

## isc N-Channel MOSFET Transistor

## IPA80R310CE

## • FEATURES

- With TO-220F packaging
- With low gate drive requirements
- Easy to drive
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • APPLICATIONS

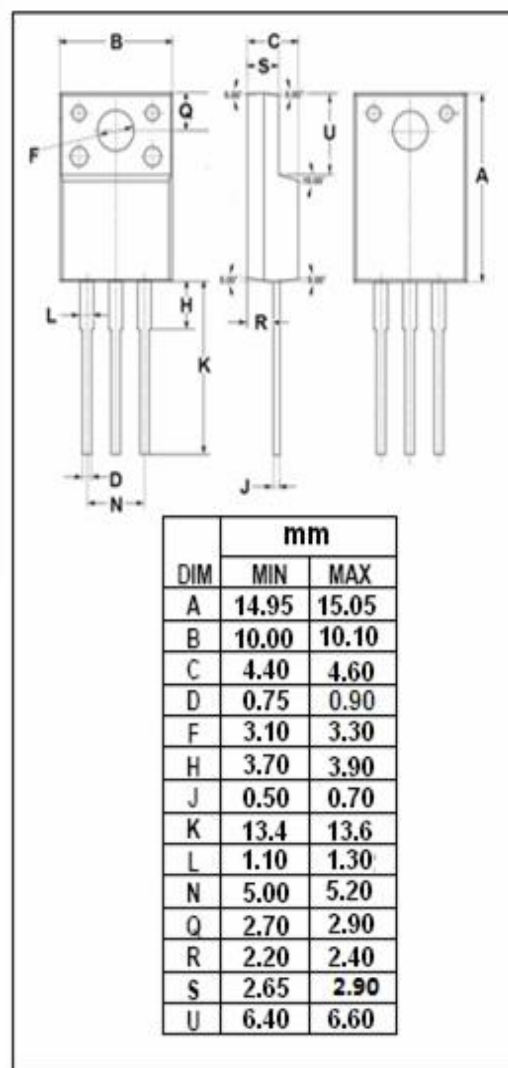
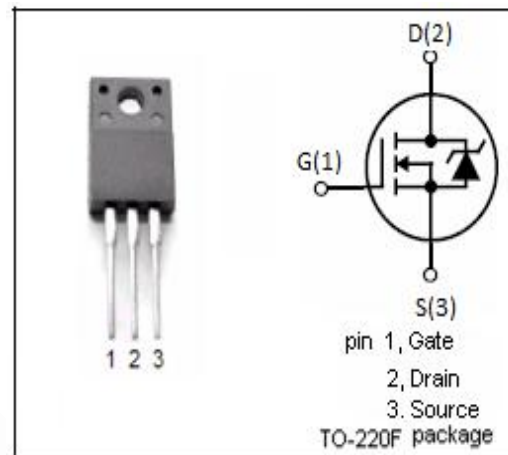
- Switching applications

• 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>$T_c=100^{\circ}\text{C}$ | 16.7<br>10.6 | A                  |
| $I_{DM}$  | Drain Current-Single Pulsed                                                      | 51           | A                  |
| $P_D$     | Total Dissipation                                                                | 35           | W                  |
| $T_j$     | Operating Junction Temperature                                                   | -40~150      | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature                                                              | -40~150      | $^{\circ}\text{C}$ |

## • THERMAL CHARACTERISTICS

| SYMBOL         | PARAMETER                          | MAX | UNIT                 |
|----------------|------------------------------------|-----|----------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance | 3.6 | $^{\circ}\text{C/W}$ |



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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 | $V_{GS}=0V; I_D=0.25mA$                                                        | 800 |     |           | V         |
| $V_{GS(th)}$ | Gate Threshold Voltage         | $V_{DS}=V_{GS}; I_D=1mA$                                                       | 2.1 |     | 3.9       | V         |
| $R_{DS(on)}$ | Drain-Source On-Resistance     | $V_{GS}=10V; I_D=11A$                                                          |     | 250 | 310       | $m\Omega$ |
| $I_{GSS}$    | Gate-Source Leakage Current    | $V_{GS}=\pm 20V; V_{DS}=0V$                                                    |     |     | $\pm 0.1$ | $\mu A$   |
| $I_{DSS}$    | Drain-Source Leakage Current   | $V_{DS}=800V; V_{GS}=0V; @T_c=25^{\circ}\text{C}$<br>$T_c=150^{\circ}\text{C}$ |     |     | 20<br>250 | $\mu A$   |
| $V_{SDF}$    | Diode forward voltage          | $I_{SD}=16.7A, V_{GS}=0V$                                                      |     | 1.0 |           | V         |