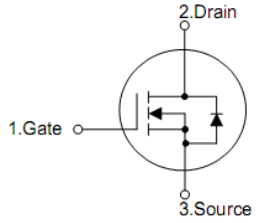
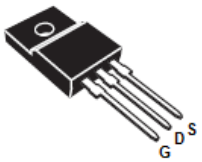
# N-Channel Power MOSFET

# BL15N30F

## FEATURES

- RDS(on) = 240 m (Typ.) @ VGS = 10 V, ID = 7.5 A
- Low Gate Charge (Typ. 28 nC)
- Low Crss (Typ. 17 pF)
- 100% Avalanche Tested
- Improved dv/dt Capability
- RoHS Compliant




**ITO-220AB**

## APPLICATIONS

- Lighting
- Uninterruptible Power Supply

## MOSFET Maximum Ratings $T_C$ = 25oC unless otherwise noted*

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{DS}$ | Drain-Source Voltage | 300 | V |
| $V_{GS}$ | Gate -Source Voltage | ±30 | V |
| $I_D$ | Drain Current Continuous at $T_C$=25℃<br>Continuous at $T_C$=100℃ | 15<br>9 | A |
| $I_{DM}$ | Drain Current(pulsed)Note1 | 60 | A |
| $E_{AS}$ | Single Pulsed Avalanche Energy (Note 2) | 731 | mJ |
| $E_{AR}$ | Repetitive Avalanche Energy (Note 1) | 17 | mJ |
| IAR | Avalanche Current (Note 1) | 15 | A |
| dv/dt | Peak Diode Recovery dv/dt (Note 3) | 15 | V/ns |
| $P_D$ | Power Dissipation $T_C$=25℃<br>Derate above 25°C | 170<br>1.45 | W<br>W/℃ |
| $R_{\theta JA}$ | Thermal Resistance,Junction-to-Ambient | 62.5 | ℃/W |
| $R_{\theta JC}$ | Thermal Resistance,Junction-to-Case | 0.7 | ℃/W |
| $T_j$ $T_{stg}$ | Junction and StorageTemperature Range | -55 to +150 | ℃ |

# N-Channel Power MOSFET BL15N30F

## ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS}$=0V,$I_D$=250μA | 300 | - | - | V |
| Drain-Source Leakage Current | $I_{DSS}$ | $V_{DS}$=300V, $V_{GS}$=0V | - | - | 1 | μA |
| Gate- Source Leakage Current | $I_{GSS}$ | $V_{DS}$=0V, $V_{GS}$=±30V | - | - | ±100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$=$V_{GS}$, $I_D$=250μA | 2.5 | - | 5.0 | V |
| Static drain-Source On-State resistance | $R_{DS(on)}$ | $V_{GS}$=10V,$I_D$=7.5A | - | 0.24 | 0.3 | Ω |
| Drain-Source Diode Forward Voltage | $V_{SD}$ | $I_{SD}$=15A,$V_{GS}$=0 | - | - | 1.4 | V |
| Input Capacitance | $C_{ISS}$ | $V_{DS}$=25V,$V_{GS}$=0V,f=1.0MHz | - | 1310 | 1750 | pF |
| Output Capacitance | $C_{OSS}$ | | - | 210 | 280 | pF |
| Reverse Transfer Capacitance | $C_{RSS}$ | | - | 17 | 25 | pF |
| Turn-On Delay Time | $t_{D(ON)}$ | $V_{DD}$ =200V, $I_D$=15A, $R_G$=25Ω | - | 26 | 62 | ns |
| Rise Time | $t_R$ | | - | 55 | 120 | ns |
| Turn-Off Delay Time | $t_{D(OFF)}$ | | - | 72 | 154 | ns |
| Fall Time | $t_F$ | | - | 40 | 90 | ns |
| Total Gate Charge | $Q_g$ | $V_{DS}$=320V,$V_{GS}$=10V $I_D$=15A | - | 28 | 36 | nC |
| Gate-source Charge | $Q_{gs}$ | | - | 8 | | nC |
| Gate-drain Charge | $Q_{gd}$ | | - | 12 | | nC |
| Maximum Body-Diode Continuous Current | $I_S$ | | - | - | 15 | A |
| Maximum Body-Diode Pulsed Current | $I_{SM}$ | | - | - | 60 | A |

Notes: 1: Repetitive Rating: Pulse width limited by maximum junction temperature

2: L = 6.5mH, IAS = 15A, VDD = 50V, RG = 25 , Starting TJ = 25°C

3: ISD 15A, di/dt 200A/ s, VDD BVDSS, Starting TJ = 25°C

4: Essentially Independent of Operating Temperature Typical Characteristics

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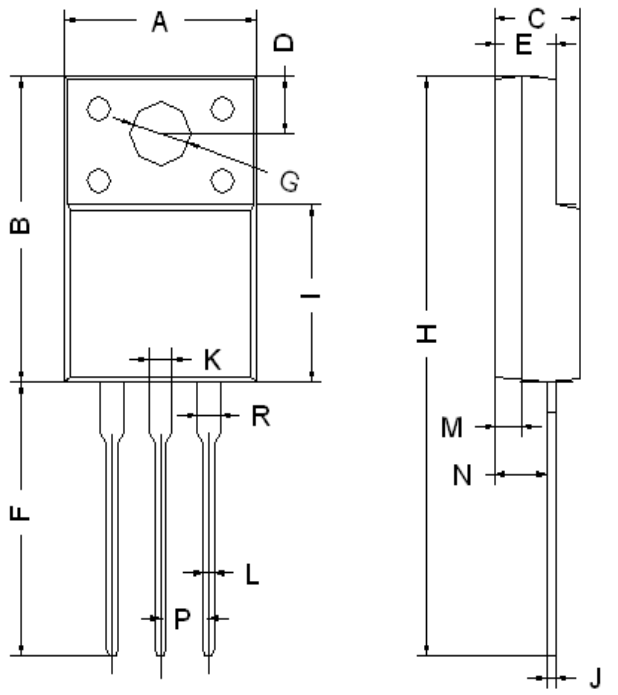
## PACKAGE OUTLINE

Plastic surface mounted package ITO-220AB




| ITO-220AB | | |
|---|---|---|
| Dim | Min | Max |
| A | 9.90 | 10.30 |
| B | 14.80 | 15.20 |
| C | 4.50 Typical | |
| D | 2.70 Typical | |
| E | 2.80 | 3.30 |
| F | 13.00 | 13.60 |
| G | 3.2 Typical | |
| H | 28.00 | 28.60 |
| I | 7.90 | 8.90 |
| J | 0.50 Typical | |
| L | 0.70 | 0.90 |
| M | 1.40 Typical | |
| N | 2.60 | 2.80 |
| P | 2.45 | 2.65 |
| K/R | 1.20 Typical | |
| All Dimensions in mm | | |