

isc N-Channel MOSFET Transistor

2SK3778-01

FEATURES

- Drain Current : $I_D = 59A @ T_C = 25^\circ C$
- Drain Source Voltage
: $V_{DSS} = 250V(\text{Min})$
- Static Drain-Source On-Resistance
: $R_{DS(on)} = 53m\Omega (\text{Max}) @ V_{GS} = 10V$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

DESCRIPTION

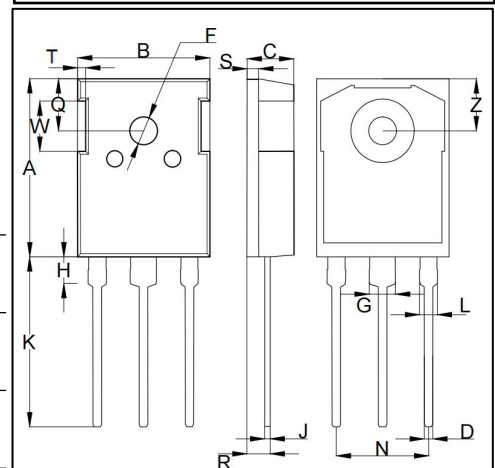
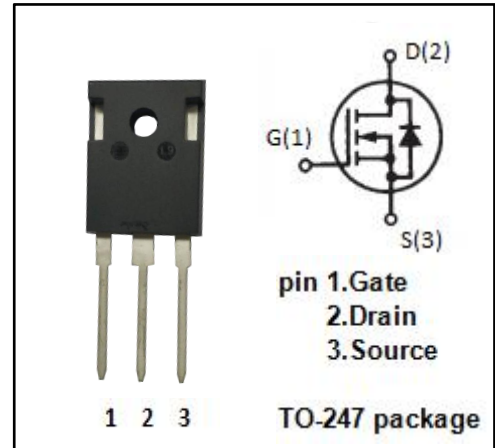
- motor drive, DC-DC converter, power switch and solenoid drive.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|----------|------------|
| V_{DSS} | Drain-Source Voltage | 250 | V |
| V_{GS} | Gate-Source Voltage-Continuous | ± 30 | V |
| I_D | Drain Current-Continuous | 59 | A |
| I_{DM} | Drain Current-Single Pluse | 236 | A |
| P_D | Total Dissipation @ $T_C = 25^\circ C$ | 410 | 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 | 0.305 | $^\circ C/W$ |



| DIM | mm | |
|-----|-------|-------|
| | MIN | MAX |
| A | 19.80 | 21.50 |
| B | 15.40 | 15.90 |
| C | 4.70 | 5.30 |
| D | 0.90 | 1.26 |
| F | 3.50 | 3.90 |
| G | 2.70 | 3.30 |
| H | 3.90 | 4.10 |
| J | 0.500 | 0.700 |
| K | 19.50 | 20.50 |
| L | 1.90 | 2.20 |
| N | 10.80 | 11.00 |
| Q | 6.00 | 6.30 |
| R | 2.90 | 3.30 |
| S | 1.80 | 2.20 |
| T | 2.15 | 2.35 |
| W | 4.90 | 5.10 |
| Z | 6.00 | 6.30 |

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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 | $V_{GS}=0$; $I_D=0.25\text{mA}$ | 250 | -- | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=10\text{V}$; $I_D=0.25\text{mA}$ | 3.0 | 5.0 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}=10\text{V}$; $I_D=29.5\text{A}$ | -- | 53 | $\text{m}\Omega$ |
| I_{GSS} | Gate-Body Leakage Current | $V_{GS}=\pm 30\text{V}$; $V_{DS}=0$ | -- | ± 0.1 | μA |
| I_{DSS} | Zero Gate Voltage Drain Current | $V_{DS}=250\text{V}$; $V_{GS}=0$ | -- | 25 | μA |
| V_{SD} | Forward On-Voltage | $I_S=59\text{A}$; $V_{GS}=0$ | -- | 1.5 | V |

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