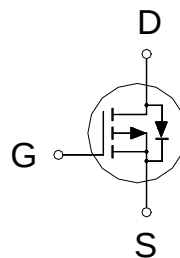


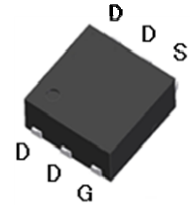
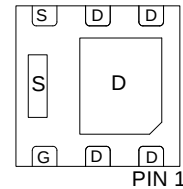
**P-Channel Logic Level Enhancement Mode Field Effect Transistor**

**Product Summary:**

|                     |              |
|---------------------|--------------|
| $BV_{DSS}$          | -10V         |
| $R_{DS(on)} (MAX.)$ | 16m $\Omega$ |
| $I_D$               | -10A         |



Bottom View



Pb-Free Lead Plating & Halogen Free



**ABSOLUTE MAXIMUM RATINGS ( $T_A = 25\text{ }^{\circ}\text{C}$  Unless Otherwise Noted)**

| PARAMETERS/TEST CONDITIONS                     |                                    | SYMBOL           | LIMITS     | UNIT               |
|------------------------------------------------|------------------------------------|------------------|------------|--------------------|
| Gate-Source Voltage                            |                                    | $V_{GS}$         | $\pm 8$    | V                  |
| Continuous Drain Current                       | $T_A = 25\text{ }^{\circ}\text{C}$ | $I_D$            | -10        | A                  |
|                                                | $T_A = 70\text{ }^{\circ}\text{C}$ |                  | -7.8       |                    |
| Pulsed Drain Current <sup>1</sup>              |                                    | $I_{DM}$         | -40        |                    |
| Power Dissipation                              | $T_A = 25\text{ }^{\circ}\text{C}$ | $P_D$            | 2.08       | W                  |
|                                                | $T_A = 70\text{ }^{\circ}\text{C}$ |                  | 1.33       |                    |
| Operating Junction & Storage Temperature Range |                                    | $T_{j}, T_{stg}$ | -55 to 150 | $^{\circ}\text{C}$ |

**THERMAL RESISTANCE RATINGS**

| THERMAL RESISTANCE               | SYMBOL          | TYPICAL | MAXIMUM | UNIT                          |
|----------------------------------|-----------------|---------|---------|-------------------------------|
| Junction-to-Case                 | $R_{\theta JC}$ |         | 12      | $^{\circ}\text{C} / \text{W}$ |
| Junction-to-Ambient <sup>3</sup> | $R_{\theta JA}$ |         | 60      |                               |

<sup>1</sup>Pulse width limited by maximum junction temperature.

<sup>2</sup>Duty cycle  $\leq 1\%$

<sup>3</sup>60 $^{\circ}\text{C} / \text{W}$  when mounted on a 1 in<sup>2</sup> pad of 2 oz copper.

**ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)**

| PARAMETER                                                               | SYMBOL               | TEST CONDITIONS                                                                               | LIMITS |       |       | UNIT |
|-------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------|--------|-------|-------|------|
|                                                                         |                      |                                                                                               | MIN    | TYP   | MAX   |      |
| STATIC                                                                  |                      |                                                                                               |        |       |       |      |
| Drain-Source Breakdown Voltage                                          | V <sub>(BR)DSS</sub> | V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA                                                 | -10    |       |       | V    |
| Gate Threshold Voltage                                                  | V <sub>GS(th)</sub>  | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA                                   | -0.35  | -0.75 | -1.20 |      |
| Gate-Body Leakage                                                       | I <sub>GSS</sub>     | V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±8V                                                   |        |       | ±100  | nA   |
| Zero Gate Voltage Drain Current                                         | I <sub>DSS</sub>     | V <sub>DS</sub> = -8V, V <sub>GS</sub> = 0V                                                   |        |       | -1    | μA   |
|                                                                         |                      | V <sub>DS</sub> = -8V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 125 °C                          |        |       | -10   |      |
| On-State Drain Current <sup>1</sup>                                     | I <sub>D(ON)</sub>   | V <sub>DS</sub> = -5V, V <sub>GS</sub> = -4.5V                                                | 10     |       |       | A    |
| Drain-Source On-State Resistance <sup>1</sup>                           | R <sub>DS(ON)</sub>  | V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -6A                                                 |        | 12    | 16    | mΩ   |
|                                                                         |                      | V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -5A                                                 |        | 18    | 24    |      |
|                                                                         |                      | V <sub>GS</sub> = -1.8V, I <sub>D</sub> = -3A                                                 |        | 22    | 32    |      |
| Forward Transconductance <sup>1</sup>                                   | g <sub>fs</sub>      | V <sub>DS</sub> = -5V, I <sub>D</sub> = -6A                                                   |        | 16    |       | S    |
| DYNAMIC                                                                 |                      |                                                                                               |        |       |       |      |
| Input Capacitance                                                       | C <sub>iss</sub>     | V <sub>GS</sub> = 0V, V <sub>DS</sub> = -5V, f = 1MHz                                         |        | 1723  |       | pF   |
| Output Capacitance                                                      | C <sub>oss</sub>     |                                                                                               |        | 561   |       |      |
| Reverse Transfer Capacitance                                            | C <sub>rss</sub>     |                                                                                               |        | 431   |       |      |
| Total Gate Charge <sup>1,2</sup>                                        | Q <sub>g</sub>       | V <sub>DS</sub> = -6V, V <sub>GS</sub> = -4.5V,<br>I <sub>D</sub> = -6A                       |        | 13.9  |       | nC   |
| Gate-Source Charge <sup>1,2</sup>                                       | Q <sub>gs</sub>      |                                                                                               |        | 2.5   |       |      |
| Gate-Drain Charge <sup>1,2</sup>                                        | Q <sub>gd</sub>      |                                                                                               |        | 4.8   |       |      |
| Turn-On Delay Time <sup>1,2</sup>                                       | t <sub>d(on)</sub>   | V <sub>DS</sub> = -5V,<br>I <sub>D</sub> = -1A, V <sub>GS</sub> = -4.5V, R <sub>GS</sub> = 6Ω |        | 15    |       | nS   |
| Rise Time <sup>1,2</sup>                                                | t <sub>r</sub>       |                                                                                               |        | 25    |       |      |
| Turn-Off Delay Time <sup>1,2</sup>                                      | t <sub>d(off)</sub>  |                                                                                               |        | 40    |       |      |
| Fall Time <sup>1,2</sup>                                                | t <sub>f</sub>       |                                                                                               |        | 30    |       |      |
| SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T <sub>C</sub> = 25 °C) |                      |                                                                                               |        |       |       |      |
| Continuous Current                                                      | I <sub>S</sub>       |                                                                                               |        |       | -3    | A    |
| Pulsed Current <sup>3</sup>                                             | I <sub>SM</sub>      |                                                                                               |        |       | -12   |      |
| Forward Voltage <sup>1</sup>                                            | V <sub>SD</sub>      | I <sub>F</sub> = I <sub>S</sub> , V <sub>GS</sub> = 0V                                        |        |       | -1.2  | V    |

