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NTE5892 thru NTE5899 NTE5900 thru NTE5911 Silicon Power Rectifier Diode, 16 Amp, DO4

Description and Features:

The NTE5892 through NTE5911 are low power general purpose rectifier diodes in a DO4 type package designed for battery chargers, converters, power supplies, and machine tool controls.

Features:

- High Surge Current Capability
- High Voltage Available
- Designed for a Wide Range of Applications
- Available in Anode-to-Case or Cathode-to-Case Style

Ratings and Characteristics:

| | |
|---|-------------------------------|
| Average Forward Current ($T_C = +140^\circ\text{C Max}$), $I_{F(AV)}$ | 16A |
| Maximum Forward Surge Current, I_{FSM} | |
| 50Hz | 295A |
| 60Hz | 310A |
| Fusing Current, I^2t | |
| 50Hz | 435A ² s |
| 60Hz | 395A ² s |
| Fusing Current, $I^2\sqrt{t}$ | 6150A ² \sqrt{s} |
| Maximum Reverse Recovery Voltage Range, V_{RRM} | 50 to 1000V |

Voltage Ratings: ($T_J = +175^\circ\text{C}$)

| NTE Type Number | | V_{RRM} -Max Repetitive Peak Reverse Volt. (V) | V_{RSM} -Max Non-Repetitive Peak Reverse Voltage (V) | V_R -Max. Direct Reverse Voltage (V) | $V_{R(SR)}$ Minimum Avalanche Voltage (V) | I_{RM} -Max Reverse Current Rated V_{RRM} (mA) |
|--------------------|------------------|---|---|---|--|---|
| Cathode to Case | Anode to Case | | | | | |
| 5892 | 5893 | 50 | 75 | 50 | - | 12 |
| 5894 | 5895 | 100 | 150 | 100 | - | 12 |
| 5896 | 5897 | 200 | 275 | 200 | - | 12 |
| 5898 | 5899 | 300 | 385 | 300 | - | 12 |
| 5900 | 5901 | 400 | 500 | 400 | 500 | 12 |
| 5902 | 5903 | 500 | 613 | 50 | 626 | 12 |
| 5904 | 5905 | 600 | 725 | 600 | 750 | 12 |
| 5908 | 5909 | 800 | 950 | 800 | 950 | 12 |
| 5910 | 5911 | 1000 | 1200 | 1000 | 1150 | 12 |

Electrical Specifications:

| Parameter | Symbol | Test Conditions | | Rating | Unit |
|---|---------------|---|--|--------|----------------------|
| Maximum Average Forward Current | $I_F (AV)$ | 180° sinusoidal condition, $T_C = +140^\circ\text{C}$ Max | | 16 | A |
| Maximum RMS Forward Current | $I_F (RMS)$ | | | 25 | A |
| Maximum Peak One-Cycle Non-Repetitive Surge Current | I_{FSM} | $t = 10\text{ms}$ | Sinusoidal Half Wave, No voltage reapplied | 295 | A |
| | | $t = 8.3\text{ms}$ | | 310 | A |
| | | $t = 10\text{ms}$ | 100% rated voltage reapplied, $T_J = +175^\circ\text{C}$ | 350 | A |
| | | $t = 8.3\text{ms}$ | | 370 | A |
| Maximum I^2t for Individual Device Fusing | I^2t | $t = 10\text{ms}$ | 100% rated voltage reapplied, Initial $T_J = +175^\circ\text{C}$ | 612 | A^2s |
| | | $t = 8.3\text{ms}$ | | 560 | A^2s |
| Maximum $I^2\sqrt{t}$ | $I^2\sqrt{t}$ | $t = 0.1$ to 10ms , No voltage reapplied, Note 1 | | 6125 | $\text{A}^2\sqrt{t}$ |
| Maximum Peak Forward Voltage | V_{FM} | $I_{FM} = 50\text{A}$, $T_J = +25^\circ\text{C}$ | | 1.23 | V |
| Maximum Value of Threshold Voltage | $V_M (TO)$ | $T_J = +175^\circ\text{C}$ | | 0.78 | V |
| Maximum Value of Forward Slope Resistance | r_t | $T_J = +175^\circ\text{C}$ | | 7.55 | $\text{m}\Omega$ |

Note 1. I^2t for time $t_x = I^2\sqrt{t} \cdot \sqrt{t_x}$

Thermal-Mechanical Specifications:

| Parameter | Symbol | Test Conditions | Rating | Unit |
|--|------------|---|----------------------------|--|
| Maximum Operation Junction Temperature | T_J | | -65 to + 175 | $^\circ\text{C}$ |
| Maximum Storage Temperature | T_{stg} | | -65 to + 200 | $^\circ\text{C}$ |
| Maximum Internal Thermal Resistance Junction-to-Case | R_{thJC} | DC operation | 1.6 | K/W |
| Thermal Resistance, Case-to-Sink | R_{thCS} | Mounting surface flat, smooth and greased | 0.5 | K/W |
| Mounting Torque | T | Non-lubricated threads | 1.2 - 1.5 (10.5 - 13.5) | $\text{m}\bullet\text{N}$ ($\text{in}\bullet\text{lb}$) |
| Approximate Weight | wt | | 11 (0.25) | g (oz) |

