

## isc N-Channel MOSFET Transistor

## STD8NM50N

## FEATURES

- Drain Current  $-I_D = 5A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS} = 500V(\text{Min})$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 790m\Omega (\text{Max})$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

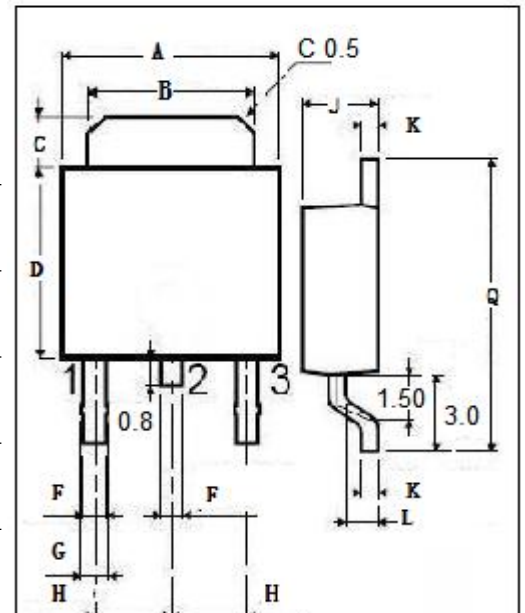
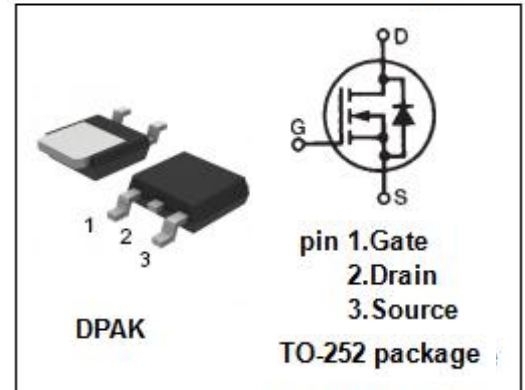
- Switching application

ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ C$ )

| SYMBOL    | PARAMETER                              | VALUE    | UNIT       |
|-----------|----------------------------------------|----------|------------|
| $V_{DSS}$ | Drain-Source Voltage                   | 500      | V          |
| $V_{GS}$  | Gate-Source Voltage-Continuous         | $\pm 25$ | V          |
| $I_D$     | Drain Current-Continuous               | 5        | A          |
| $P_D$     | Total Dissipation @ $T_C = 25^\circ C$ | 45       | W          |
| $T_J$     | Max. Operating Junction Temperature    | 150      | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                    | -55~150  | $^\circ C$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                            | MAX  | UNIT         |
|--------------|--------------------------------------|------|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 2.78 | $^\circ C/W$ |



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

**isc N-Channel MOSFET Transistor****STD8NM50N****ELECTRICAL CHARACTERISTICS****T<sub>c</sub>=25°C unless otherwise specified**

| SYMBOL               | PARAMETER                       | CONDITIONS                                                                            | MIN | MAX      | UNIT |
|----------------------|---------------------------------|---------------------------------------------------------------------------------------|-----|----------|------|
| V <sub>(BR)DSS</sub> | Drain-Source Breakdown Voltage  | V <sub>GS</sub> = 0; I <sub>D</sub> = 1mA                                             | 500 |          | V    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage          | V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> = 0.25mA                           | 2   | 4        | V    |
| R <sub>DS(on)</sub>  | Drain-Source On-Resistance      | V <sub>GS</sub> = 10V; I <sub>D</sub> = 2.5A                                          |     | 790      | mΩ   |
| I <sub>GSS</sub>     | Gate-Body Leakage Current       | V <sub>GS</sub> = ±25V; V <sub>DS</sub> = 0                                           |     | ±100     | nA   |
| I <sub>DSS</sub>     | Zero Gate Voltage Drain Current | V <sub>DS</sub> = Max rating;<br>V <sub>DS</sub> = Max rating; T <sub>j</sub> = 125°C |     | 1<br>100 | μA   |
| V <sub>SD</sub>      | Forward On-Voltage              | I <sub>S</sub> = 5A; V <sub>GS</sub> =0                                               |     | 1.5      | V    |

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