

isc N-Channel MOSFET Transistor

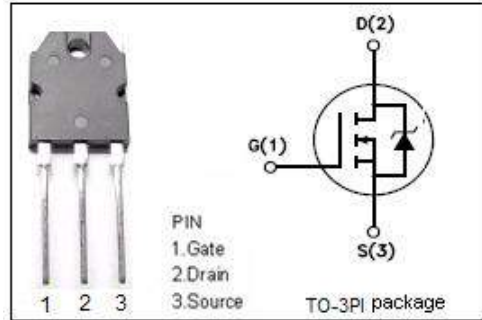
2SK1357

DESCRIPTION

- Drain Current  $-I_D = 5A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS} = 900V(\text{Min})$
- Fast Switching Speed

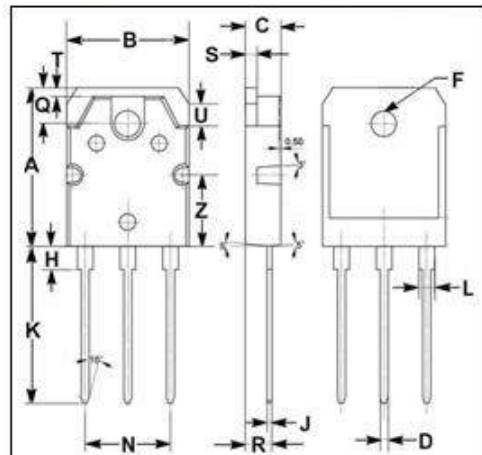
APPLICATIONS

- high voltage, high speed power switching



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

| SYMBOL    | PARAMETER                                     | VALUE    | UNIT       |
|-----------|---|----------|------------|
| $V_{DSS}$ | Drain-Source Voltage ( $V_{GS} = 0$ )         | 900      | V          |
| $V_{GS}$  | Gate-Source Voltage                           | $\pm 30$ | V          |
| $I_D$     | Drain Current-continuous @ $T_C = 25^\circ C$ | 5        | A          |
| $P_{tot}$ | Total Dissipation @ $T_C = 25^\circ C$        | 125      | W          |
| $T_j$     | Max. Operating Junction Temperature           | 150      | $^\circ C$ |
| $T_{stg}$ | Storage Temperature Range                     | -55~150  | $^\circ C$ |



| DIM | mm    |       |
|-----|-------|-------|
|     | MIN   | MAX   |
| A   | 19.90 | 20.10 |
| B   | 15.50 | 15.70 |
| C   | 4.40  | 4.60  |
| D   | 0.90  | 1.10  |
| F   | 3.20  | 3.40  |
| H   | 2.90  | 3.10  |
| J   | 0.50  | 0.70  |
| K   | 19.90 | 20.10 |
| L   | 1.90  | 2.10  |
| N   | 10.80 | 11.00 |
| Q   | 4.40  | 4.60  |
| R   | 3.30  | 3.35  |
| S   | 1.40  | 1.60  |
| T   | 1.00  | 1.20  |
| U   | 2.10  | 2.30  |
| Z   | 8.90  | 9.10  |

THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                               | MAX | UNIT         |
|---------------|---|-----|--------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case    | 1.0 | $^\circ C/W$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 50  | $^\circ C/W$ |

## isc N-Channel Mosfet Transistor

2SK1357

• ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C)

| SYMBOL               | PARAMETER                        | CONDITIONS  | MIN | TYP | MAX   | UNIT |
|----------------------|----------------------------------|---|-----|-----|-------|------|
| V <sub>(BR)DSS</sub> | Drain-Source Breakdown Voltage   | V <sub>GS</sub> =0; I <sub>D</sub> = 10mA                       | 900 |     |       | V    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage           | V <sub>DS</sub> =10 V <sub>GS</sub> ; I <sub>D</sub> =1mA       | 1.5 |     | 3.5   | V    |
| R <sub>DS(on)</sub>  | Drain-Source On-stage Resistance | V <sub>GS</sub> =10V; I <sub>D</sub> =2A                        |     | 2.5 | 2.8   | Ω    |
| I <sub>GSS</sub>     | Gate Source 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> =720V; V <sub>GS</sub> = 0                      |     |     | 300   | uA   |
| V <sub>SD</sub>      | Diode Forward Voltage            | I <sub>F</sub> =5A; V <sub>GS</sub> =0                          |     |     | 1.9   | V    |
| t <sub>r</sub>       | Rise time                        | V <sub>GS</sub> =10V; I <sub>D</sub> =2A; R <sub>L</sub> =200 Ω |     | 18  | 35    | ns   |
| t <sub>on</sub>      | Turn-on time                     |   |     | 30  | 60    | ns   |
| t <sub>f</sub>       | Fall time                        |   |     | 12  | 25    | ns   |
| t <sub>off</sub>     | Turn-off time                    |   |     | 70  | 140   | ns   |