

## isc N-Channel MOSFET Transistor

## IRFU4105Z

## • FEATURES

- With TO-251(IPAK) packaging
- High speed switching
- Easy to use
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • APPLICATIONS

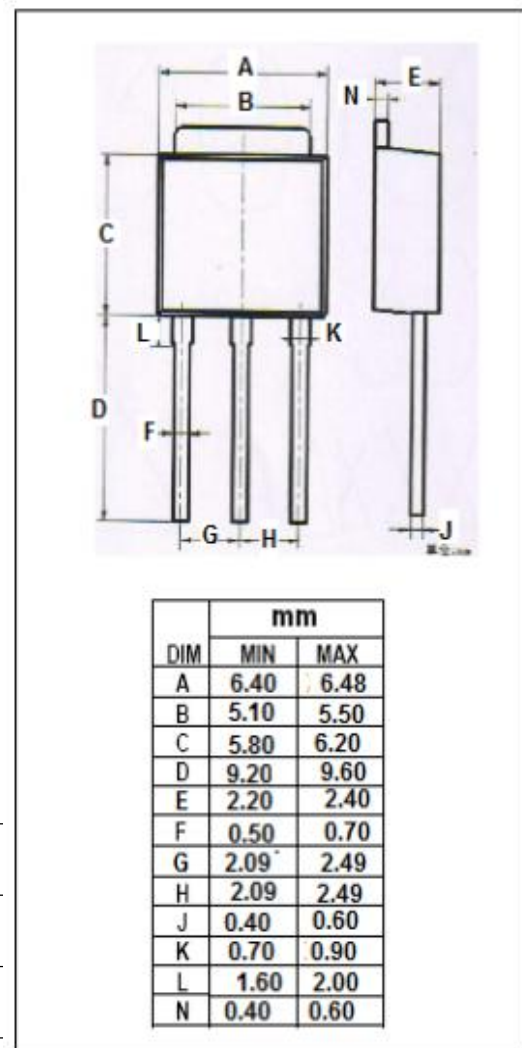
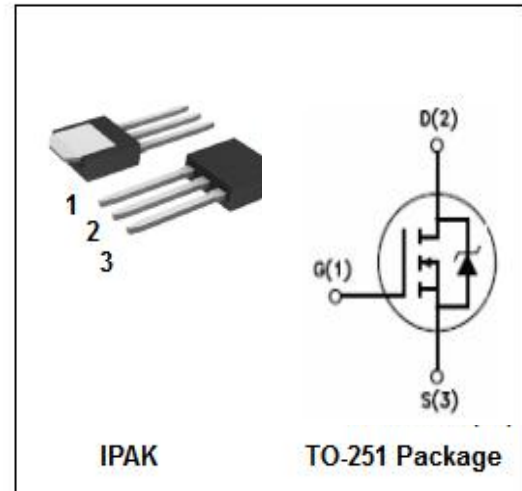
- Power supply
- DC-DC converters
- Motor control
- Switching applications

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

| SYMBOL    | PARAMETER                      | VALUE    | UNIT               |
|-----------|--------------------------------|----------|--------------------|
| $V_{DS}$  | Drain-Source Voltage           | 55       | V                  |
| $V_{GS}$  | Gate-Source Voltage            | $\pm 20$ | V                  |
| $I_D$     | Drain Current-Continuous       | 30       | A                  |
| $I_{DM}$  | Drain Current-Single Pulsed    | 120      | A                  |
| $P_D$     | Total Dissipation              | 48       | W                  |
| $T_j$     | Operating Junction Temperature | -55~175  | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature            | -55~175  | $^{\circ}\text{C}$ |

## • THERMAL CHARACTERISTICS

| SYMBOL         | PARAMETER                             | MAX  | UNIT                 |
|----------------|---------------------------------------|------|----------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance    | 3.12 | $^{\circ}\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 40   | $^{\circ}\text{C/W}$ |



**isc N-Channel MOSFET Transistor****IRFU4105Z****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  | 55  |     |           | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> =V <sub>GS</sub> ; I <sub>D</sub> =0.25mA   | 2.0 |     | 4.0       | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> =18A  |     | 19  | 24.5      | mΩ   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> = ±20V; V <sub>DS</sub> = 0V  |     |     | ±0.2      | μA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> = 55V; V <sub>GS</sub> = 0V; T <sub>j</sub> =25°C<br>V <sub>DS</sub> = 55V; V <sub>GS</sub> = 0V; T <sub>j</sub> =125°C |     |     | 20<br>250 | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>SD</sub> =18A, V <sub>GS</sub> =0V   |     |     | 1.3       | V    |

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