

# Isc N-Channel MOSFET Transistor

# IPA60R520E6

## • FEATURES

- With TO-220F package
- Low input capacitance and gate charge
- Low gate input resistance
- Reduced switching and conduction losses
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • APPLICATIONS

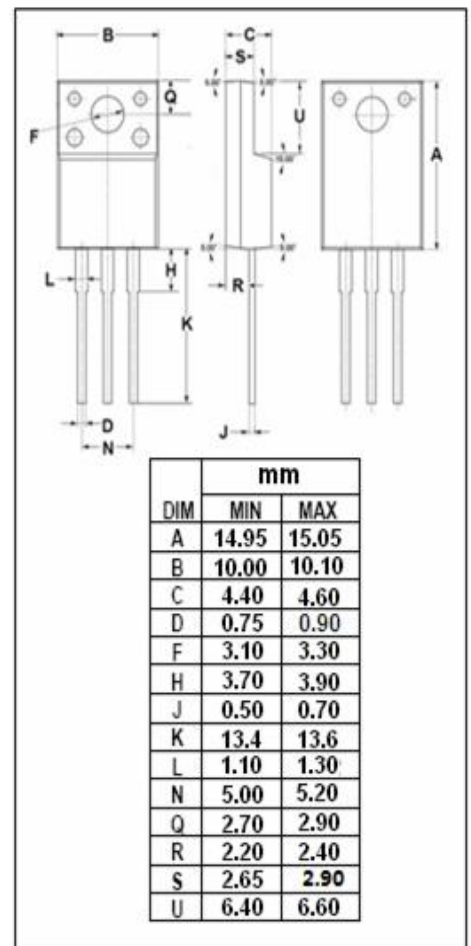
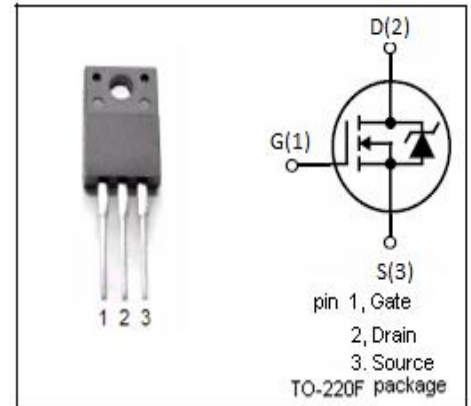
- Switching applications

## • ABSOLUTE MAXIMUM RATINGS( $T_a=25^{\circ}\text{C}$ )

| SYMBOL    | PARAMETER                                    | VALUE    | UNIT               |
|-----------|--|----------|--------------------|
| $V_{DSS}$ | Drain-Source Voltage                         | 600      | V                  |
| $V_{GS}$  | Gate-Source Voltage-Continuous               | $\pm 20$ | V                  |
| $I_D$     | Drain Current-Continuous                     | 8.1      | A                  |
| $I_{DM}$  | Drain Current-Single Plused                  | 22       | A                  |
| $P_D$     | Total Dissipation @ $T_c=25^{\circ}\text{C}$ | 29       | W                  |
| $T_j$     | Max. Operating Junction Temperature          | -55~150  | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature                          | -55~150  | $^{\circ}\text{C}$ |

## • THERMAL CHARACTERISTICS

| SYMBOL         | PARAMETER                             | MAX | UNIT                 |
|----------------|---------------------------------------|-----|----------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance    | 4.3 | $^{\circ}\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 80  | $^{\circ}\text{C/W}$ |



**Isc N-Channel MOSFET Transistor****IPA60R520E6****• ELECTRICAL CHARACTERISTICS**T<sub>c</sub>=25°C unless otherwise specified

| SYMBOL              | PARAMETER                      | CONDITIONS   | MIN | TYPE | MAX  | UNIT |
|---------------------|--------------------------------|--|-----|------|------|------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage | V <sub>GS</sub> =0V; I <sub>D</sub> =0.25mA                        | 600 |      |      | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =0.23mA         | 2.5 | 3    | 3.5  | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> =2.8A; T <sub>j</sub> =25°C  |     | 0.47 | 0.52 | Ω    |
| 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; T <sub>j</sub> =25°C |     |      | 1    | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>SD</sub> =3.5A, V <sub>GS</sub> = 0 V                       |     | 0.9  |      | V    |

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