

## isc N-Channel MOSFET Transistor

IRFU420

## FEATURES

- Drain Current  $-I_D = 2.4A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DS} = 500V (Min)$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 3.0 \Omega (Max)$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## DESCRIPTION

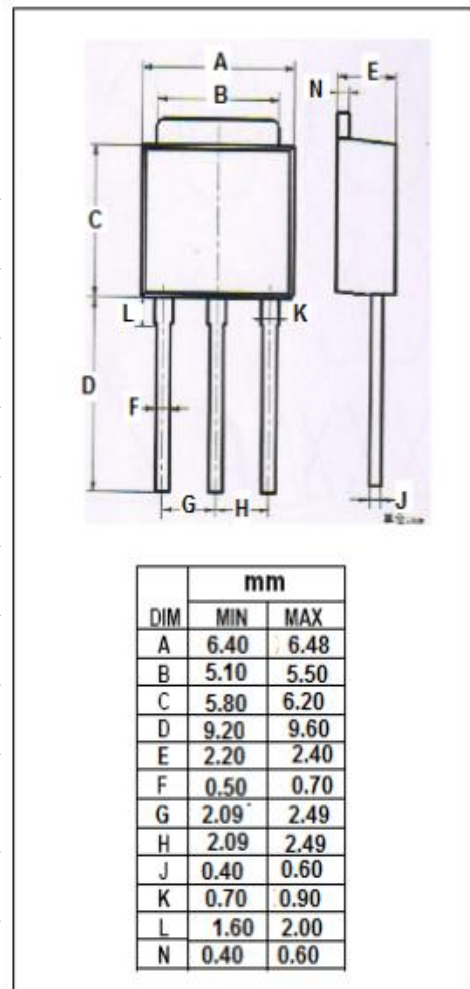
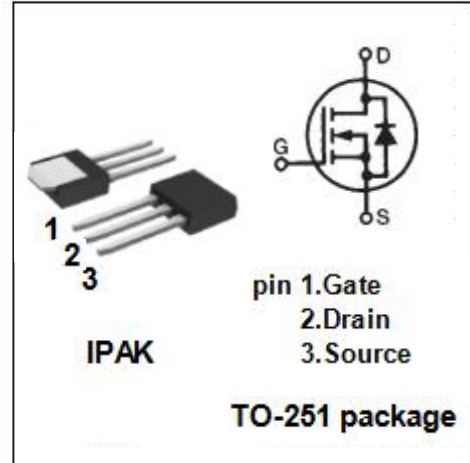
- Designed for use in switch mode power supplies and general purpose applications.

ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ C$ )

| SYMBOL    | PARAMETER                              | VALUE          | UNIT       |
|-----------|----------------------------------------|----------------|------------|
| $V_{DS}$  | Drain-Source Voltage                   | 500            | V          |
| $V_{GS}$  | Gate-Source Voltage-Continuous         | $\pm 20$       | V          |
| $I_D$     | Drain Current-Continuous               | 2.4            | A          |
| $I_{DM}$  | Drain Current-Single Pluse             | 8.0            | A          |
| $P_D$     | Total Dissipation @ $T_C = 25^\circ C$ | 42             | W          |
| $T_J$     | Max. Operating Junction Temperature    | $-55 \sim 150$ | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                    | $-55 \sim 150$ | $^\circ C$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                            | MAX | UNIT         |
|--------------|--------------------------------------|-----|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 3.0 | $^\circ C/W$ |



**isc N-Channel MOSFET Transistor****IRFU420****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

| SYMBOL               | PARAMETER                       | CONDITIONS                                                                                                       | MIN | MAX       | UNIT |
|----------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------|-----|-----------|------|
| V <sub>(BR)DSS</sub> | Drain-Source Breakdown Voltage  | V <sub>GS</sub> = 0; I <sub>D</sub> = 0.25mA                                                                     | 500 |           | V    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage          | V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> = 0.25mA                                                      | 2   | 4         | V    |
| R <sub>DS(on)</sub>  | Drain-Source On-Resistance      | V <sub>GS</sub> = 10V; I <sub>D</sub> = 1.4A                                                                     |     | 3.0       | Ω    |
| I <sub>GSS</sub>     | Gate-Body Leakage Current       | V <sub>GS</sub> = ±20V; V <sub>DS</sub> = 0                                                                      |     | ±100      | nA   |
| I <sub>DSS</sub>     | Zero Gate Voltage Drain Current | V <sub>DS</sub> = 500V; V <sub>GS</sub> = 0<br>V <sub>DS</sub> = 400V; V <sub>GS</sub> = 0@T <sub>J</sub> =125°C |     | 25<br>250 | μA   |
| V <sub>SD</sub>      | Forward On-Voltage              | I <sub>S</sub> = 2.4A; V <sub>GS</sub> = 0                                                                       |     | 1.6       | V    |

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