

## isc N-Channel MOSFET Transistor

R6020KNX

## FEATURES

- Drain Current  $-I_D = 20A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DS} = 600V (Min)$
- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 196m\Omega (Max)$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## DESCRIPTION

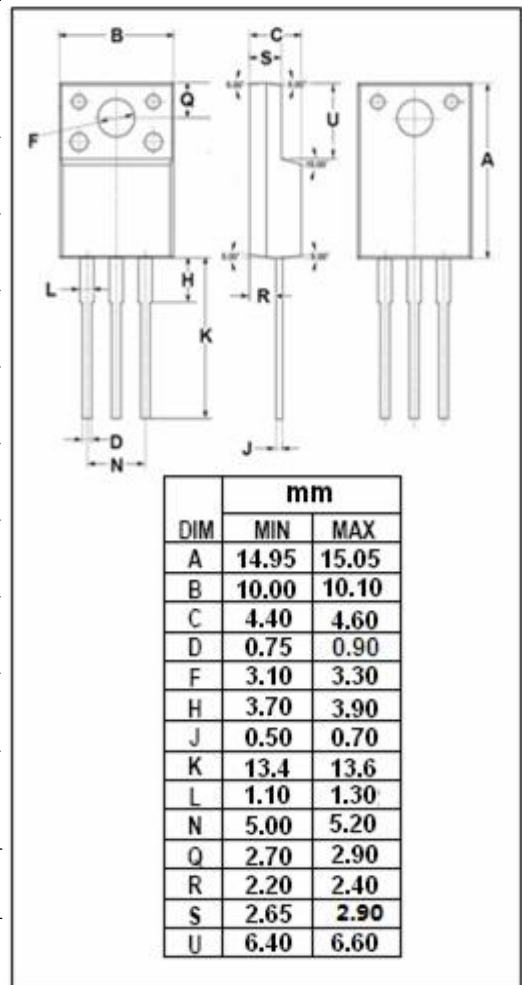
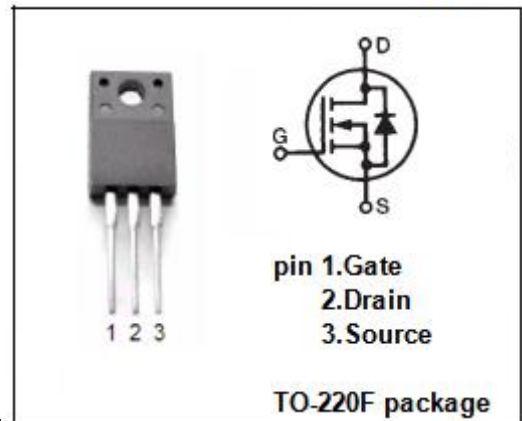
- Designed for use in switch mode power supplies and general purpose applications.

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

| SYMBOL    | PARAMETER                              | VALUE    | UNIT       |
|-----------|----------------------------------------|----------|------------|
| $V_{DS}$  | Drain-Source Voltage                   | 600      | V          |
| $V_{GS}$  | Gate-Source Voltage-Continuous         | $\pm 20$ | V          |
| $I_D$     | Drain Current-Continuous               | 20       | A          |
| $I_{DM}$  | Drain Current-Single Pluse             | 60       | A          |
| $P_D$     | Total Dissipation @ $T_C = 25^\circ C$ | 68       | W          |
| $T_J$     | Max. Operating Junction Temperature    | 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 | 1.8 | $^\circ C/W$ |



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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  | $V_{GS}=0$ ; $I_D=1\text{mA}$                                                                  | 600 |             | V                |
| $V_{GS(th)}$  | Gate Threshold Voltage          | $V_{DS}=V_{GS}$ ; $I_D=1\text{mA}$                                                             | 3   | 5           | V                |
| $R_{DS(on)}$  | Drain-Source On-Resistance      | $V_{GS}=10\text{V}$ ; $I_D=9.5\text{A}$                                                        |     | 196         | $\text{m}\Omega$ |
| $I_{GSS}$     | Gate-Body Leakage Current       | $V_{GS}=\pm 20\text{V}$ ; $V_{DS}=0$                                                           |     | $\pm 100$   | nA               |
| $I_{DSS}$     | Zero Gate Voltage Drain Current | $V_{DS}=600\text{V}$ ; $V_{GS}=0$<br>$V_{DS}=600\text{V}$ ; $V_{GS}=0@T_J=125^{\circ}\text{C}$ |     | 100<br>1000 | $\mu\text{A}$    |
| $V_{SD}$      | Forward On-Voltage              | $I_S=20\text{A}$ ; $V_{GS}=0$                                                                  |     | 1.5         | V                |

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