

# Isc N-Channel MOSFET Transistor

# STD11NM50N

**• FEATURES**

- With To-252(DPAK) 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**

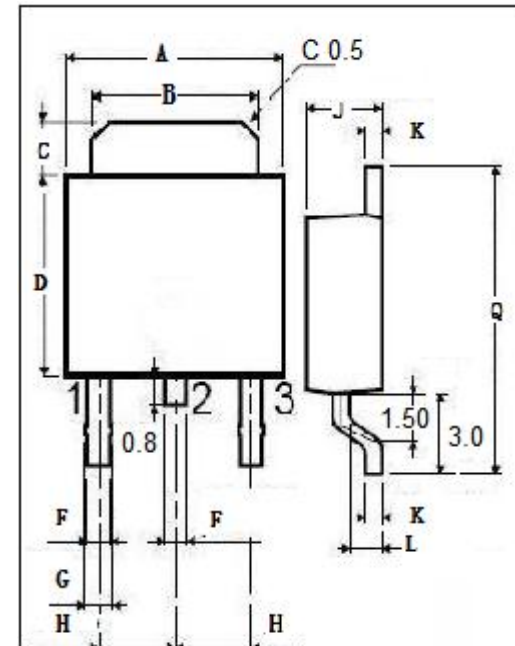
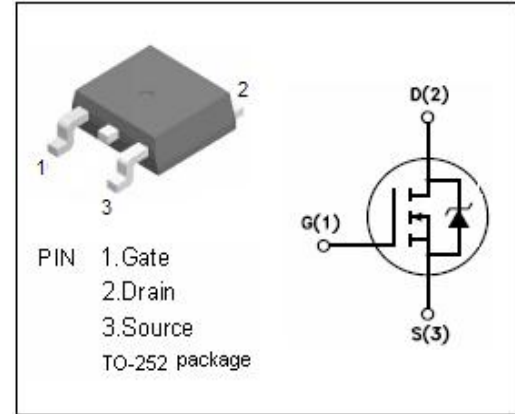
- Switching applications

**• ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

| SYMBOL           | PARAMETER  | VALUE    | UNIT |
|------------------|--|----------|------|
| V <sub>DSS</sub> | Drain-Source Voltage   | 500      | V    |
| V <sub>GSS</sub> | Gate-Source Voltage  | ±25      | V    |
| I <sub>D</sub>   | Drain Current-Continuous@T <sub>c</sub> =25°C<br>T <sub>c</sub> =100°C | 8.5<br>6 | A    |
| I <sub>DM</sub>  | Drain Current-Single Pulsed  | 34       | A    |
| P <sub>D</sub>   | Total Dissipation @T <sub>c</sub> =25°C                                | 70       | W    |
| T <sub>ch</sub>  | Max. Operating Junction Temperature                                    | 150      | °C   |
| T <sub>stg</sub> | Storage Temperature  | -55~150  | °C   |

**• THERMAL CHARACTERISTICS**

| SYMBOL                | PARAMETER                             | MAX  | UNIT |
|-----------------------|---------------------------------------|------|------|
| R <sub>th(ch-c)</sub> | Channel-to-case thermal resistance    | 50   | °C/W |
| R <sub>th(ch-a)</sub> | Channel-to-ambient thermal resistance | 1.79 | °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 |

**Isc N-Channel MOSFET Transistor****STD11NM50N****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL       | PARAMETER                      | CONDITIONS                         | MIN | TYP | MAX       | UNIT             |
|--------------|--------------------------------|------------------------------------|-----|-----|-----------|------------------|
| $BV_{DSS}$   | Drain-Source Breakdown Voltage | $V_{GS}=0V; I_D=1\text{mA}$        | 500 |     |           | V                |
| $V_{GS(th)}$ | Gate Threshold Voltage         | $V_{DS}=V_{GS}; I_D=0.25\text{mA}$ | 2.0 |     | 4.0       | V                |
| $R_{DS(on)}$ | Drain-Source On-Resistance     | $V_{GS}=10V; I_D=4.5A$             |     | 400 | 470       | $\text{m}\Omega$ |
| $I_{GSS}$    | Gate-Source Leakage Current    | $V_{GS}=\pm 25V; V_{DS}=0V$        |     |     | $\pm 0.1$ | $\mu\text{A}$    |
| $I_{DSS}$    | Drain-Source Leakage Current   | $V_{DS}=500V; V_{GS}=0V$           |     |     | 1         | $\mu\text{A}$    |
| $V_{SDF}$    | Diode forward voltage          | $I_{SD}=8.5A, V_{GS}=0V$           |     |     | 1.5       | V                |

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