

## isc N-Channel MOSFET Transistor

## IRFR220N, IIRFR220N

## • FEATURES

- Static drain-source on-resistance:  
 $R_{DS(on)} \leq 600m\Omega$
- Enhancement mode:
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • DESCRIPTION

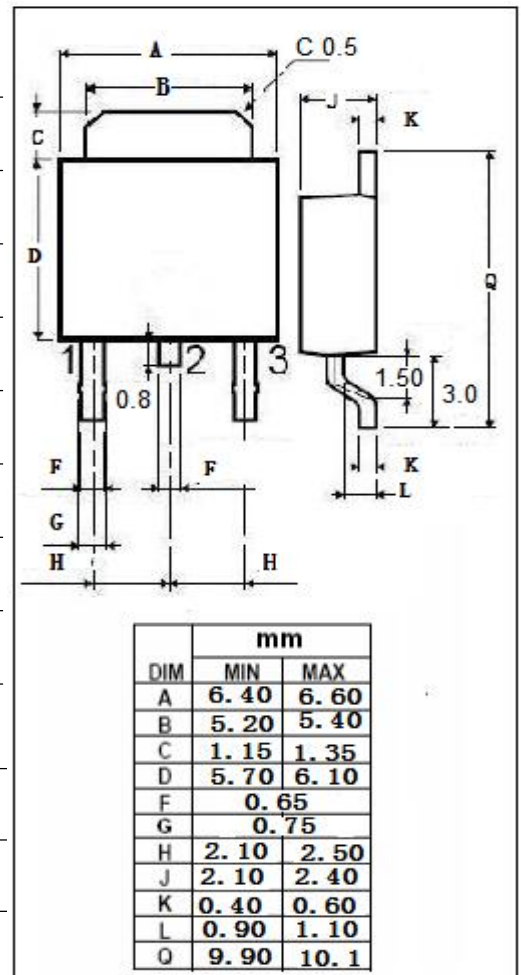
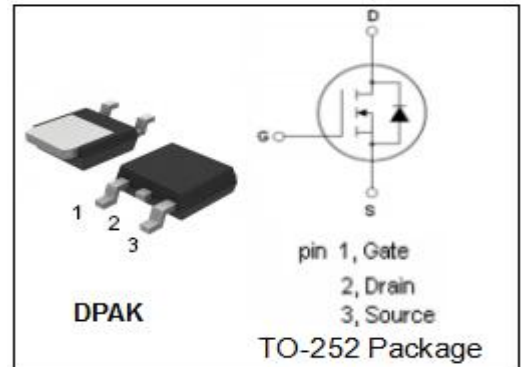
- High frequency DC-DC converters

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

| SYMBOL    | PARAMETER                                  | VALUE    | UNIT             |
|-----------|--------------------------------------------|----------|------------------|
| $V_{DS}$  | Drain-Source Voltage                       | 200      | V                |
| $V_{GS}$  | Gate-Source Voltage                        | $\pm 20$ | V                |
| $I_D$     | Drain Current-Continuous                   | 5        | A                |
| $I_{DM}$  | Drain Current-Single Pulsed                | 20       | A                |
| $P_D$     | Total Dissipation @ $T_c=25^\circ\text{C}$ | 43       | W                |
| $T_j$     | Max. Operating Junction Temperature        | 175      | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature                        | -55~175  | $^\circ\text{C}$ |

## • THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                             | MAX | UNIT               |
|---------------|---------------------------------------|-----|--------------------|
| $R_{th(j-c)}$ | Channel-to-case thermal resistance    | 3.5 | $^\circ\text{C/W}$ |
| $R_{th(j-a)}$ | Channel-to-ambient thermal resistance | 110 | $^\circ\text{C/W}$ |



**isc N-Channel MOSFET Transistor****IRFR220N, IIRFR220N****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL       | PARAMETER                      | CONDITIONS                         | MIN | TYP | MAX       | UNIT      |
|--------------|--------------------------------|------------------------------------|-----|-----|-----------|-----------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage | $V_{GS}=0V$ ; $I_D=250\ \mu A$     | 200 |     |           | V         |
| $V_{GS(th)}$ | Gate Threshold Voltage         | $V_{DS}=V_{GS}$ ; $I_D=250\ \mu A$ | 2   |     | 4         | V         |
| $R_{DS(on)}$ | Drain-Source On-Resistance     | $V_{GS}=10V$ ; $I_D=2.9A$          |     |     | 600       | $m\Omega$ |
| $I_{GSS}$    | Gate-Source Leakage Current    | $V_{GS}=\pm 20V$                   |     |     | $\pm 0.1$ | $\mu A$   |
| $I_{DSS}$    | Drain-Source Leakage Current   | $V_{DS}=200V$ ; $V_{GS}=0V$        |     |     | 25        | $\mu A$   |
| $V_{SD}$     | Diode forward voltage          | $I_S=2.9A$ , $V_{GS}=0V$           |     |     | 1.3       | V         |

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