

isc N-Channel MOSFET Transistor IPD50R650CE, IIPD50R650CE

• FEATURES

- Static drain-source on-resistance:
 $R_{DS(on)} \leq 650\text{m}\Omega$
- Enhancement mode:
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

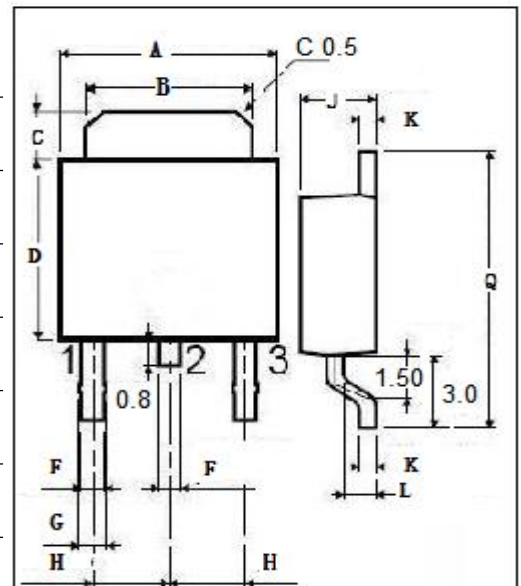
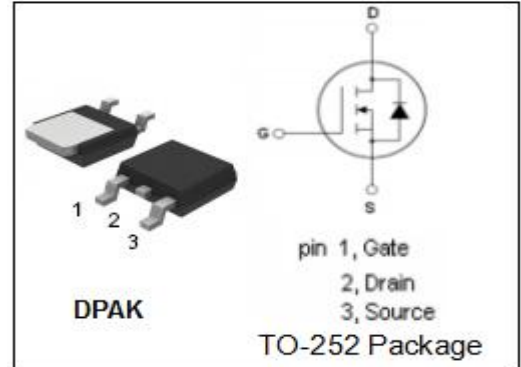
- Fast switching

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--------------------------------------------|----------|------------------|
| V_{DS} | Drain-Source Voltage | 500 | V |
| V_{GS} | Gate-Source Voltage | ± 20 | V |
| I_D | Drain Current-Continuous | 9 | A |
| I_{DM} | Drain Current-Single Pulsed | 19 | A |
| P_D | Total Dissipation @ $T_c=25^\circ\text{C}$ | 69 | W |
| T_j | Max. Operating Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -55~150 | $^\circ\text{C}$ |

• THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|---------------------------------------|------|--------------------|
| $R_{th(j-c)}$ | Channel-to-case thermal resistance | 1.81 | $^\circ\text{C/W}$ |
| $R_{th(j-a)}$ | Channel-to-ambient thermal resistance | 62 | $^\circ\text{C/W}$ |



| DIM | mm | |
|-----|------|------|
| | MIN | MAX |
| A | 6.40 | 6.60 |
| B | 5.20 | 5.40 |
| C | 1.15 | 1.35 |
| D | 5.70 | 6.10 |
| F | 0.65 | |
| G | 0.75 | |
| H | 2.10 | 2.50 |
| J | 2.10 | 2.40 |
| K | 0.40 | 0.60 |
| L | 0.90 | 1.10 |
| Q | 9.90 | 10.1 |

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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------|--------------------------------|---------------------------------|-----|------|-----|-----------|
| BV_{DSS} | Drain-Source Breakdown Voltage | $V_{GS}=0V; I_D=1mA$ | 500 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=V_{GS}; I_D=150\ \mu A$ | 2.5 | | 3.5 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}=13V; I_D=1.8A$ | | | 650 | $m\Omega$ |
| I_{GSS} | Gate-Source Leakage Current | $V_{GS}=20V$ | | | 0.1 | μA |
| I_{DSS} | Drain-Source Leakage Current | $V_{DS}=500V; V_{GS}=0V$ | | | 1 | μA |
| V_{SD} | Diode forward voltage | $I_F=2.3A, V_{GS}=0V$ | | 0.84 | | V |

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