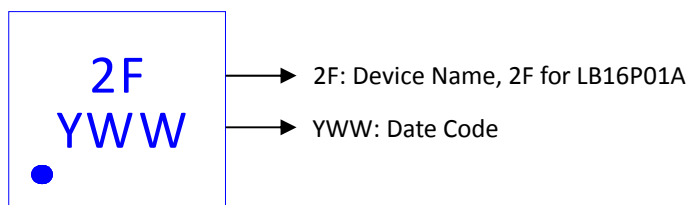
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

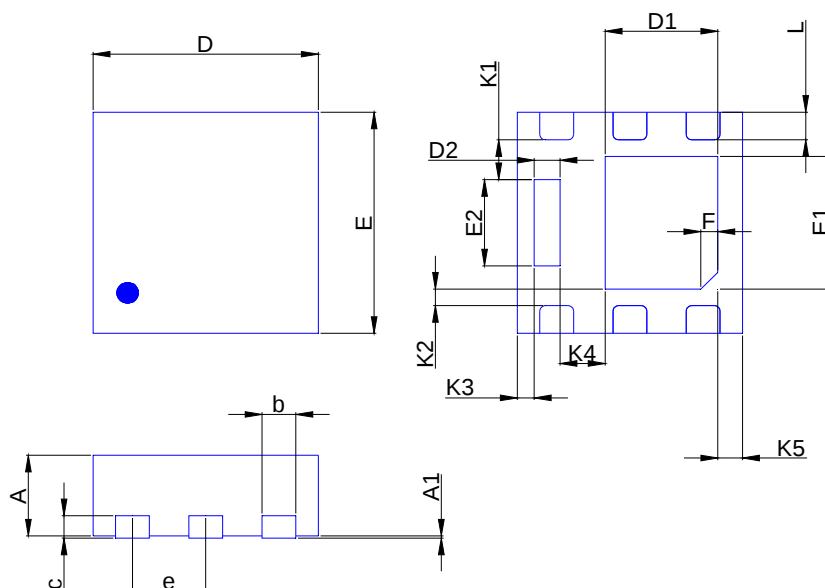
<sup>3</sup>Pulse width limited by maximum junction temperature.

## Ordering & Marking Information:

Device Name: LB16P01A for EDFN 2 x 2



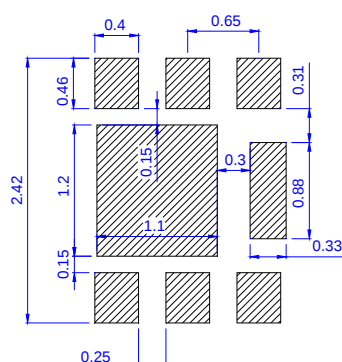
## Outline Drawing



Dimension in mm

| Dimension | A    | A1   | b    | c   | D   | D1  | D2   | E   | E1  | E2   | e    | F    | f   | K1    | K2   | L    | K3   | K4   | K5   |
|-----------|------|------|------|-----|-----|-----|------|-----|-----|------|------|------|-----|-------|------|------|------|------|------|
| Min.      | 0.50 | 0.00 | 0.25 |     | 1.9 | 1.0 | 0.13 | 1.9 | 1.1 | 0.65 |      |      |     | 0.306 | 0.10 | 0.2  | 0.10 | 0.27 | 0.17 |
| Typ.      |      | 0.02 | 0.30 | 0.1 | 2.0 | 1.1 | 0.25 | 2.0 | 1.2 | 0.75 | 0.65 | 0.15 | 45° | 0.356 | 0.15 | 0.25 | 0.15 |      | 0.22 |
| Max.      | 0.65 | 0.05 | 0.35 |     | 2.1 | 1.2 | 0.35 | 2.1 | 1.3 | 0.88 |      |      |     | 0.406 | 0.20 | 0.3  | 0.20 |      | 0.27 |

## Recommended minimum pads



# TYPICAL CHARACTERISTICS

