mu\text{s}$       |
| Rate of Rise of ON-State Current, $di/dt$  |                           |
| (Gate Drive 20V, 20 $\Omega$ , with $t_r \leq 1\mu\text{s}$ , Anode Voltage $\leq 80\%$ $V_{\text{DRM}}$ )   |                           |
| Repetitive .....   | 500A/ $\mu\text{s}$       |
| Non-Repetitive .....   | 1000A/ $\mu\text{s}$      |
| Peak On-State Voltage ( $I_{\text{TM}} = 710\text{A}$ ), $V_{\text{TM}}$ .....   | 1.62V                     |
| Forward Conduction Threshold Voltage, $V_{\text{O}}$ .....   | 0.92V                     |
| Forward Conduction Slope Resistance, $r$ .....   | 0.99m $\Omega$            |
| Repetitive Peak Off-State Current (At $V_{\text{DRM}}$ ), $I_{\text{DRM}}$ .....   | 20mA                      |
| Repetitive Peak Reverse Current (At $V_{\text{RRM}}$ ), $I_{\text{RRM}}$ .....   | 20mA                      |
| Maximum Gate Current Required to Fire All Devices ( $V_{\text{A}} = 6\text{V}$ , $I_{\text{A}} = 2\text{A}$ , $T_J = +25^\circ\text{C}$ ), $I_{\text{GT}}$ ..    | 150mA                     |
| Maximum Gate Voltage Required to Fire All Devices ( $V_{\text{A}} = 6\text{V}$ , $I_{\text{A}} = 2\text{A}$ , $T_J = +25^\circ\text{C}$ ), $V_{\text{GT}}$ ..... | 3V                        |
| Maximum Holding ( $V_{\text{A}} = 6\text{V}$ , $I_{\text{A}} = 2\text{A}$ , $T_J = +25^\circ\text{C}$ ), $I_{\text{H}}$ .....                                    | 600mA                     |
| Maximum Gate Voltage which will not Trigger any Device, $V_{\text{GD}}$ .....  | 0.25V                     |
| Operating Temperature Range, $T_C$ .....   | -40° to +125°C            |
| Storage Temperature Range, $T_{\text{stg}}$ .....  | -40° to +150°C            |
| Thermal Resistance, Junction-to-Case ( $V_{\text{F}} = \text{Max Rating}$ ), $R_{\text{thJC}}$   |                           |
| DC and 180° Sine wave .....  | 0.12°C/W                  |
| 120° Rectangular wave .....  | 0.14°C/W                  |
| Thermal Resistance, Case-to-Heat Sink, $R_{\text{thCHS}}$ .....  | 0.04°C/W                  |

