

Isc N-Channel MOSFET Transistor

IRL3705ZS

• FEATURES

- With To-263(D2PAK) package
- Low input capacitance and gate charge
- Low gate input resistance
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• APPLICATIONS

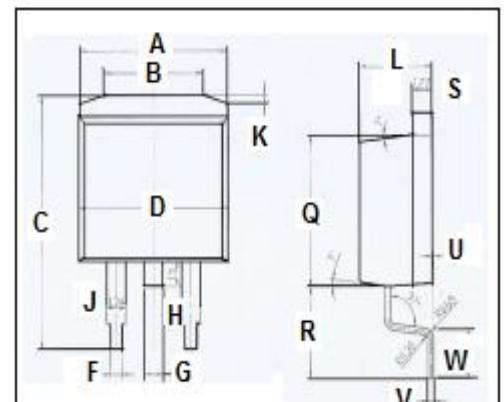
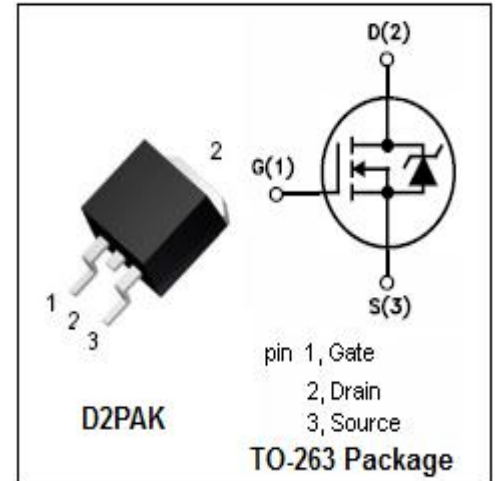
- Switching applications

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|----------|--------------------|
| V_{DSS} | Drain-Source Voltage | 55 | V |
| V_{GSS} | Gate-Source Voltage | ± 16 | V |
| I_D | Drain Current-Continuous $T_c=25^{\circ}\text{C}$ $T_c=100^{\circ}\text{C}$ | 86 61 | A |
| I_{DM} | Drain Current-Single Pulsed | 340 | A |
| P_D | Total Dissipation @ $T_c=25^{\circ}\text{C}$ | 130 | W |
| T_{ch} | Max. Operating Junction Temperature | 175 | $^{\circ}\text{C}$ |
| T_{stg} | Storage Temperature | -55~175 | $^{\circ}\text{C}$ |

• THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|----------------|---------------------------------------|------|----------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance | 1.14 | $^{\circ}\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 62 | $^{\circ}\text{C/W}$ |



| DIM | mm | |
|-----|-------|-------|
| | MIN | MAX |
| A | 10 | |
| B | 6.6 | 6.8 |
| C | 15.23 | 15.25 |
| D | 10.15 | 10.17 |
| F | 0.76 | 0.78 |
| G | 1.26 | 1.28 |
| H | 1.4 | 1.6 |
| J | 1.33 | 1.35 |
| K | 0.4 | 0.6 |
| L | 4.6 | 4.8 |
| Q | 8.69 | 8.71 |
| R | 5.28 | 5.30 |
| S | 1.26 | 1.28 |
| U | 0.0 | 0.2 |
| V | 0.37 | 0.39 |
| W | 2.80 | 2.82 |

Isc N-Channel MOSFET Transistor**IRL3705ZS****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------|--------------------------------|---|-----|-----|-----------|-----------|
| BV_{DSS} | Drain-Source Breakdown Voltage | $V_{GS}=0V; I_D=0.25mA$ | 55 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=V_{GS}; I_D=0.25mA$ | 1.0 | | 3.0 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}=10V; I_D=52A$ | | 6.5 | 8.0 | $m\Omega$ |
| I_{GSS} | Gate-Source Leakage Current | $V_{GS}=\pm 16V; V_{DS}=0V$ | | | ± 0.2 | μA |
| I_{DSS} | Drain-Source Leakage Current | $V_{DS}=55V; V_{GS}=0V; T_j=25^{\circ}\text{C}$ $V_{DS}=55V; V_{GS}=0V; T_j=125^{\circ}\text{C}$ | | | 20 250 | μA |
| V_{SDF} | Diode forward voltage | $I_{SD}=52A, V_{GS}=0V$ | | | 1.3 | V |

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