

# isc N-Channel Mosfet Transistor

# BUZ31

### • FEATURES

- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 0.2 \Omega$  (Max)
- High current capability
- 150°C operating temperature
- High speed switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### • DESCRIPTION

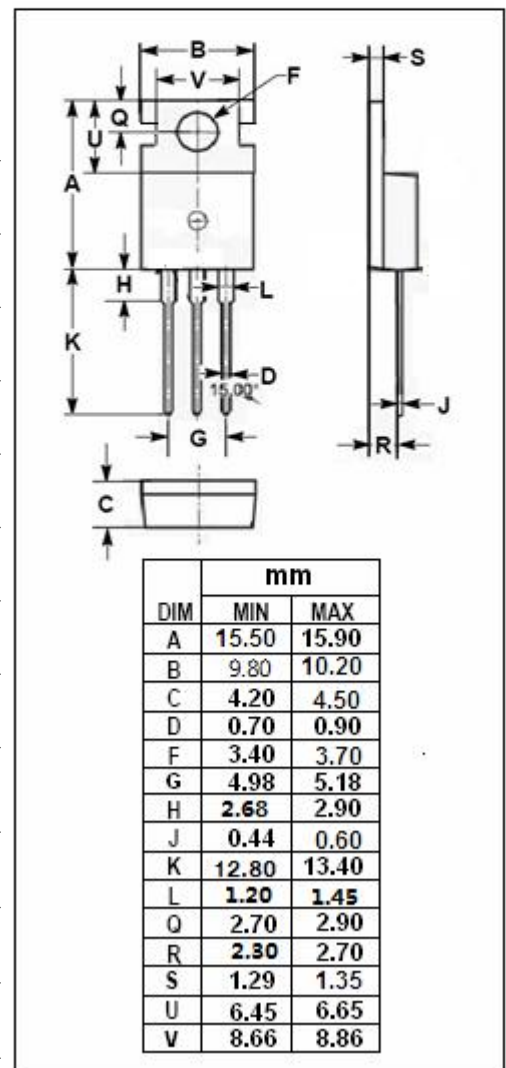
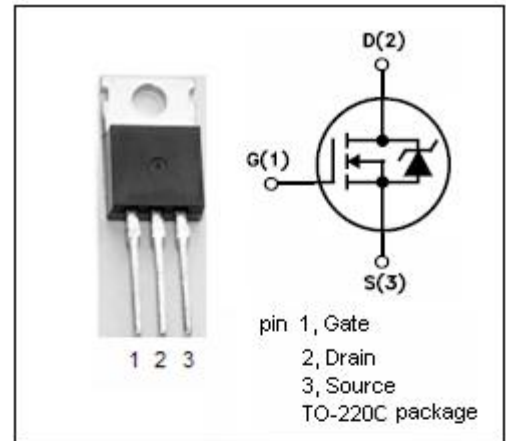
- High current , high speed switching
- Solenoid and relay drivers
- DC-DC & DC-AC converters

### • 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@ $TC=37^\circ\text{C}$	14.5	A
$I_{DM}$	Drain Current-Single Pulsed	58	A
$P_{tot}$	Total Dissipation@ $TC=25^\circ\text{C}$	95	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	1.32	$^\circ\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance,Junction to Ambient	75	$^\circ\text{C/W}$



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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> = 29A; V <sub>GS</sub> = 0			1.6	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 9A			0.2	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			1	μA
G <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> = 25V; I <sub>D</sub> =9A	3.0			S
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>GS</sub> =10V; I <sub>D</sub> =3A; V <sub>DD</sub> =30V; R <sub>GS</sub> =50 Ω			20	ns
t <sub>r</sub>	Rise Time				75	
t <sub>d(off)</sub>	Turn-off Delay Time				200	
t <sub>f</sub>	Fall Time				80	

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