

**isc N-Channel MOSFET Transistor****TK20A60W, ITK20A60W****• FEATURES**

- Low drain-source on-resistance:  $R_{DS(ON)} = 0.155\Omega$  (typ.)
- Easy to control Gate switching
- Enhancement mode:  $V_{th} = 2.7$  to  $3.7V$  ( $V_{DS} = 10V$ ,  $I_D = 1mA$ )
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**• DESCRIPTION**

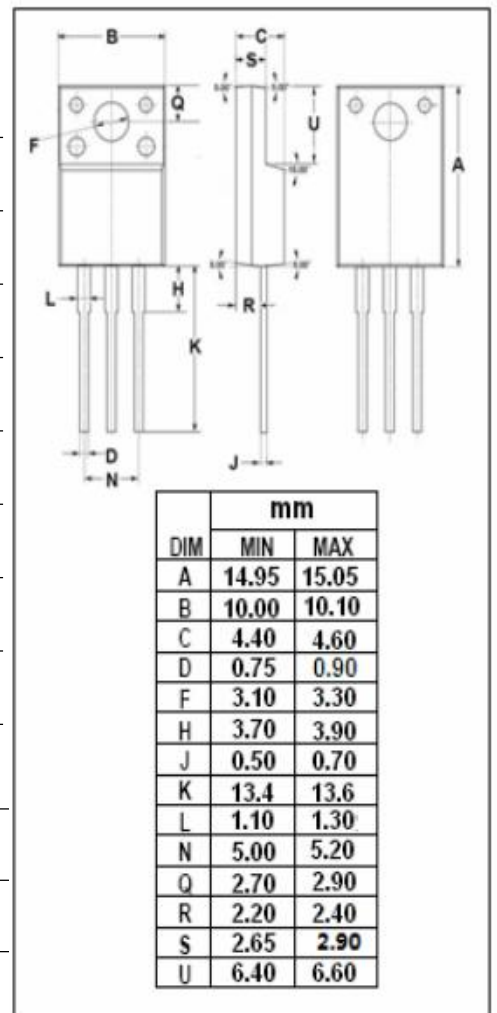
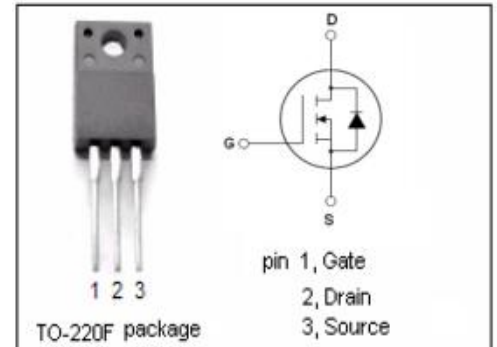
- Switching Voltage Regulators

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

| SYMBOL    | PARAMETER                              | VALUE    | UNIT       |
|-----------|----------------------------------------|----------|------------|
| $V_{DSS}$ | Drain-Source Voltage                   | 600      | V          |
| $V_{GS}$  | Gate-Source Voltage                    | $\pm 30$ | V          |
| $I_D$     | Drain Current-Continuous               | 20       | A          |
| $I_{DM}$  | Drain Current-Single Pulsed            | 80       | A          |
| $P_D$     | Total Dissipation @ $T_c = 25^\circ C$ | 45       | W          |
| $T_j$     | Max. Operating Junction Temperature    | 150      | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                    | -55~150  | $^\circ C$ |

**• THERMAL CHARACTERISTICS**

| SYMBOL         | PARAMETER                             | MAX  | UNIT         |
|----------------|---------------------------------------|------|--------------|
| $R_{th(ch-c)}$ | Channel-to-case thermal resistance    | 2.78 | $^\circ C/W$ |
| $R_{th(ch-a)}$ | Channel-to-ambient thermal resistance | 62.5 | $^\circ C/W$ |



**isc N-Channel MOSFET Transistor****TK20A60W, ITK20A60W****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   | 600 |     |     | V    |
| V <sub>GS(th)</sub> | Gate Threshold Voltage         | V <sub>DS</sub> = 10V; I <sub>D</sub> =1mA   | 2.7 |     | 3.7 | V    |
| R <sub>DS(on)</sub> | Drain-Source On-Resistance     | V <sub>GS</sub> = 10V; I <sub>D</sub> =10A   |     |     | 155 | mΩ   |
| I <sub>GSS</sub>    | Gate-Source Leakage Current    | V <sub>GS</sub> = ±30V; V <sub>DS</sub> = 0V |     |     | ±1  | μA   |
| I <sub>DSS</sub>    | Drain-Source Leakage Current   | V <sub>DS</sub> = 600V; V <sub>GS</sub> = 0V |     |     | 10  | μA   |
| V <sub>SDF</sub>    | Diode forward voltage          | I <sub>DR</sub> =20 A, V <sub>GS</sub> = 0 V |     |     | 1.7 | V    |

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