

isc N-Channel MOSFET Transistor
BUK455-100A/B
DESCRIPTION

- Drain Source Voltage-
: $V_{DSS}=100V(\text{Min})$
- LOW $R_{DS(\text{ON})}$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

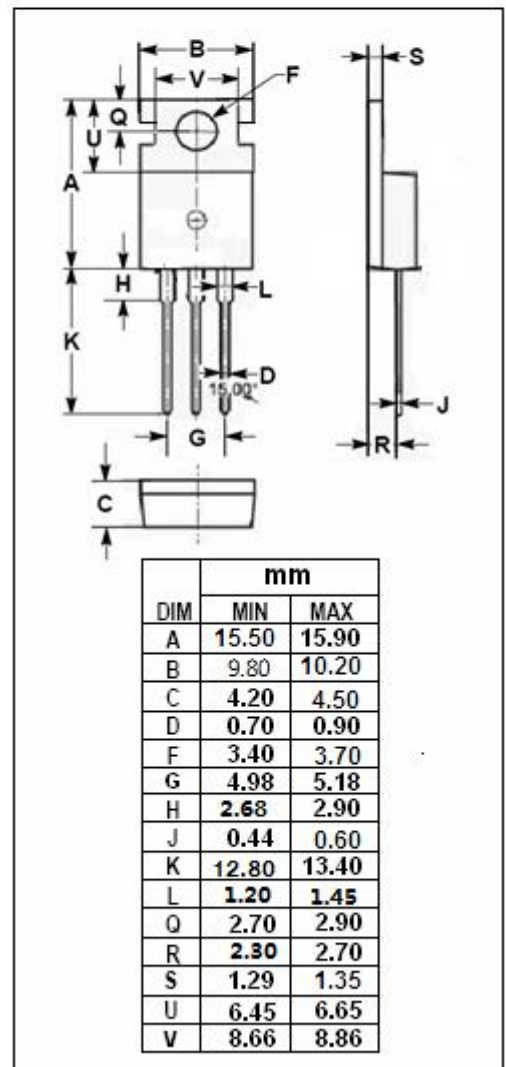
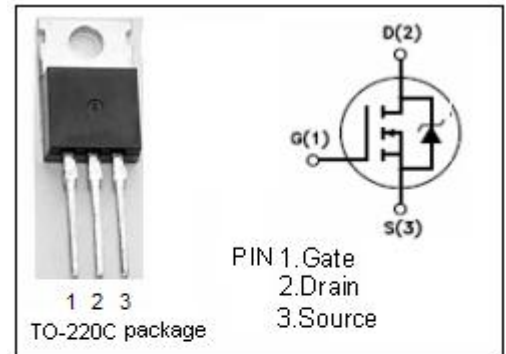
- Designed for Switched Mode Power Supplies (SMPS), motor control, welding, and in general purpose switching resistance application

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|-------------|------------------|
| V_{DSS} | Drain-Source Voltage ($V_{GS}=0$) | 100 | V |
| V_{GS} | Gate-Source Voltage | ± 30 | V |
| I_D | Drain Current-continuous @ $TC=25^\circ\text{C}$ | BUK455-100A | 26 |
| | | BUK455-100B | 23 |
| P_{tot} | Total Dissipation @ $TC=25^\circ\text{C}$ | 125 | W |
| T_j | Max. Operating Junction Temperature | 175 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | 175 | $^\circ\text{C}$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|---|-----|---------------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 1.2 | $^\circ\text{C}/\text{W}$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 60 | $^\circ\text{C}/\text{W}$ |



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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 = 0.25mA | 100 | | | V |
| V _{GS(th)} | Gate Threshold Voltage | V _{DS} =V _{GS} ; I _D =1mA | 2.1 | | 4.0 | V |
| R _{DS(on)} | Drain-Source On-stage Resistance | V _{GS} =10V; I _D =13A | BUK455-100A | | 0.08 | Ω |
| | | | BUK455-100B | | 0.1 | Ω |
| I _{GSS} | Gate Source Leakage Current | V _{GS} = ±30V; V _{DS} = 0 | | | ±100 | nA |
| I _{DSS} | Zero Gate Voltage Drain Current | V _{DS} =100V; V _{GS} = 0 | | | 10 | uA |
| V _{SD} | Diode Forward Voltage | I _F =26A; V _{GS} =0 | | | 1.7 | V |
| G _{fs} | Forward Transconductance | V _{DS} = 25V; I _D = 13A | 7.0 | | | S |
| t _r | Rise time | V _{GS} =10V; I _D =3A; R _{GS} =50 Ω | | 25 | 40 | ns |
| t _{on} | Turn-on time | | | 15 | 30 | ns |
| t _f | Fall time | | | 50 | 80 | ns |
| t _{off} | Turn-off time | | | 100 | 160 | ns |

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