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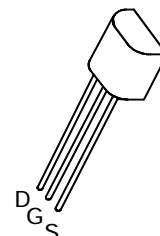
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# N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

## ZVNL110A

**ISSUE 2 – MARCH 94**
**FEATURES**

- \* 100 Volt  $V_{DS}$
- \*  $R_{DS(on)}=3\Omega$
- \* Low threshold voltage



E-Line  
TO92 Compatible

**ABSOLUTE MAXIMUM RATINGS.**

| PARAMETER   | SYMBOL         | VALUE       | UNIT        |
|---|----------------|-------------|-------------|
| Drain-Source Voltage                              | $V_{DS}$       | 100         | V           |
| Continuous Drain Current at $T_{amb}=25^{\circ}C$ | $I_D$          | 320         | mA          |
| Pulsed Drain Current                              | $I_{DM}$       | 6           | A           |
| Gate Source Voltage                               | $V_{GS}$       | $\pm 20$    | V           |
| Power Dissipation at $T_{amb}=25^{\circ}C$        | $P_{tot}$      | 700         | mW          |
| 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. | MAX.       | UNIT                 | CONDITIONS.   |
|---|--------------|------|------------|----------------------|---|
| Drain-Source Breakdown Voltage              | $BV_{DSS}$   | 100  |            | V                    | $I_D=1mA, V_{GS}=0V$  |
| Gate-Source Threshold Voltage               | $V_{GS(th)}$ | 0.75 | 1.5        | V                    | $I_D=1mA, V_{DS}=V_{GS}$  |
| Gate-Body Leakage                           | $I_{GSS}$    |      | 100        | nA                   | $V_{GS}=\pm 20V, V_{DS}=0V$   |
| Zero Gate Voltage Drain Current             | $I_{DSS}$    |      | 10<br>500  | $\mu A$<br>$\mu A$   | $V_{DS}=100V, V_{GS}=0$<br>$V_{DS}=80V, V_{GS}=0V, T=125^{\circ}C$<br>(2) |
| On-State Drain Current(1)                   | $I_{D(on)}$  | 750  |            | mA                   | $V_{DS}=25V, V_{GS}=5V$   |
| Static Drain-Source On-State Resistance (1) | $R_{DS(on)}$ |      | 4.5<br>3.0 | $\Omega$<br>$\Omega$ | $V_{GS}=5V, I_D=250mA$<br>$V_{GS}=10V, I_D=500mA$                         |
| Forward Transconductance (1)(2)             | $g_{fs}$     | 225  |            | mS                   | $V_{DS}=25V, I_D=500mA$   |
| Input Capacitance (2)                       | $C_{iss}$    |      | 75         | pF                   | $V_{DS}=25V, V_{GS}=0V, f=1MHz$   |
| Common Source Output Capacitance (2)        | $C_{oss}$    |      | 25         | pF                   |   |
| Reverse Transfer Capacitance (2)            | $C_{rss}$    |      | 8          | pF                   |   |
| Turn-On Delay Time (2)(3)                   | $t_{d(on)}$  |      | 7          | ns                   | $V_{DD}\approx 25V, V_{GS}=10V, I_D=1A$                                   |
| Rise Time (2)(3)                            | $t_r$        |      | 12         | ns                   |   |
| Turn-Off Delay Time (2)(3)                  | $t_{d(off)}$ |      | 15         | ns                   |   |
| Fall Time (2)(3)                            | $t_f$        |      | 13         | ns                   |   |