

SOT223 N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

ZVN4310G

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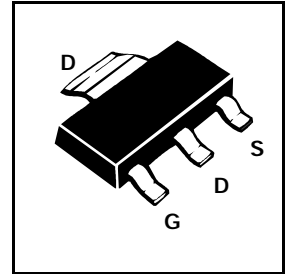
FEATURES

* Very low $R_{DS(on)} = .54\Omega$

APPLICATIONS

- * DC - DC Converters
- * Solenoids/Relay Drivers for Automotive

PARTMARKING DETAIL - ZVN4310



ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|----------------|-------------|-------------|
| Drain-Source Voltage | V_{DS} | 100 | V |
| Continuous Drain Current at $T_{amb}=25^{\circ}C$ | I_D | 1.67 | A |
| Pulsed Drain Current | I_{DM} | 12 | A |
| Gate Source Voltage | V_{GS} | ± 20 | V |
| Power Dissipation at $T_{amb}=25^{\circ}C$ | P_{tot} | 3 | W |
| Operating and Storage Temperature Range | $T_j; T_{stg}$ | -55 to +150 | $^{\circ}C$ |

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---|--------------|------|------------|--------------|----------------------|--|
| Drain-Source Breakdown Voltage | BV_{DSS} | 100 | | | V | $I_D=1mA, V_{GS}=0V$ |
| Gate-Source Threshold Voltage | $V_{GS(th)}$ | 1 | | 3 | V | $I_D=1mA, V_{DS}=V_{GS}$ |
| Gate-Body Leakage | I_{GSS} | | | 20 | nA | $V_{GS}=\pm 20V, V_{DS}=0V$ |
| Zero Gate Voltage Drain Current | I_{DSS} | | | 10 100 | μA μA | $V_{DS}=100V, V_{GS}=0V$ $V_{DS}=80V, V_{GS}=0V, T=125^{\circ}C(2)$ |
| On-State Drain Current(1) | $I_{D(on)}$ | 9 | | | A | $V_{DS}=25V, V_{GS}=10V$ |
| Static Drain-Source On-State Resistance (1) | $R_{DS(on)}$ | | 0.4 0.5 | 0.54 0.75 | Ω Ω | $V_{GS}=10V, I_D=3.3A$ $V_{GS}=5V, I_D=1.5A$ |
| Forward Transconductance (1) | g_{fs} | 0.6 | | | S | $V_{DS}=25V, I_D=3.3A$ |
| Input Capacitance (2) | C_{ISS} | | | 350 | pF | $V_{DS}=25V, V_{GS}=0V, f=1MHz$ |
| Common Source Output Capacitance (2) | C_{OSS} | | | 140 | pF | |
| Reverse Transfer Capacitance (2) | C_{RSS} | | | 20 | pF | |
| Turn-On Delay Time (2)(3) | $t_{d(on)}$ | | | 8 | ns | $V_{DD}\approx 25V, V_{GEN}=10V, I_D=3A$ $R_{GS}=50\Omega$ |
| Rise Time (2)(3) | t_r | | | 25 | ns | |
| Turn-Off Delay Time (2)(3) | $t_{d(off)}$ | | | 30 | ns | |
| Fall Time (2)(3) | t_f | | | 16 | ns | |

(1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$ (2) Sample test.

(3) Switching times measured with 50 Ω source impedance and <5ns rise time on a pulse generator
Spice parameter data is available upon request for this device

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TYPICAL CHARACTERISTICS

