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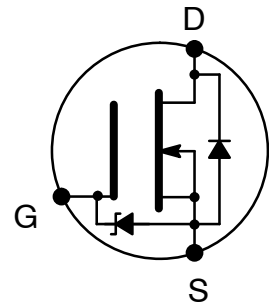
NTE2907 MOSFET N-Channel, Enhancement Mode High Speed Switch

Features:

- Low Drain-Source ON Resistance
- High Forward Transfer Admittance
- Low Leakage Current

Applications:

- High Current, High Speed Switching Applications
- Chopper Regulator
- DC-DC Converter
- Motor Drive



Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

| | |
|--|-------------------------------------|
| Drain-Source Voltage, V_{DSS} | 600V |
| Drain-Gate Voltage ($R_{GS} = 20k\pm$), V_{DGR} | 600V |
| Gate-Source Voltage, V_{GSS} | $\pm 30V$ |
| Continuous Drain Current, I_D | |
| Continuous | 10A |
| Pulsed | 40A |
| Drain Power Dissipation ($T_C = +25^\circ\text{C}$), P_D | 45W |
| Single Pulse Avalanche Energy (Note 1), E_{AS} | 363mJ |
| Avalanche Current, I_{AR} | 10A |
| Repetitive Avalanche Energy (Note 2), E_{AR} | 5.0mJ |
| Channel Temperature, T_{ch} | $+150^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -55° to $+150^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Case, R_{thJC} | 2.78°C/W |
| Thermal Resistance, Junction-to-Ambient, R_{thJA} | 62.5°C/W |

Note 1. $V_{DD} = 90V$, Starting $T_{ch} = +25^\circ\text{C}$, $L = 6.36\text{mH}$, $R_G = 25\pm$, $I_{AR} = 10A$.

Note 2. Repetitive Rating: Pulse Width limited by Max. Junction Temperature.

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|----------------------------------|---------------|---|----------|------|----------|----------|
| Gate Leakage Current | I_{GSS} | $V_{DS} = 0V, V_{GS} = \pm 25V$ | - | - | ± 10 | $\leq A$ |
| Gate-Source Breakdown Voltage | $V_{(BR)GSS}$ | $V_{DS} = 0V, I_G = \pm 10\mu A$ | ± 30 | - | - | V |
| Drain Cut-Off Current | I_{DSS} | $V_{DS} = 600, V_{GS} = 0V$ | - | - | 100 | $\leq A$ |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 10mA$ | 600 | - | - | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = 10V, I_D = 1mA$ | 2.0 | - | 4.0 | V |
| Drain-Source ON Resistance | $R_{DS(on)}$ | $V_{GS} = 10V, I_D = 5A$ | - | 0.54 | 0.75 | \pm |
| Forward Transfer Admittance | $ Y_{fs} $ | $V_{DS} = 10V, I_D = 5A$ | 3.0 | 9.0 | - | S |
| Input Capacitance | C_{iss} | $V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$ | - | 2040 | - | pF |
| Output Capacitance | C_{oss} | | - | 590 | - | pF |
| Reverse Transfer Capacitance | C_{rss} | | - | 230 | - | pF |
| Turn-On Time | $t_{d(on)}$ | $V_{DD} = 200V, V_{GS} = 10V, I_D = 5A,$ $R_L = 40\pm, V_{IN}: t_r, t_f < 5ns, Duty \leq 1%,$ $t_w = 10\mu s$ | - | 58 | - | ns |
| Rise Time | t_r | | - | 22 | - | ns |
| Turn-Off Time | $t_{d(off)}$ | | - | 190 | - | ns |
| Fall Time | t_f | | - | 36 | - | ns |
| Total Gate Charge | Q_g | $V_{DD} = 400V, V_{GS} = 10V, I_D = 10A$ | - | 45 | - | nC |
| Gate-Source Charge | Q_{gs} | | - | 25 | - | nC |
| Gate-Drain ("Miller") Charge | Q_{gd} | | - | 20 | - | nC |
| Continuous Drain Reverse Current | I_{DR} | | - | - | 10 | A |
| Pulse Drain Reverse Current | I_{DRP} | | - | - | 40 | A |
| Diode Forward Voltage | V_{DSF} | $I_{DR} = 10A, V_{GS} = 0V$ | - | - | 1.7 | V |
| Reverse Recovery Time | t_{rr} | $I_{DR} = 10A, V_{GS} = 0V, dI_{DR}/dt = 100A/\mu s$ | - | 1300 | - | ns |
| Reverse Recovery Charge | Q_{rr} | | | 16 | | $\leq C$ |

