

# isc N-Channel MOSFET Transistor

# FCP125N60E

### • FEATURES

- With TO-220 packaging
- High speed switching
- Low gate input resistance
- Standard level gate drive
- Easy to use
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### • APPLICATIONS

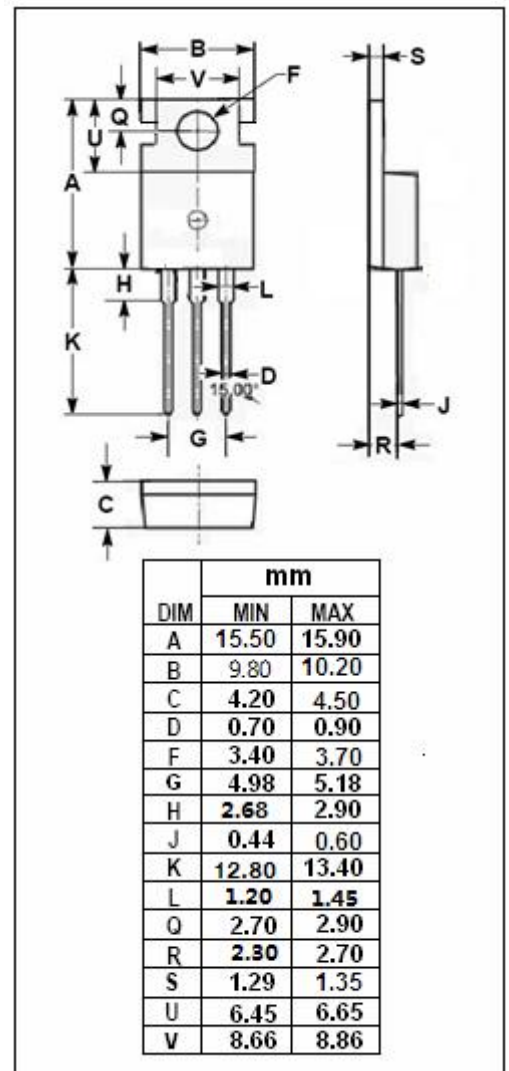
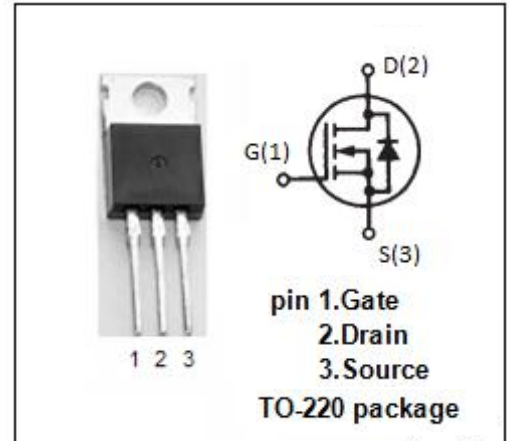
- Power supply
- Switching applications

### • ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)

| SYMBOL           | PARAMETER   | VALUE    | UNIT |
|------------------|---|----------|------|
| V <sub>DSS</sub> | Drain-Source Voltage  | 600      | V    |
| V <sub>GSS</sub> | Gate-Source Voltage   | ±20      | V    |
| I <sub>D</sub>   | Drain Current-Continuous;@T <sub>c</sub> =25°C<br>T <sub>c</sub> =100°C | 29<br>18 | A    |
| I <sub>DM</sub>  | Drain Current-Single Pulsed   | 87       | A    |
| P <sub>D</sub>   | Total Dissipation   | 278      | W    |
| T <sub>j</sub>   | Operating Junction Temperature  | -55~150  | °C   |
| T <sub>stg</sub> | Storage Temperature   | -55~150  | °C   |

### • THERMAL CHARACTERISTICS

| SYMBOL                | PARAMETER                          | MAX  | UNIT |
|-----------------------|------------------------------------|------|------|
| R <sub>th(ch-c)</sub> | Channel-to-case thermal resistance | 0.45 | °C/W |



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## ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

| SYMBOL              | PARAMETER                      | CONDITIONS   | MIN | TYP | MAX  | UNIT |
|---------------------|--------------------------------|--|-----|-----|------|------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage | V <sub>GS</sub> =0V; I <sub>D</sub> = 1mA                | 600 |     |      | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> =V <sub>GS</sub> ; I <sub>D</sub> =250uA | 2.5 |     | 3.5  | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> = 14.5A            |     |     | 125  | mΩ   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> =±20V; V <sub>DS</sub> = 0V              |     |     | ±100 | nA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> = 600V; V <sub>GS</sub> = 0V             |     |     | 1    | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>SD</sub> =14.5A, V <sub>GS</sub> = 0 V            |     |     | 1.2  | V    |

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