

isc N-Channel Mosfet Transistor

IRF633

• FEATURES

- $R_{DS(on)} = 0.6 \Omega$
- 8A and 150V
- single pulse avalanche energy rated
- SOA is Power- Dissipation Limited
- Linear Transfer Characteristics
- High Input Impedance

• DESCRIPTION

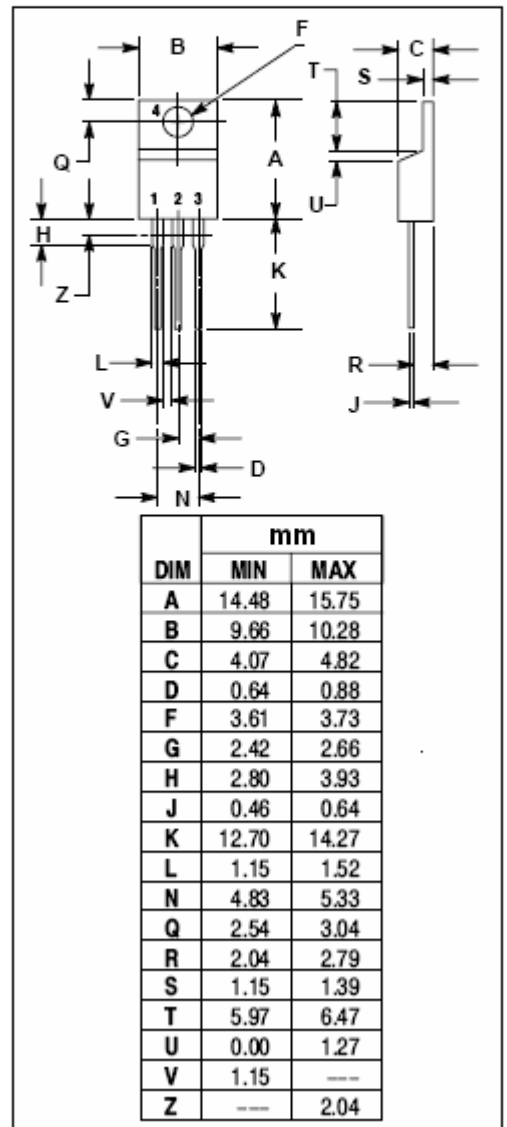
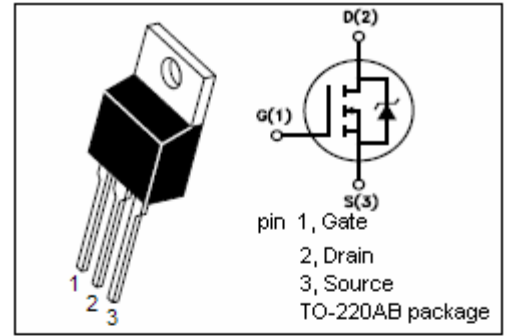
- Designed for high speed applications, such as switching power supplies , AC and DC motor controls ,relay and solenoid drivers and other pulse.

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

| SYMBOL    | PARAMETER                            | VALUE    | UNIT       |
|-----------|--------------------------------------|----------|------------|
| $V_{DSS}$ | Drain-Source Voltage                 | 150      | V          |
| $V_{GS}$  | Gate-Source Voltage-Continuous       | $\pm 20$ | V          |
| $I_D$     | Drain Current-Continuous             | 8        | A          |
| $I_{DM}$  | Drain Current-Single Plused          | 32       | A          |
| $P_D$     | Total Dissipation @ $T_C=25^\circ C$ | 75       | W          |
| $T_j$     | Max. Operating Junction Temperature  | -55~150  | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                  | -55~150  | $^\circ C$ |

• THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                              | MAX  | UNIT         |
|--------------|--|------|--------------|
| $R_{th j-c}$ | Thermal Resistance,Junction to Case    | 1.67 | $^\circ C/W$ |
| $R_{th j-a}$ | Thermal Resistance,Junction to Ambient | 80   | $^\circ C/W$ |



**isc N-Channel Mosfet Transistor****IRF633****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL        | PARAMETER                       | CONDITIONS   | MIN | TYP | MAX       | UNIT          |
|---------------|---------------------------------|--|-----|-----|-----------|---------------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage  | $V_{GS}=0; I_D=0.25\text{mA}$                          | 150 |     |           | 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      | $V_{GS}=10\text{V}; I_D=5\text{A}$                     |     |     | 0.6       | $\Omega$      |
| $I_{GSS}$     | Gate-Body Leakage Current       | $V_{GS}=\pm 20\text{V}; V_{DS}=0$                      |     |     | $\pm 500$ | nA            |
| $I_{DSS}$     | Zero Gate Voltage Drain Current | $V_{DS}=150\text{V}; V_{GS}=0$                         |     |     | 250       | $\mu\text{A}$ |
| $V_{SD}$      | Forward On-Voltage              | $I_S=9\text{A}; V_{GS}=0$                              |     |     | 2.0       | V             |
| $C_{iss}$     | Input Capacitance               | $V_{DS}=25\text{V}, V_{GS}=0\text{V}, F=1.0\text{MHz}$ |     | 600 |           | pF            |
| $C_{oss}$     | Output Capacitance              |  |     | 250 |           | pF            |
| $C_{rss}$     | Reverse Transfer Capacitance    |  |     | 80  |           | pF            |

**• SWITCHING CHARACTERISTICS ( $T_C=25^{\circ}\text{C}$ )**

| SYMBOL     | PARAMETER           | CONDITIONS  | MIN | TYP | MAX | UNIT |
|------------|---------------------|---|-----|-----|-----|------|
| $T_d(on)$  | Turn-on Delay Time  | $V_{DD}=90\text{V}, I_D=9.0\text{A}$<br>$R_G=9.1\Omega$ |     |     | 30  | ns   |
| $T_r$      | Rise Time           |   |     |     | 50  | ns   |
| $T_d(off)$ | Turn-off Delay Time |   |     |     | 50  | ns   |
| $T_f$      | Fall Time           |   |     |     | 40  | ns   |