

iscN-Channel MOSFET Transistor
TK18A30D, ITK18A30D
• FEATURES

- Low drain-source on-resistance:
 $R_{DS(ON)} = 0.1\Omega$ (typ.)
- Enhancement mode:
 $V_{th} = 1.5$ to $3.5V$ ($V_{DS} = 10V$, $I_D = 1.0mA$)
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

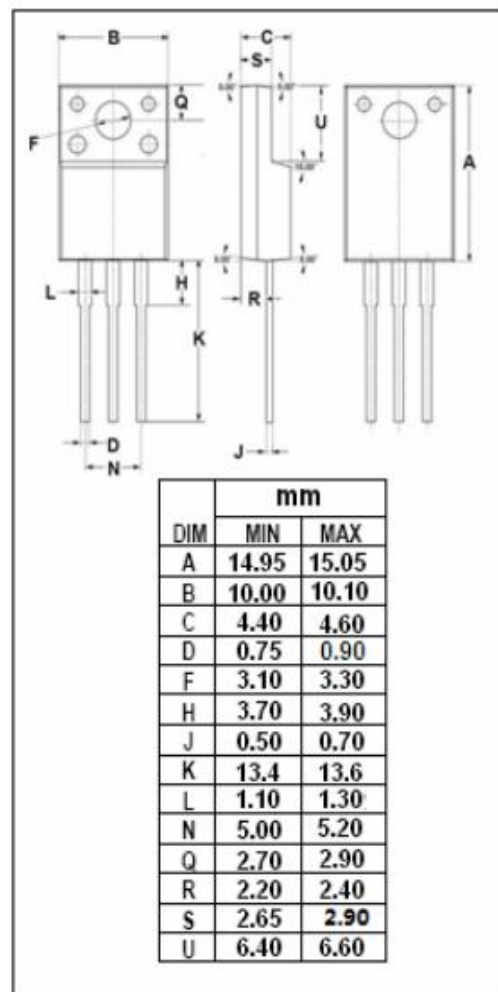
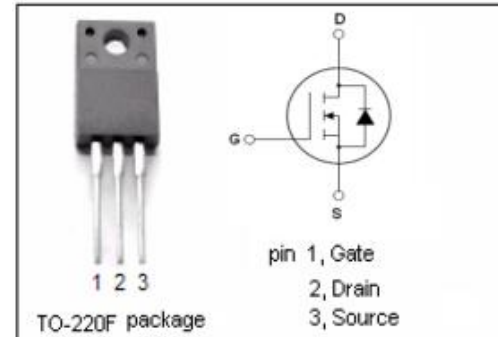
- Switching Voltage Regulators

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|----------|------------|
| V_{DSS} | Drain-Source Voltage | 300 | V |
| V_{GS} | Gate-Source Voltage | ± 20 | V |
| I_D | Drain Current-Continuous | 18 | A |
| I_{DM} | Drain Current-Single Pulsed | 72 | 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 | $^\circ C/W$ |



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ELECTRICAL CHARACTERISTICS
 $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------|--------------------------------|-----------------------------|-----|-----|---------|-----------|
| BV_{DSS} | Drain-Source Breakdown Voltage | $V_{GS}=0V; I_D=10mA$ | 300 | | | V |
| $V_{GS(th)}$ | Gate Threshold Voltage | $V_{DS}=10V; I_D=1.0mA$ | 1.5 | | 3.5 | V |
| $R_{DS(on)}$ | Drain-Source On-Resistance | $V_{GS}=10V; I_D=9A$ | | 100 | 139 | $m\Omega$ |
| I_{GSS} | Gate-Source Leakage Current | $V_{GS}=\pm 20V; V_{DS}=0V$ | | | ± 1 | μA |
| I_{DSS} | Drain-Source Leakage Current | $V_{DS}=300V; V_{GS}=0V$ | | | 10 | μA |
| V_{SDF} | Diode forward voltage | $I_{DR}=18A, V_{GS}=0V$ | | | 1.7 | V |

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