

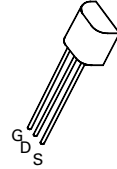
# N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

## ZVN2120C

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### FEATURES

- \* 200 Volt  $V_{DS}$
- \*  $R_{DS(on)}=10\Omega$



**E-Line  
TO92 Compatible**

REFER TO ZVN2120A FOR GRAPHS

### ABSOLUTE MAXIMUM RATINGS.

| PARAMETER                                         | SYMBOL         | VALUE       | UNIT        |
|---------------------------------------------------|----------------|-------------|-------------|
| Drain-Source Voltage                              | $V_{DS}$       | 200         | V           |
| Continuous Drain Current at $T_{amb}=25^{\circ}C$ | $I_D$          | 180         | mA          |
| Pulsed Drain Current                              | $I_{DM}$       | 2           | 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              | $BV_{DSS}$   | 200  |           | 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<br>100 | $\mu A$<br>$\mu A$ | $V_{DS}=200V, V_{GS}=0$<br>$V_{DS}=160V, V_{GS}=0V,$<br>$T=125^{\circ}C(2)$ |
| On-State Drain Current(1)                   | $I_{D(on)}$  | 500  |           | mA                 | $V_{DS}=25V, V_{GS}=10V$                                                    |
| Static Drain-Source On-State Resistance (1) | $R_{DS(on)}$ |      | 10        | $\Omega$           | $V_{GS}=10V, I_D=250mA$                                                     |
| Forward Transconductance (1)(2)             | $g_{fs}$     | 100  |           | mS                 | $V_{DS}=25V, I_D=250mA$                                                     |
| Input Capacitance (2)                       | $C_{iss}$    |      | 85        | pF                 | $V_{DS}=25V, V_{GS}=0V, f=1MHz$                                             |
| Common Source Output Capacitance (2)        | $C_{oss}$    |      | 20        | pF                 |                                                                             |
| Reverse Transfer Capacitance (2)            | $C_{rss}$    |      | 7         | pF                 |                                                                             |
| Turn-On Delay Time (2)(3)                   | $t_{d(on)}$  |      | 8         | ns                 | $V_{DD}=25V, I_D=250mA$                                                     |
| Rise Time (2)(3)                            | $t_r$        |      | 8         | ns                 |                                                                             |
| Turn-Off Delay Time (2)(3)                  | $t_{d(off)}$ |      | 20        | ns                 |                                                                             |
| Fall Time (2)(3)                            | $t_f$        |      | 12        | ns                 |                                                                             |

(1) Measured under pulsed conditions. Width=300 $\mu s$ . Duty cycle  $\leq 2\%$

(2) Sample test.

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