

isc N-Channel MOSFET Transistor

IRFS650A

FEATURES

- Avalanche Rugged Technology
- Rugged Gate Oxide Technology
- Lower Input Capacitance
- Improved Gate Charge
- Extended Safe Operating Area

DESCRIPTION

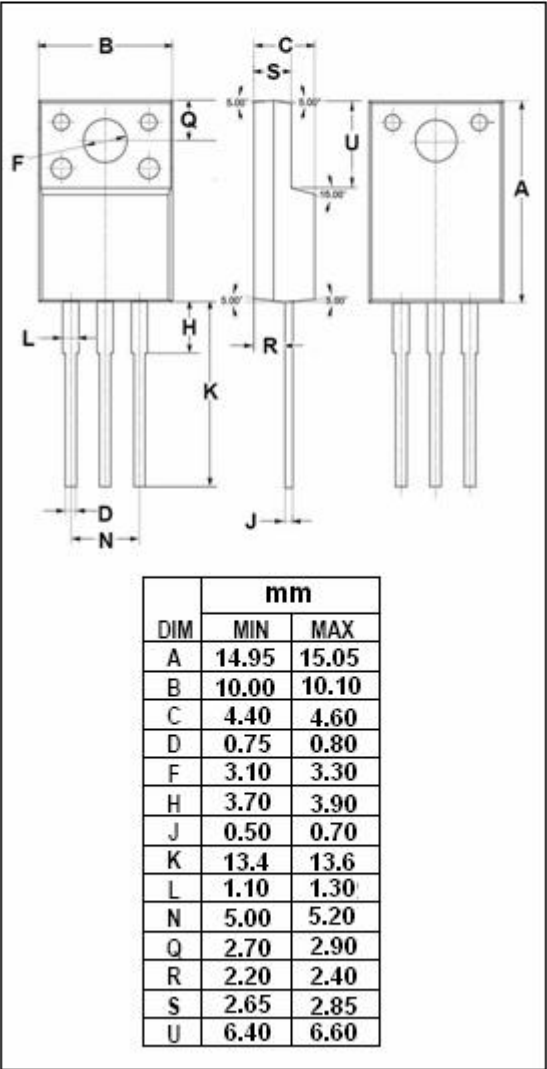
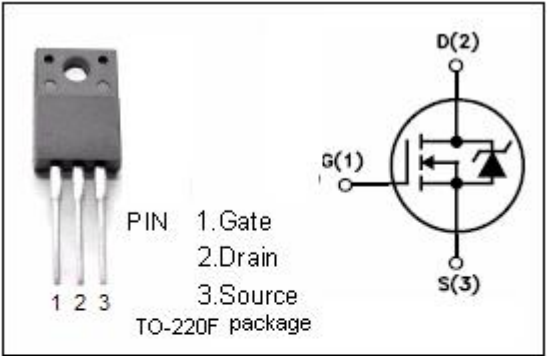
- Designed for use in switch mode power supplies and general purpose applications.

ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)

| SYMBOL           | PARAMETER                               | VALUE   | UNIT |
|------------------|-----------------------------------------|---------|------|
| V <sub>DSS</sub> | Drain-Source Voltage                    | 200     | V    |
| V <sub>GS</sub>  | Gate-Source Voltage-Continuous          | ± 30    | V    |
| I <sub>D</sub>   | Drain Current-Continuous                | 15.8    | A    |
| I <sub>DM</sub>  | Drain Current-Single Pluse              | 112     | A    |
| P <sub>D</sub>   | Total Dissipation @T <sub>C</sub> =25°C | 50      | 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 j-c</sub> | Thermal Resistance, Junction to Case    | 2.51 | °C/W |
| R <sub>th j-a</sub> | Thermal Resistance, Junction to Ambient | 62.5 | °C/W |



**isc N-Channel MOSFET Transistor****IRFS650A****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL        | PARAMETER                       | CONDITIONS                                                                                         | MIN | MAX       | UNIT          |
|---------------|---------------------------------|----------------------------------------------------------------------------------------------------|-----|-----------|---------------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage  | $V_{GS}=0$ ; $I_D=0.25\text{mA}$                                                                   | 200 |           | V             |
| $V_{GS(th)}$  | Gate Threshold Voltage          | $V_{DS}=V_{GS}$ ; $I_D=0.25\text{mA}$                                                              | 2   | 4         | V             |
| $R_{DS(on)}$  | Drain-Source On-Resistance      | $V_{GS}=10\text{V}$ ; $I_D=7.9\text{A}$                                                            |     | 0.085     | $\Omega$      |
| $I_{GSS}$     | Gate-Body Leakage Current       | $V_{GS}=\pm 30\text{V}$ ; $V_{DS}=0$                                                               |     | $\pm 100$ | nA            |
| $I_{DSS}$     | Zero Gate Voltage Drain Current | $V_{DS}=200\text{V}$ ; $V_{GS}=0$<br>$V_{DS}=160\text{V}$ ; $V_{GS}=0$ ; $T_J=125^{\circ}\text{C}$ |     | 10<br>100 | $\mu\text{A}$ |
| $V_{SD}$      | Forward On-Voltage              | $I_S=15.8\text{A}$ ; $V_{GS}=0$                                                                    |     | 1.5       | V             |