

**isc N-Channel MOSFET Transistor**
**2SK3594-01**
**FEATURES**

- Drain Current :  $I_D = 45A @ T_C = 25^\circ C$
- Drain Source Voltage  
:  $V_{DSS} = 200V(\text{Min})$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 66m\Omega (\text{Max}) @ V_{GS} = 10V$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**DESCRIPTION**

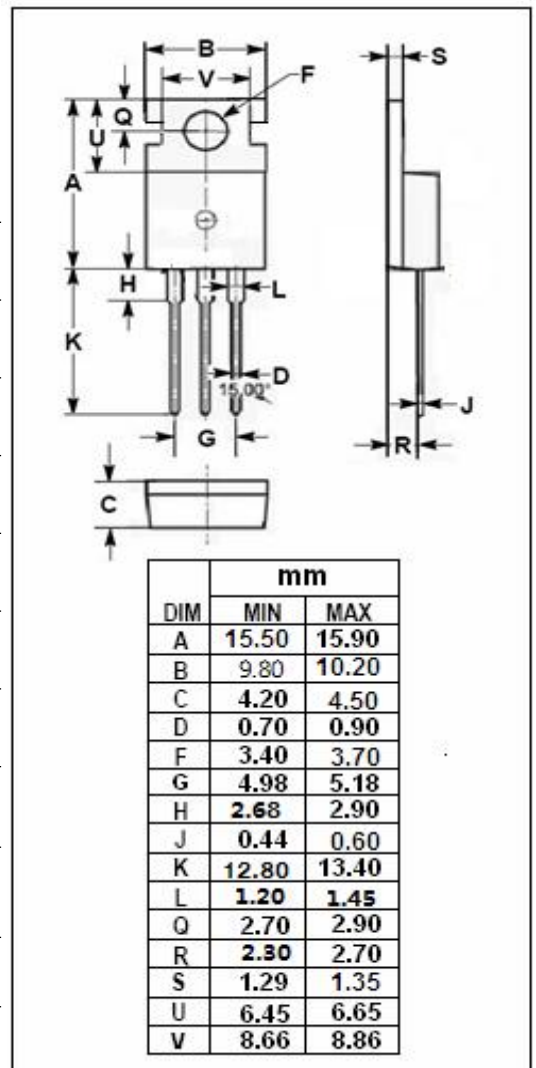
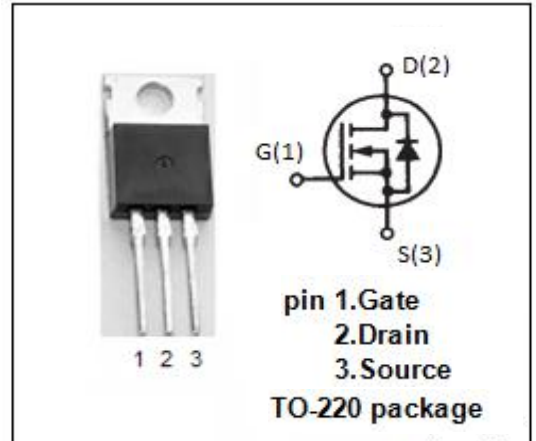
- motor drive, DC-DC converter, power switch and solenoid drive.

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

| SYMBOL    | PARAMETER                              | VALUE    | UNIT       |
|-----------|--|----------|------------|
| $V_{DSS}$ | Drain-Source Voltage                   | 200      | V          |
| $V_{GS}$  | Gate-Source Voltage-Continuous         | $\pm 30$ | V          |
| $I_D$     | Drain Current-Continuous               | 45       | A          |
| $I_{DM}$  | Drain Current-Single Pulse             | 180      | A          |
| $P_D$     | Total Dissipation @ $T_C = 25^\circ C$ | 270      | 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 | 0.46 | $^\circ C/W$ |



## isc N-Channel MOSFET Transistor

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## 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> = 0.25mA   | 200 | --   | V    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage          | V <sub>DS</sub> = 10V; I <sub>D</sub> = 0.25mA | 3   | 5    | V    |
| R <sub>DS(on)</sub>  | Drain-Source On-Resistance      | V <sub>GS</sub> = 10V; I <sub>D</sub> = 15A    | --  | 66   | mΩ   |
| I <sub>GSS</sub>     | Gate-Body Leakage Current       | V <sub>GS</sub> = ±30V; V <sub>DS</sub> = 0    | --  | ±0.1 | uA   |
| I <sub>DSS</sub>     | Zero Gate Voltage Drain Current | V <sub>DS</sub> = 200V; V <sub>GS</sub> = 0    | --  | 25   | uA   |
| V <sub>SD</sub>      | Forward On-Voltage              | I <sub>S</sub> = 30A; V <sub>GS</sub> = 0      | --  | 1.65 | V    |

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