

# isc N-Channel Mosfet Transistor

# BUZ41A

## • FEATURES

- SOA is Power Dissipation Limited
- Nanosecond Switching Speeds
- Linear Transfer Characteristics
- High speed switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## • DESCRIPTION

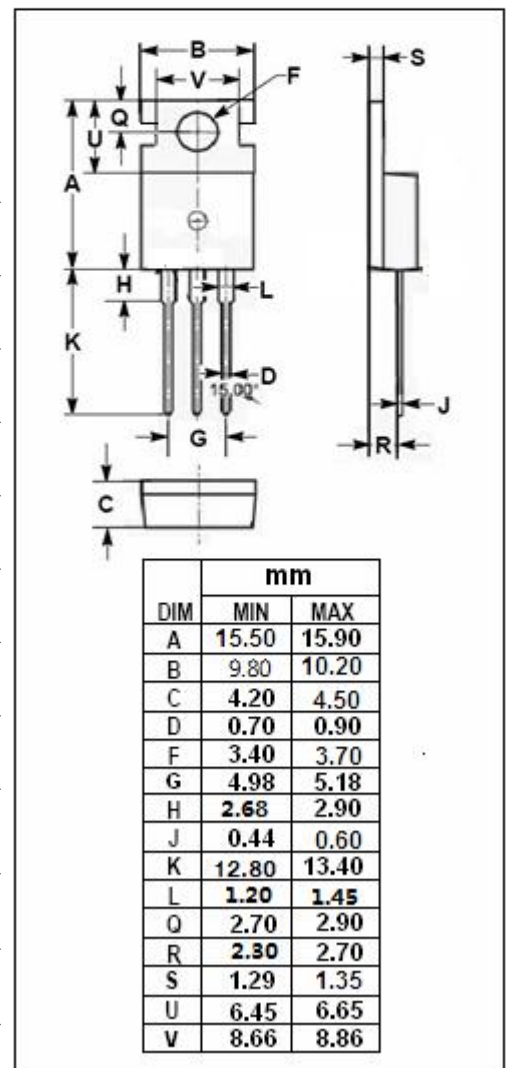
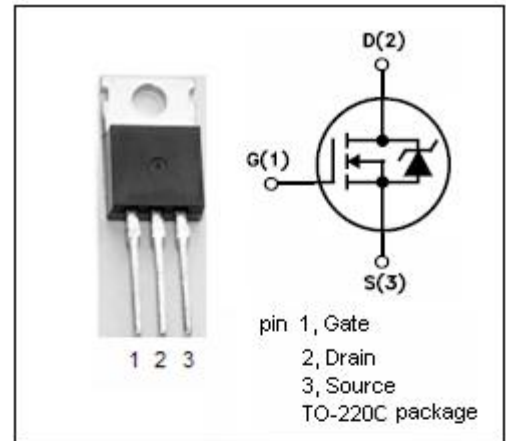
• Designed for applications such as switching regulators, switching converters, motor drivers, relay drivers and drivers for high power bipolar switching transistors requiring high speed and low gate drive power. This type can be operated directly from integrated circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage ( $V_{GS}=0$ )	500	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current-continuous@ $TC=36^\circ\text{C}$	4.5	A
$I_{DM}$	Drain Current-Single Pulsed	18	A
$P_{tot}$	Total Dissipation@ $TC=25^\circ\text{C}$	75	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	1.67	$^\circ\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	75	$^\circ\text{C}/\text{W}$



**isc N-Channel Mosfet Transistor**
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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	500			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> = 9A; V <sub>GS</sub> = 0			1.2	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 3A			1.5	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> =500V; V <sub>GS</sub> = 0			1	μA
G <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> = 25V; I <sub>D</sub> =3A	2.5			S
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>GS</sub> =10V;			20	ns
t <sub>r</sub>	Rise Time	I <sub>D</sub> =2.6A;			70	
t <sub>d(off)</sub>	Turn-off Delay Time	V <sub>DD</sub> =30V; R <sub>GS</sub> =50 Ω			190	
t <sub>f</sub>	Fall Time				70	

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