

isc N-Channel MOSFET Transistor

2SK1442

DESCRIPTION

- Drain Current $-I_D=12A@ T_C=25^\circ C$
- Drain Source Voltage-
: $V_{DSS}= 450V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

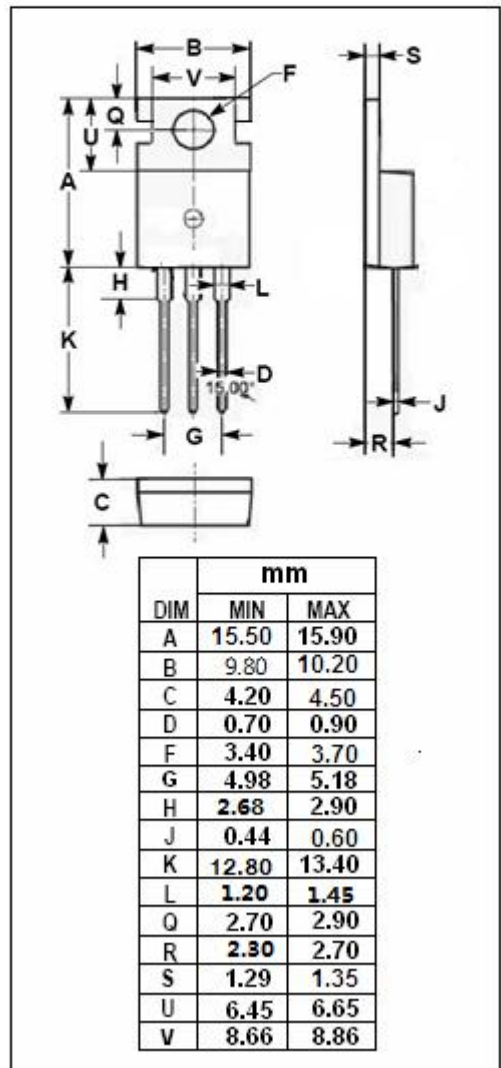
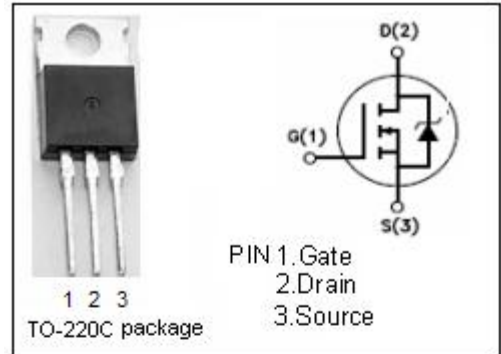
- Designed for high voltage, high speed power switching

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|----------|------------|
| V_{DSS} | Drain-Source Voltage ($V_{GS}=0$) | 450 | V |
| V_{GS} | Gate-Source Voltage | ± 30 | V |
| I_D | Drain Current-continuous@ $T_C=25^\circ C$ | 12 | A |
| P_{tot} | Total Dissipation@ $T_C=25^\circ C$ | 70 | 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 | 1.75 | $^\circ C/W$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 70 | $^\circ C/W$ |



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• ELECTRICAL CHARACTERISTICS (T_c=25°C)

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|----------------------|----------------------------------|--|-----|------|-------|------|
| V _{(BR)DSS} | Drain-Source Breakdown Voltage | V _{GS} =0; I _D = 10mA | 450 | | | V |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} =10 V _{GS} ; I _D =1mA | 2.0 | | 3.0 | V |
| R _{DS(on)} | Drain-Source On-stage Resistance | V _{GS} =10V; I _D =6A | | 0.47 | 0.60 | Ω |
| I _{GSS} | Gate Source Leakage Current | V _{GS} = ±30V; V _{DS} = 0 | | | ± 100 | nA |
| I _{DSS} | Zero Gate Voltage Drain Current | V _{DS} =450V; V _{GS} = 0 | | | 1 | mA |
| V _{SD} | Diode Forward Voltage | I _F =12A; V _{GS} =0 | | | 1.8 | V |
| t _r | Rise time | V _{GS} =10V; I _D =6A; R _L =50 Ω | | 60 | | ns |
| t _{on} | Turn-on time | | | 85 | | ns |
| t _f | Fall time | | | 80 | | ns |
| t _{off} | Turn-off time | | | 205 | | ns |

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