

## isc N-Channel MOSFET Transistor

2SK3148

## • FEATURES

- With TO-220F packaging
- Low switching loss
- Ultra low gate charge
- Easy to use
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operationz

## • APPLICATIONS

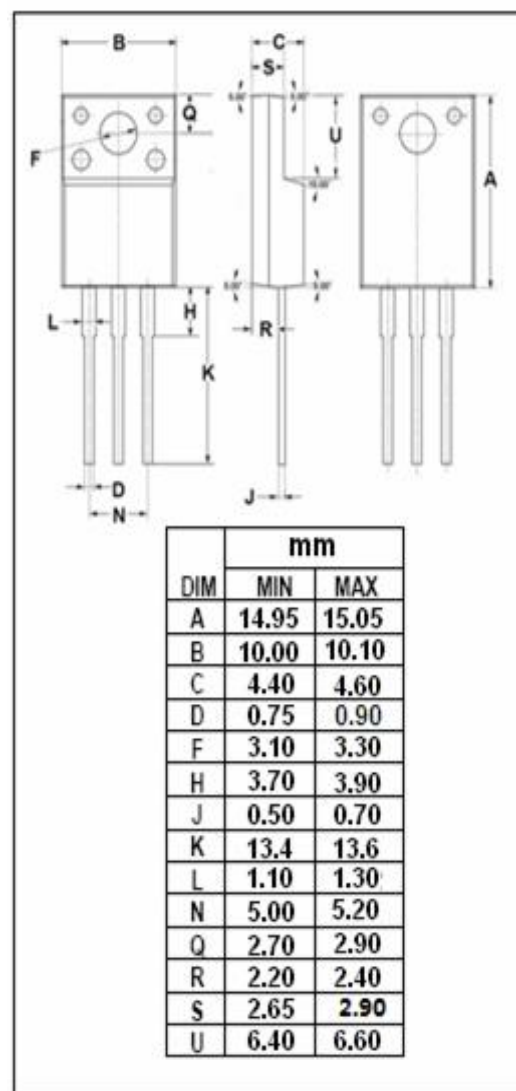
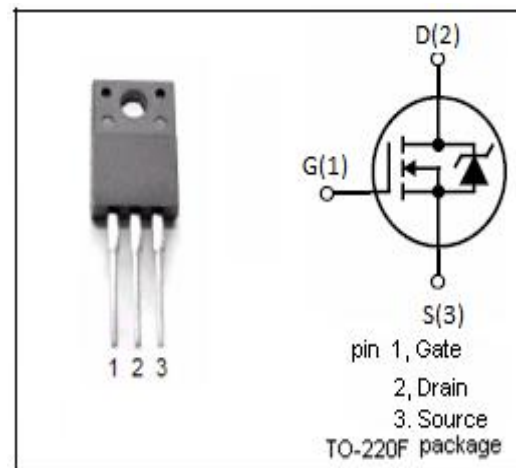
- Switching applications
- AC-DC converters
- LED lighting
- Uninterruptible power supply

• ABSOLUTE MAXIMUM RATINGS( $T_a=25^{\circ}\text{C}$ )

| SYMBOL    | PARAMETER                      | VALUE    | UNIT               |
|-----------|--------------------------------|----------|--------------------|
| $V_{DS}$  | Drain-Source Voltage           | 100      | V                  |
| $V_{GS}$  | Gate-Source Voltage            | $\pm 20$ | V                  |
| $I_D$     | Drain Current-Continuous       | 20       | A                  |
| $I_{DM}$  | Drain Current-Single Pulsed    | 60       | A                  |
| $P_D$     | Total Dissipation              | 30       | W                  |
| $T_j$     | Operating Junction Temperature | -55~150  | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature            | -55~150  | $^{\circ}\text{C}$ |

## • THERMAL CHARACTERISTICS

| SYMBOL         | PARAMETER                             | MAX  | UNIT                 |
|----------------|---------------------------------------|------|----------------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance    | 0.59 | $^{\circ}\text{C/W}$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 62.5 | $^{\circ}\text{C/W}$ |



**isc N-Channel MOSFET Transistor****2SK3148****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

| SYMBOL              | PARAMETER                      | CONDITIONS                                   | MIN | TYP | MAX | UNIT |
|---------------------|--------------------------------|----------------------------------------------|-----|-----|-----|------|
| BV <sub>DSS</sub>   | Drain-Source Breakdown Voltage | V <sub>GS</sub> =0V; I <sub>D</sub> =10mA    | 100 |     |     | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> =±20V; I <sub>D</sub> =1mA   | 1.0 |     | 2.5 | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> =10A   |     | 45  | 60  | mΩ   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> = ±16V; V <sub>DS</sub> = 0V |     |     | ±10 | μA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> = 100V; V <sub>GS</sub> = 0V |     |     | 10  | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>SD</sub> =20A, V <sub>GS</sub> = 0V   |     | 0.9 |     | V    |

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