

isc N-Channel MOSFET Transistor
2SK3742, I2SK3742
• FEATURES

- Low drain-source on-resistance:
 $R_{DS(on)} \leq 2.5\Omega$.
- Enhancement mode:
 $V_{th} = 4.0$ to $5.0V$ ($V_{DS} = 10V$, $I_D = 1.0mA$)
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRIPTION

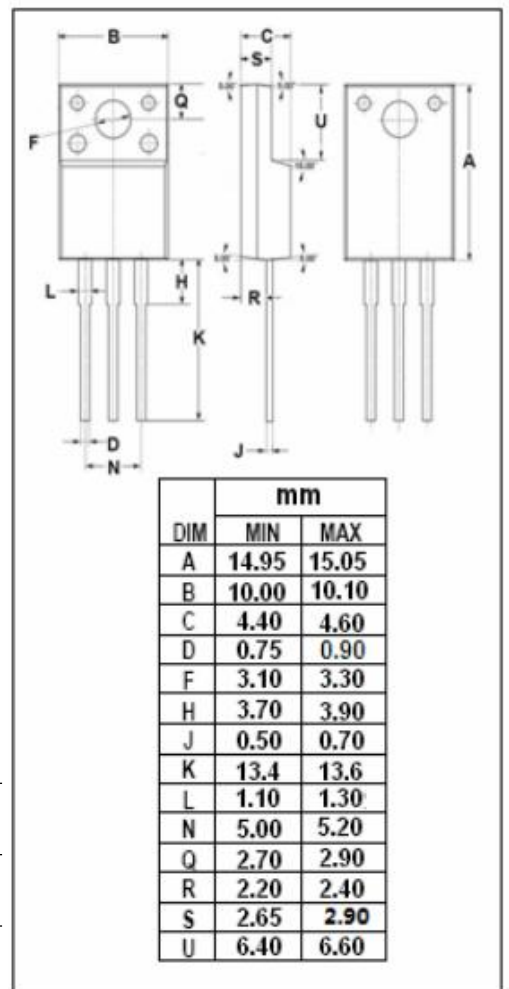
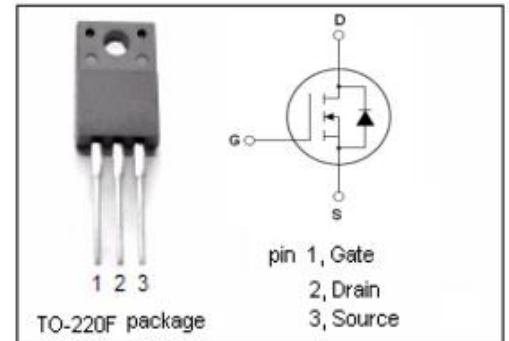
- Switching Voltage Regulators

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|----------|------------|
| V_{DS} | Drain-Source Voltage | 900 | V |
| V_{GS} | Gate-Source Voltage | ± 30 | V |
| I_D | Drain Current-Continuous | 5 | A |
| I_{DM} | Drain Current-Single Pulsed | 15 | 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°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|---------------------|--------------------------------|---|-----|-----|------|------|
| BV _{DSS} | Drain-Source Breakdown Voltage | V _{GS} =0V; I _D = 10mA | 900 | | | V |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} = 10V; I _D =1.0mA | 4.0 | | 5.0 | V |
| R _{DS(on)} | Drain-Source On-Resistance | V _{GS} =10V; I _D =3A | | | 2500 | mΩ |
| I _{GSS} | Gate-Source Leakage Current | V _{GS} = ± 30V; V _{DS} = 0V | | | ± 10 | μA |
| I _{DSS} | Drain-Source Leakage Current | V _{DS} =720V; V _{GS} = 0V | | | 100 | μA |
| V _{SDF} | Diode forward voltage | I _{DR} =5A, V _{GS} = 0 V | | | 1.7 | V |

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