

# Isc N-Channel MOSFET Transistor

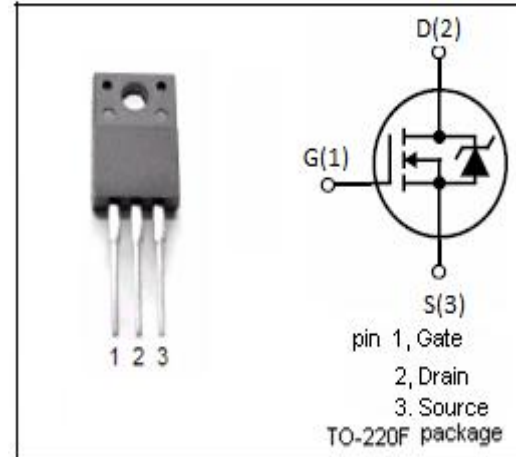
# IPA80R1K4CE

### • FEATURES

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

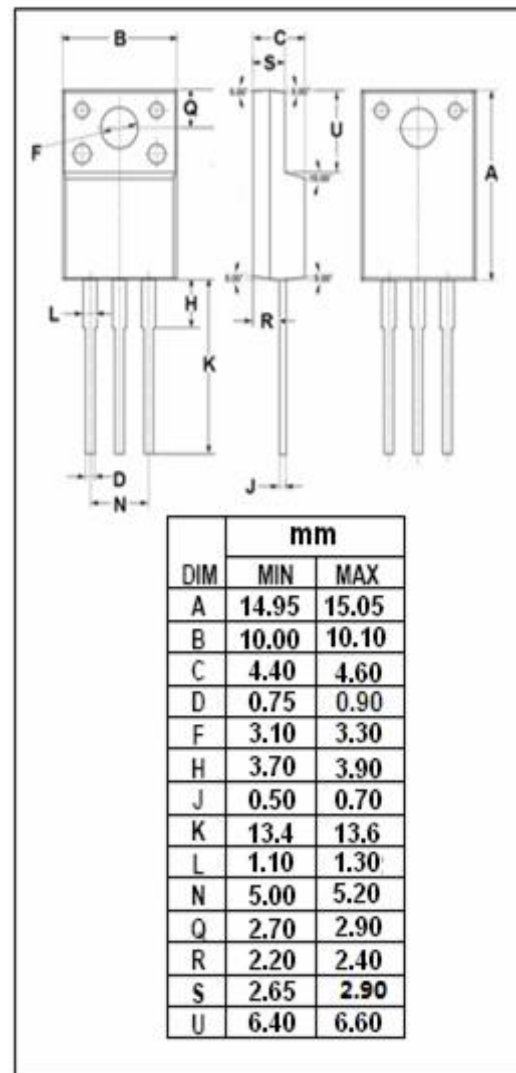
### • APPLICATIONS

- Switching applications



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

| SYMBOL    | PARAMETER   | VALUE      | UNIT               |
|-----------|---|------------|--------------------|
| $V_{DS}$  | Drain-Source Voltage  | 800        | V                  |
| $V_{GS}$  | Gate-Source Voltage   | $\pm 30$   | V                  |
| $I_D$     | Drain Current-Continuous @ $T_c=25^{\circ}\text{C}$<br>( $V_{GS}$ at 10V) $T_c=100^{\circ}\text{C}$ | 3.9<br>2.3 | A                  |
| $I_{DM}$  | Drain Current-Single Pulsed   | 12         | A                  |
| $P_D$     | Total Dissipation @ $T_c=25^{\circ}\text{C}$  | 38         | W                  |
| $T_j$     | Max. Operating Junction Temperature   | 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    | 4.0 | $^{\circ}\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 80  | $^{\circ}\text{C/W}$ |

**Isc N-Channel MOSFET Transistor****IPA80R1K4CE****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> =0.25mA   | 800 |      |          | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =0.24mA  | 2.1 |      | 3.9      | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> =2.3A   |     | 1220 | 1400     | mΩ   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> =±20V; V <sub>DS</sub> = 0V   |     |      | ±0.1     | μA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> = 800V; V <sub>GS</sub> = 0V; T <sub>J</sub> =25°C<br>V <sub>DS</sub> = 800V; V <sub>GS</sub> = 0V; T <sub>J</sub> =150°C |     |      | 1<br>100 | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>SD</sub> =3.9A, V <sub>GS</sub> = 0V   |     | 1.0  |          | V    |

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