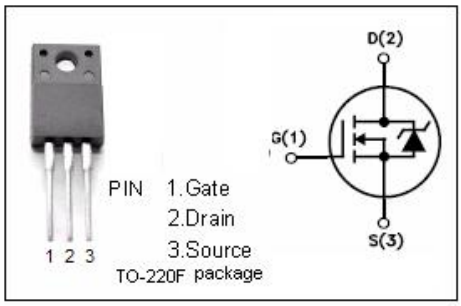
# isc N-Channel MOSFET Transistor IRF822FI

## FEATURES

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

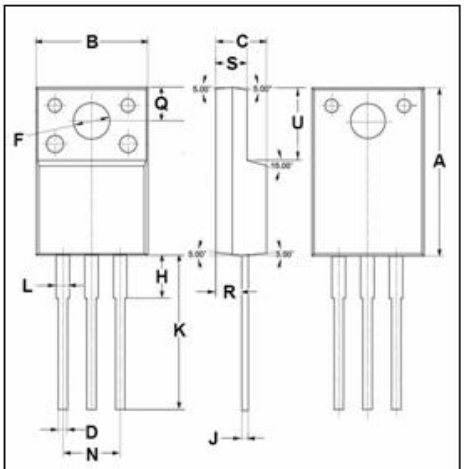



## DESCRIPTION

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

## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $V_{DSS}$ | Drain-Source Voltage | 500 | V |
| $V_{GS}$ | Gate-Source Voltage-Continuous | ±20 | V |
| $I_D$ | Drain Current-Continuous | 1.9 | A |
| $I_{DM}$ | Drain Current-Single Pluse | 7.6 | A |
| $P_D$ | Total Dissipation @$T_C$=25℃ | 35 | W |
| $T_J$ | Max. Operating Junction Temperature | -55~150 | ℃ |
| $T_{stg}$ | Storage Temperature | -55~150 | ℃ |




| DIM | mm MIN | MAX |
|---|---|---|
| A | 14.95 | 15.05 |
| B | 10.00 | 10.10 |
| C | 4.40 | 4.60 |
| D | 0.75 | 0.80 |
| F | 3.10 | 3.30 |
| H | 3.70 | 3.90 |
| J | 0.50 | 0.70 |
| K | 13.4 | 13.6 |
| L | 1.10 | 1.30 |
| N | 5.00 | 5.20 |
| Q | 2.70 | 2.90 |
| R | 2.20 | 2.40 |
| S | 2.65 | 2.85 |
| U | 6.40 | 6.60 |

## THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $R_{th\ j\text{-}c}$ | Thermal Resistance, Junction to Case | 2.5 | ℃/W |
| $R_{th\ j\text{-}a}$ | Thermal Resistance, Junction to Ambient | 80 | ℃/W |

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## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|---|---|---|---|---|---|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | $V_{GS}$= 0; $I_D$= 0.25mA | 500 | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}$= $V_{GS}$; $I_D$= 0.25mA | 2 | 4 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}$= 10V; $I_D$=1.5A | | 4 | Ω |
| $I_{GSS}$ | Gate-Body Leakage Current | $V_{GS}$= ±20V;$V_{DS}$= 0 | | ±500 | nA |
| $I_{DSS}$ | Zero Gate Voltage Drain Current | $V_{DS}$= 500V; $V_{GS}$= 0 | | 250 | μA |
| $V_{SD}$ | Forward On-Voltage | $I_S$= 2.5A; $V_{GS}$= 0 | | 1.6 | V |
| Ciss | Input Capacitance | $V_{DS}$=25V,$V_{GS}$=0V, F=1.0MHz | | 510 | pF |
| Coss | Output Capacitance | | | 60 | pF |
| Crss | Reverse Transfer Capacitance | | | 26 | pF |

• **SWITCHING CHARACTERISTICS ($T_C$=25℃)**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| Td(on) | Turn-on Delay Time | $V_{DD}$=250V,$I_D$=2.5A $R_G$=18Ω | | 11 | 15 | ns |
| Tr | Rise Time | | | 11 | 18 | ns |
| Td(off) | Turn-off Delay Time | | | 29 | 42 | ns |
| Tf | Fall Time | | | 12 | 18 | ns |

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