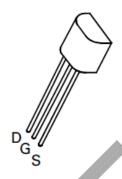


## N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

## **Features**

- 400 Volt V<sub>DS</sub>
- R<sub>DS(ON)</sub> = 50Ω



E-Line TO92 Compatible

## **Maximum Ratings**

| Characteristic                                     | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Drain-Source Voltage                               | $V_{DS}$                          | 400         | V    |
| Continuous Drain Current at T <sub>A</sub> = +25°C | I <sub>D</sub>                    | 90          | mA   |
| Pulsed Drain Current                               | I <sub>DM</sub>                   | 600         | mA   |
| Gate-Source Voltage                                | $V_{GS}$                          | ±20         | V    |
| Power Dissipation at T <sub>A</sub> = +25°C        | P <sub>TOT</sub>                  | 700         | mW   |
| Operating and Storage Temperature Range            | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

# Electrical Characteristics (@TA = +25°C, unless otherwise stated.)

| Characteristic                              | Symbol              | Min | Max | Unit | Test Condition   |
|---|---------------------|-----|-----|------|--|
| Drain-Source Breakdown Voltage              | BV <sub>DSS</sub>   | 400 | _   | V    | $I_D = 1 \text{mA}, V_{GS} = 0 \text{V}$                 |
| Gate-Source Threshold Voltage               | V <sub>GS(TH)</sub> | 1   | 3   | V    | $I_D = 1 \text{mA}, V_{DS} = V_{GS}$                     |
| Gate-Body Leakage                           | I <sub>GSS</sub>    | 1   | 20  | nA   | $V_{GS} = \pm 20V$ , $V_{DS} = 0V$                       |
| Zero Gate Voltage Drain Current             | I <sub>DSS</sub>    | 1   | 10  | μA   | $V_{DS} = 400V, V_{GS} = 0$                              |
|   |                     | _   | 400 | μΑ   | $V_{DS} = 320V, V_{GS} = 0V,$<br>T = +125°C(2)           |
| On-State Drain Current (1)                  | I <sub>D(ON)</sub>  | 150 | 1   | mA   | $V_{DS} = 25V, V_{GS} = 10V$                             |
| Static Drain-Source On-State Resistance (1) | R <sub>DS(ON)</sub> |     | 50  | Ω    | $V_{GS} = 10V, I_D = 100mA$                              |
| Forward Transconductance (1)(2)             | g <sub>fs</sub>     | 100 | _   | mS   | $V_{DS} = 25V, I_D = 100mA$                              |
| Input Capacitance (2)                       | C <sub>iss</sub>    | 1   | 70  | pF   | V <sub>DS</sub> = 25V, V <sub>GS</sub> = 0V, f<br>= 1MHz |
| Common Source Output Capacitance (2)        | Coss                | _   | 10  | pF   |  |
| Reverse Transfer Capacitance (2)            | C <sub>rss</sub>    | 1   | 4   | pF   |  |
| Turn-On Delay Time (2)(3)                   | t <sub>D(ON)</sub>  | _   | 7   | ns   | V <sub>DD</sub> ≈ 25V, I <sub>D</sub> = 100mA            |
| Rise Time (2)(3)                            | t <sub>R</sub>      |     | 7   | ns   |  |
| Turn-Off Delay Time (2)(3)                  | t <sub>D(OFF)</sub> | 1   | 16  | ns   |  |
| Fall Time (2)(3)                            | t <sub>F</sub>      |     | 10  | ns   |  |



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