

# Isc N-Channel MOSFET Transistor

# IPA60R280C6

## FEATURES

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

## APPLICATIONS

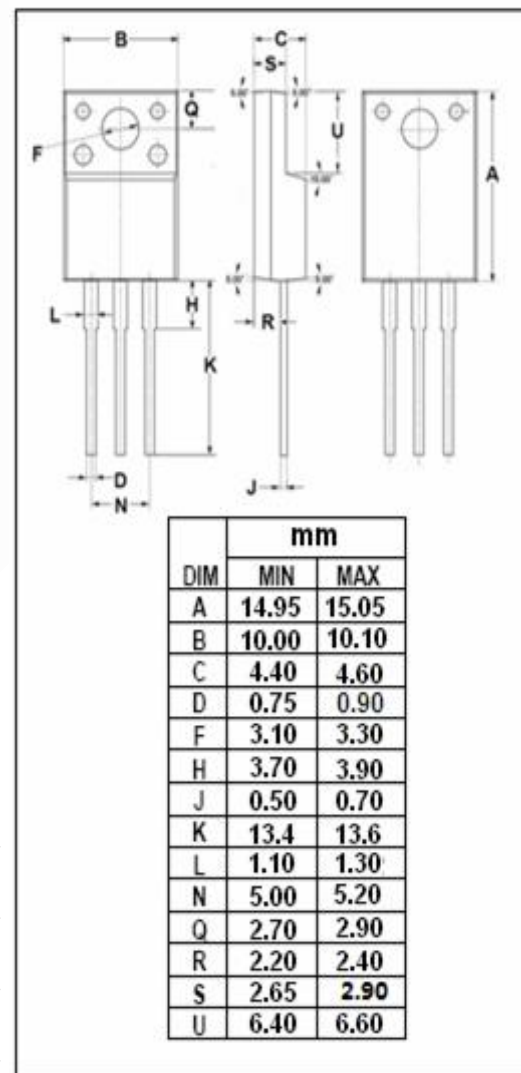
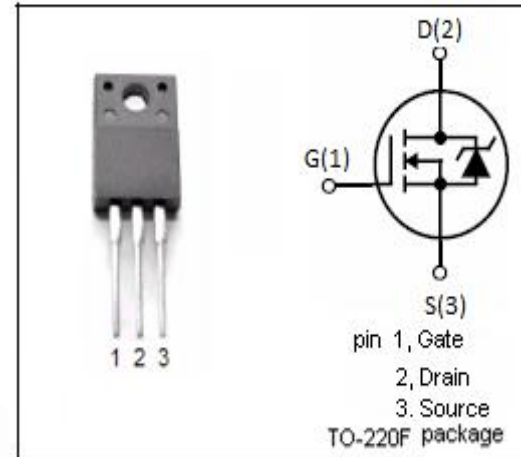
- Switching applications

## 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>$T_c=100^{\circ}\text{C}$ | 13.8<br>8.7 | A                  |
| $I_{DM}$  | Drain Current-Single Pulsed                                                      | 40          | A                  |
| $P_D$     | Total Dissipation @ $T_c=25^{\circ}\text{C}$                                     | 32          | W                  |
| $T_{ch}$  | 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    | 3.9 | $^{\circ}\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 80  | $^{\circ}\text{C/W}$ |



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### ELECTRICAL CHARACTERISTICS

$T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL       | PARAMETER                      | CONDITIONS                                                                                                | MIN | TYP | MAX       | UNIT      |
|--------------|--------------------------------|-----------------------------------------------------------------------------------------------------------|-----|-----|-----------|-----------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage | $V_{GS}=0V; I_D=0.25mA$                                                                                   | 600 |     |           | V         |
| $V_{GS(th)}$ | Gate Threshold Voltage         | $V_{DS}= \pm 20V; I_D=0.43mA$                                                                             | 2.5 |     | 3.5       | V         |
| $R_{DS(on)}$ | Drain-Source On-Resistance     | $V_{GS}= 10V; I_D=6.5A$                                                                                   |     | 250 | 280       | $m\Omega$ |
| $I_{GSS}$    | Gate-Source Leakage Current    | $V_{GS}= \pm 20V; V_{DS}= 0V$                                                                             |     |     | $\pm 0.1$ | $\mu A$   |
| $I_{DSS}$    | Drain-Source Leakage Current   | $V_{DS}= 600V; V_{GS}= 0V; T_J=25^{\circ}\text{C}$<br>$V_{DS}= 600V; V_{GS}= 0V; T_J=150^{\circ}\text{C}$ |     |     | 1<br>10   | $\mu A$   |
| $V_{SDF}$    | Diode forward voltage          | $I_{SD}=6.5A, V_{GS}= 0V$                                                                                 |     | 0.9 |           | V         |