

## isc N-Channel MOSFET Transistor

## IRFR3505, IIRFR3505

## • FEATURES

- Static drain-source on-resistance:  
 $R_{DS(on)} \leq 13m\Omega$
- Enhancement mode:
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • DESCRIPTION

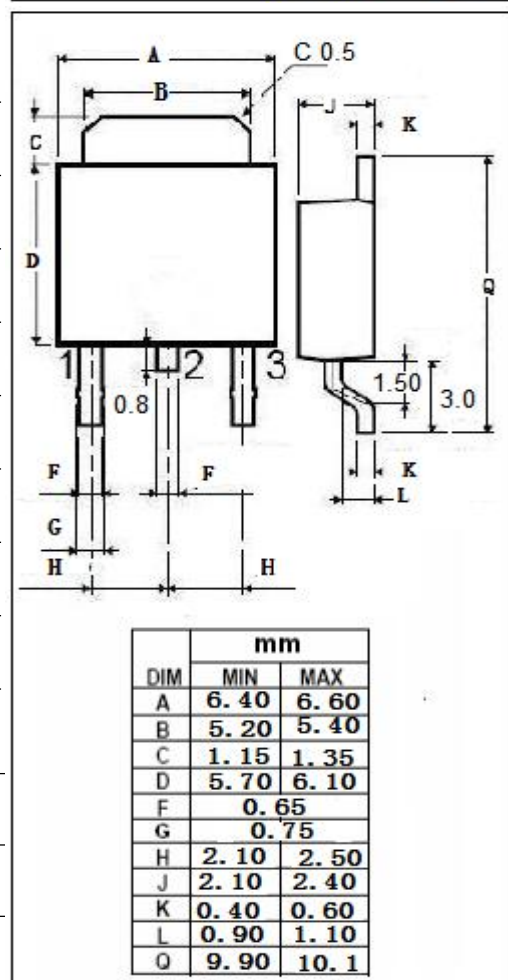
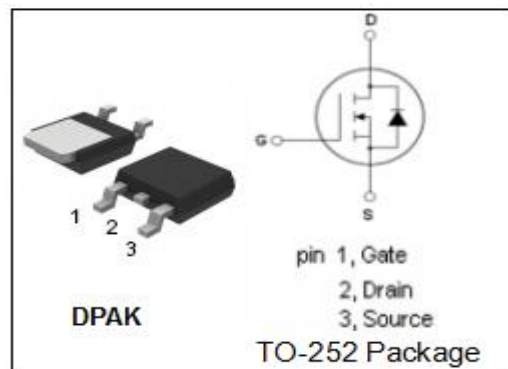
- Fast switching

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

| SYMBOL    | PARAMETER                                  | VALUE    | UNIT             |
|-----------|--------------------------------------------|----------|------------------|
| $V_{DS}$  | Drain-Source Voltage                       | 55       | V                |
| $V_{GS}$  | Gate-Source Voltage                        | $\pm 20$ | V                |
| $I_D$     | Drain Current-Continuous                   | 71       | A                |
| $I_{DM}$  | Drain Current-Single Pulsed                | 280      | A                |
| $P_D$     | Total Dissipation @ $T_c=25^\circ\text{C}$ | 140      | 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    | 1.09 | $^\circ\text{C/W}$ |
| $R_{th(j-a)}$ | Channel-to-ambient thermal resistance | 110  | $^\circ\text{C/W}$ |



**isc N-Channel MOSFET Transistor****IRFR3505, IIRFR3505****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

| SYMBOL              | PARAMETER                      | CONDITIONS                                                | MIN | TYP | MAX  | UNIT |
|---------------------|--------------------------------|-----------------------------------------------------------|-----|-----|------|------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage | V <sub>GS</sub> =0V; I <sub>D</sub> =250 μA               | 55  |     |      | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> =V <sub>GS</sub> ; I <sub>D</sub> =250 μA | 2   |     | 4    | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> =10V; I <sub>D</sub> =30A                 |     |     | 13   | mΩ   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> = ±20V                                    |     |     | ±0.2 | μA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> =55V; V <sub>GS</sub> = 0V                |     |     | 20   | μA   |
| V <sub>SD</sub>     | Diode forward voltage          | I <sub>S</sub> =30A, V <sub>GS</sub> = 0V                 |     |     | 1.3  | V    |

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