

## isc N-Channel Mosfet Transistor

BUZ36

## • FEATURES

- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 0.12 \Omega$  (Max)
- SOA is Power Dissipation Limited
- High speed switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • DESCRIPTION

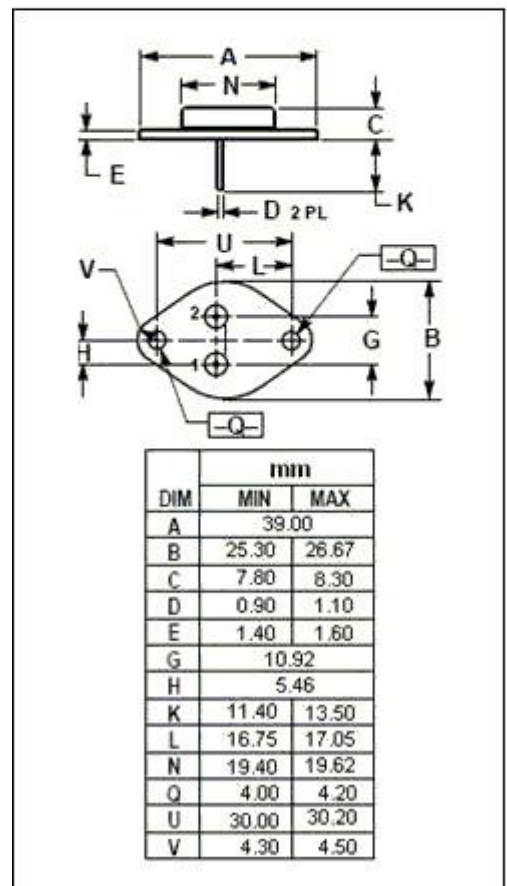
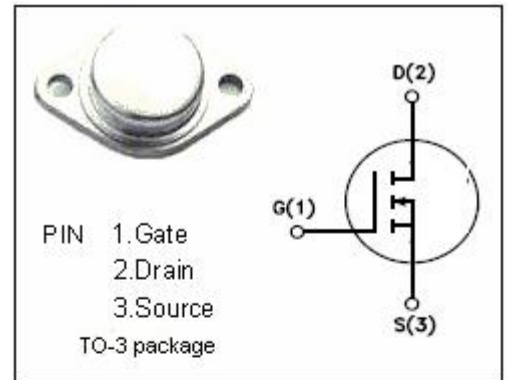
Designed for applications such as switching regulators, switching converters, motor drivers, relay drivers and drivers for high power bipolar switching transistors requiring high speed and low gate drive power.

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

| SYMBOL    | PARAMETER                                       | VALUE    | UNIT             |
|-----------|---|----------|------------------|
| $V_{DSS}$ | Drain-Source Voltage ( $V_{GS}=0$ )             | 200      | V                |
| $V_{GS}$  | Gate-Source Voltage                             | $\pm 20$ | V                |
| $I_D$     | Drain Current-continuous@ $TC=35^\circ\text{C}$ | 22       | A                |
| $I_{DM}$  | Drain Current-Single Pulsed                     | 85       | A                |
| $P_{tot}$ | Total Dissipation@ $TC=25^\circ\text{C}$        | 125      | W                |
| $T_j$     | Max. Operating Junction Temperature             | 150      | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                       | -55~150  | $^\circ\text{C}$ |

## THERMAL CHARACTERISTICS

| SYMBOL       | PARAMETER                               | MAX | UNIT               |
|--------------|---|-----|--------------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case    | 1.0 | $^\circ\text{C/W}$ |
| $R_{th j-a}$ | Thermal Resistance, Junction to Ambient | 35  | $^\circ\text{C/W}$ |



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## ELECTRICAL CHARACTERISTICS

T<sub>C</sub>=25°C unless otherwise specified

| SYMBOL               | PARAMETER                       | CONDITIONS   | MIN | TYPE | MAX  | UNIT |
|----------------------|---------------------------------|--|-----|------|------|------|
| V <sub>(BR)DSS</sub> | Drain-Source Breakdown Voltage  | V <sub>GS</sub> = 0; I <sub>D</sub> =0.25mA  | 200 |      |      | V    |
| V <sub>GS(th)</sub>  | Gate Threshold Voltage          | V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =1mA  | 2.1 |      | 4.0  | V    |
| V <sub>SD</sub>      | Diode Forward On-voltage        | I <sub>S</sub> = 44A; V <sub>GS</sub> = 0  |     |      | 1.7  | V    |
| R <sub>DS(on)</sub>  | Drain-Source On-Resistance      | V <sub>GS</sub> = 10V; I <sub>D</sub> = 11A  |     |      | 0.12 | Ω    |
| I <sub>GSS</sub>     | Gate-Body Leakage Current       | V <sub>GS</sub> = ±20V; V <sub>DS</sub> = 0  |     |      | ±100 | nA   |
| I <sub>DSS</sub>     | Zero Gate Voltage Drain Current | V <sub>DS</sub> =200V; V <sub>GS</sub> = 0   |     |      | 250  | μA   |
| G <sub>fs</sub>      | Forward Transconductance        | V <sub>DS</sub> = 25V; I <sub>D</sub> =11A   | 9.0 |      |      | S    |
| t <sub>d(on)</sub>   | Turn-on Delay Time              | V <sub>GS</sub> =10V;<br>I <sub>D</sub> =3A;<br>V <sub>DD</sub> =30V;<br>R <sub>GS</sub> =50 Ω |     |      | 45   | ns   |
| t <sub>r</sub>       | Rise Time                       |  |     |      | 110  |      |
| t <sub>d(off)</sub>  | Turn-off Delay Time             |  |     |      | 430  |      |
| t <sub>f</sub>       | Fall Time                       |  |     |      | 160  |      |

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