

## Isc N-Channel MOSFET Transistor

## IPA60R160P6

## • 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

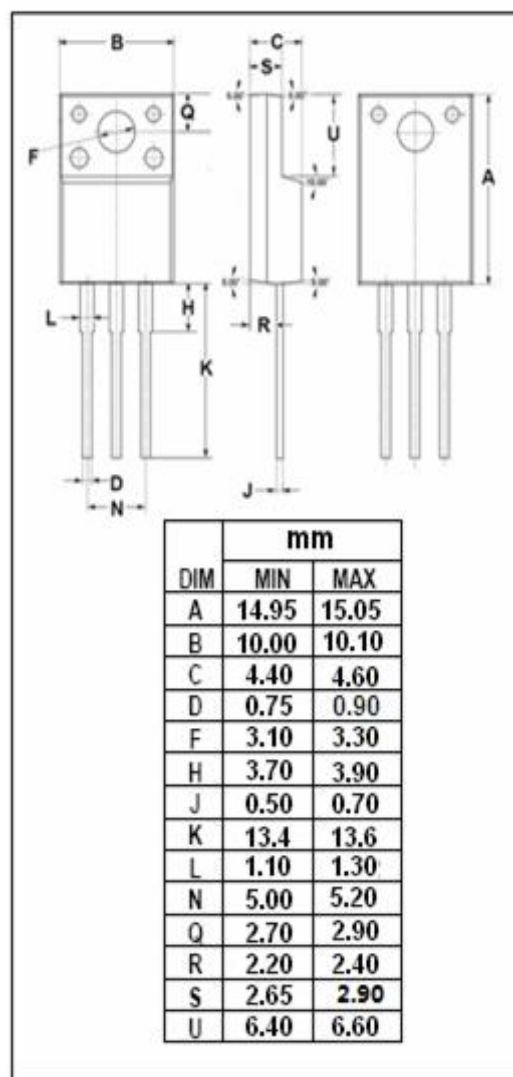
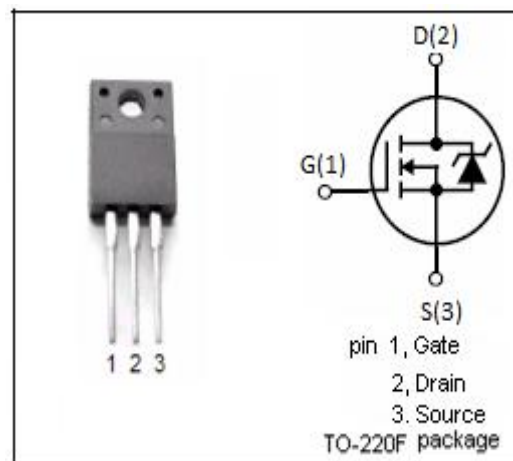
- Switching applications

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

| SYMBOL    | PARAMETER                                                                                           | VALUE      | UNIT               |
|-----------|-----------------------------------------------------------------------------------------------------|------------|--------------------|
| $V_{DS}$  | Drain-Source Voltage                                                                                | 600        | V                  |
| $V_{GS}$  | Gate-Source Voltage                                                                                 | $\pm 20$   | V                  |
| $I_D$     | Drain Current-Continuous @ $T_c=25^{\circ}\text{C}$<br>( $V_{GS}$ at 10V) $T_c=100^{\circ}\text{C}$ | 23.8<br>15 | A                  |
| $I_{DM}$  | Drain Current-Single Pulsed                                                                         | 68         | A                  |
| $P_D$     | Total Dissipation @ $T_c=25^{\circ}\text{C}$                                                        | 34         | 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    | 3.67 | $^{\circ}\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 80   | $^{\circ}\text{C/W}$ |



**Isc N-Channel MOSFET Transistor****IPA60R160P6****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> =0.75mA                                                                                | 3.5 | 4.0            | 4.5  | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> =9A; T <sub>J</sub> =25°C<br>V <sub>GS</sub> = 10V; I <sub>D</sub> =9A; T <sub>J</sub> =150°C       |     | 0.144<br>0.374 | 0.16 | 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<br>V <sub>DS</sub> = 600V; V <sub>GS</sub> = 0V; T <sub>J</sub> =150°C |     | 10             | 1    | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>SD</sub> =11.3A, V <sub>GS</sub> = 0 V                                                                                             |     | 0.9            |      | V    |

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