

## isc N-Channel MOSFET Transistor

2SK1022

## DESCRIPTION

- Drain Current  $-I_D=2.5A@T_C=25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS}=900V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

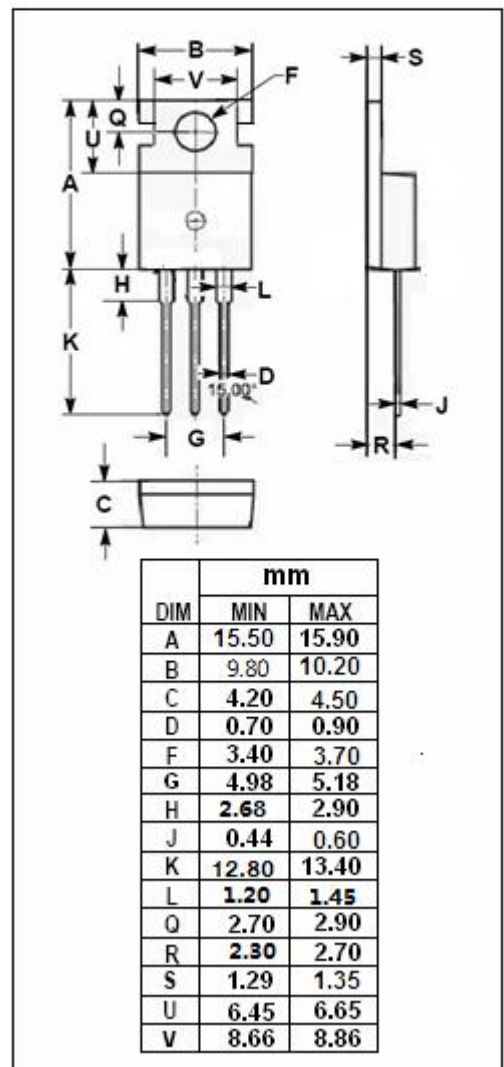
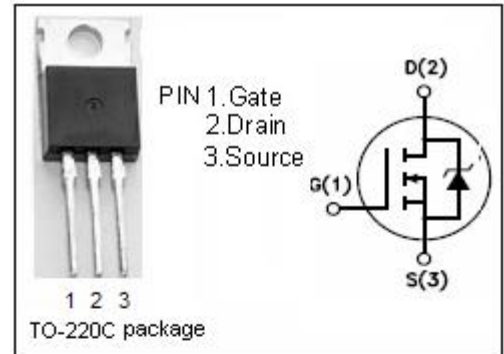
- high voltage, high speed power switching

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@ $T_C=25^\circ C$ | 2.5      | A          |
| $P_{tot}$ | Total Dissipation@ $T_C=25^\circ C$        | 60       | W          |
| $T_j$     | Max. Operating Junction Temperature        | 150      | $^\circ C$ |
| $T_{stg}$ | Storage Temperature Range                  | -55~150  | $^\circ C$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                               | MAX  | UNIT         |
|--------------|-----------------------------------------|------|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case    | 2.08 | $^\circ C/W$ |
| $R_{th j-a}$ | Thermal Resistance, Junction to Ambient | 75   | $^\circ C/W$ |



**isc N-Channel Mosfet Transistor****2SK1022****• 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> = 1mA                           | 800 |      |      | V    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage           | V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =1mA             | 2.5 | 3.5  | 5.0  | V    |
| R <sub>DS(on)</sub>  | Drain-Source On-stage Resistance | V <sub>GS</sub> =10V; I <sub>D</sub> =1.5A                          |     |      | 7.3  | Ω    |
| I <sub>GSS</sub>     | Gate Source Leakage Current      | V <sub>GS</sub> = ±30V; V <sub>DS</sub> = 0                         |     |      | ±100 | nA   |
| I <sub>DSS</sub>     | Zero Gate Voltage Drain Current  | V <sub>DS</sub> =900V; V <sub>GS</sub> = 0                          |     |      | 500  | uA   |
| V <sub>SD</sub>      | Forward On-Voltage               | I <sub>S</sub> =2.5A; V <sub>GS</sub> =0                            |     | 1.0  | 1.50 | V    |
| t <sub>r</sub>       | Rise time                        | V <sub>GS</sub> =10V; I <sub>D</sub> =2.5A;<br>R <sub>L</sub> =25 Ω |     | 60   | 90   | ns   |
| t <sub>on</sub>      | Turn-on time                     |                                                                     |     | 85   | 128  | ns   |
| t <sub>f</sub>       | Fall time                        |                                                                     |     | 60   | 90   | ns   |
| t <sub>off</sub>     | Turn-off time                    |                                                                     |     | 160  | 240  | ns   |

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