

# Isc N-Channel MOSFET Transistor

IPA60R099P6

## • 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

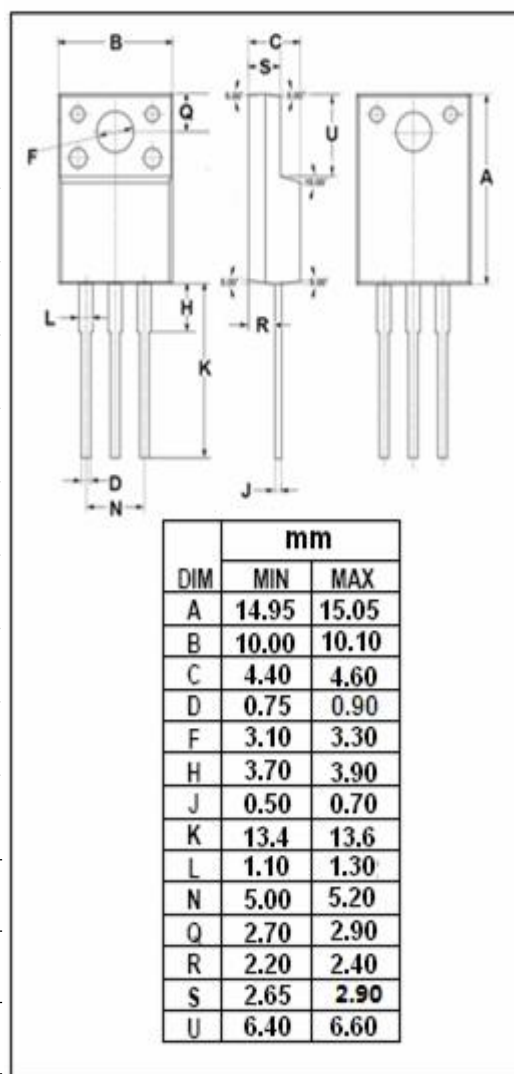
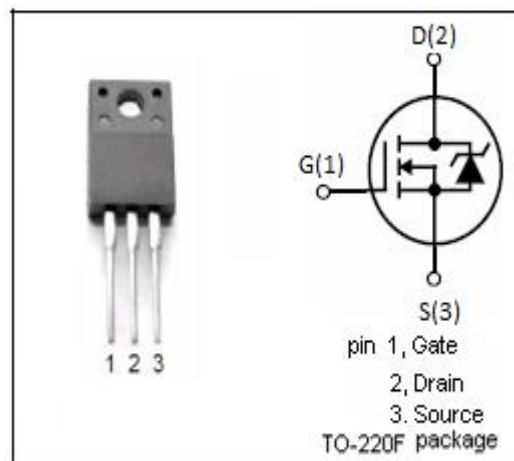
- Switching applications

## • ABSOLUTE MAXIMUM RATINGS(T<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>(V <sub>GS</sub> at 10V) T <sub>c</sub> =100°C | 37.9<br>24 | A    |
| I <sub>DM</sub>  | Drain Current-Single Pulsed                                                                      | 109        | A    |
| P <sub>D</sub>   | Total Dissipation @T <sub>c</sub> =25°C                                                          | 34         | W    |
| T <sub>j</sub>   | Max. 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    | 3.65 | °C/W |
| R <sub>th(ch-a)</sub> | Channel-to-ambient thermal resistance | 80   | °C/W |



**Isc N-Channel MOSFET Transistor****IPA60R099P6****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> =1.21mA                                                                                | 3.5 |           | 4.5  | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> =14.5A; T <sub>j</sub> =25°C<br>V <sub>GS</sub> = 10V; I <sub>D</sub> =14.5A; T <sub>j</sub> =150°C |     | 89<br>232 | 99   | 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; T <sub>j</sub> =25°C<br>V <sub>DS</sub> = 600V; V <sub>GS</sub> = 0V; T <sub>j</sub> =150°C |     | 10        | 5    | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>SD</sub> =18.1A, V <sub>GS</sub> = 0 V                                                                                             |     | 0.9       |      | V    |

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