

## isc N-Channel MOSFET Transistor

2SK4124

## FEATURES

- Drain Current :  $I_D = 20A @ T_C = 25^\circ C$
- Drain Source Voltage  
:  $V_{DSS} = 500V(\text{Min})$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 0.43 \Omega (\text{Max}) @ V_{GS} = 10V$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## DESCRIPTION

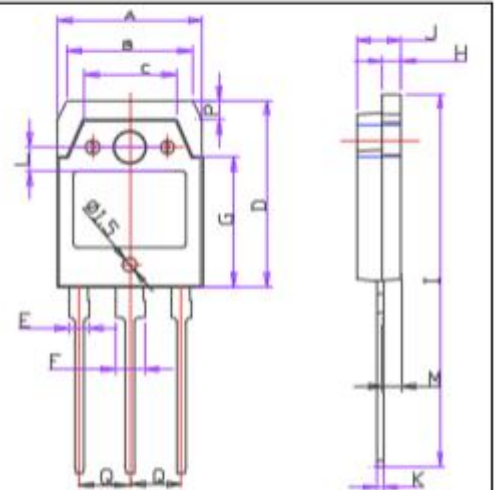
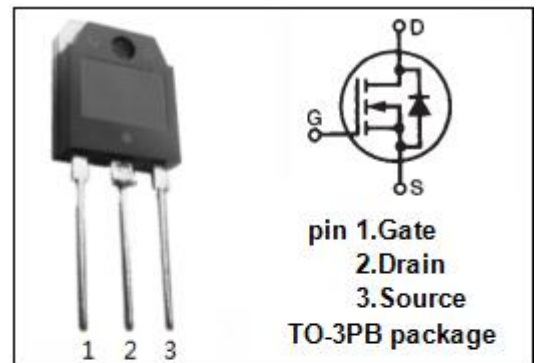
- motor drive, DC-DC converter, power switch and solenoid drive.

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         | $\pm 30$ | V          |
| $I_D$     | Drain Current-Continuous               | 20       | A          |
| $I_{DM}$  | Drain Current-Single Pluse             | 60       | A          |
| $P_D$     | Total Dissipation @ $T_C = 25^\circ C$ | 170      | W          |
| $T_J$     | Max. Operating Junction Temperature    | -55~150  | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                    | -55~150  | $^\circ C$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                            | MAX  | UNIT         |
|--------------|--------------------------------------|------|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 0.74 | $^\circ C/W$ |



| DIM | mm    |       |
|-----|-------|-------|
|     | MIN   | MAX   |
| A   | 15.45 | 15.75 |
| B   | 13.45 | 13.75 |
| C   | 9.45  | 9.75  |
| D   | 19.80 | 20.20 |
| E   | 2.00  | 2.20  |
| F   | 2.95  | 3.25  |
| G   | 13.70 | 14.10 |
| H   | 1.40  | 1.60  |
| I   | 18.45 | 18.75 |
| J   | 4.70  | 4.90  |
| K   | 0.50  | 0.70  |
| L   | 2.20  | 2.60  |
| M   | 1.20  | 1.60  |
| P   | 1.80  | 2.20  |
| Q   | 5.25  | 5.65  |

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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL        | PARAMETER                       | CONDITIONS                               | MIN | MAX       | UNIT          |
|---------------|---------------------------------|--|-----|-----------|---------------|
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage  | $V_{GS}=0$ ; $I_D=10\text{mA}$           | 500 | --        | V             |
| $V_{GS(th)}$  | Gate Threshold Voltage          | $V_{DS}=10\text{V}$ ; $I_D=1.0\text{mA}$ | 3.0 | 5.0       | V             |
| $R_{DS(on)}$  | Drain-Source On-Resistance      | $V_{GS}=10\text{V}$ ; $I_D=8.0\text{A}$  | --  | 0.43      | $\Omega$      |
| $I_{GSS}$     | Gate-Body Leakage Current       | $V_{GS}=\pm 30\text{V}$ ; $V_{DS}=0$     | --  | $\pm 0.1$ | $\mu\text{A}$ |
| $I_{DSS}$     | Zero Gate Voltage Drain Current | $V_{DS}=400\text{V}$ ; $V_{GS}=0$        | --  | 100       | $\mu\text{A}$ |
| $V_{SD}$      | Forward On-Voltage              | $I_S=20\text{A}$ ; $V_{GS}=0$            | --  | 1.3       | V             |

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