

# isc N-Channel Mosfet Transistor

## BUZ21

### • FEATURES

- Static Drain-Source On-Resistance  
:  $R_{DS(on)} = 0.1 \Omega$  (Max)
- SOA is Power Dissipation Limited
- High input impedance
- High speed switching
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### • DESCRIPTION

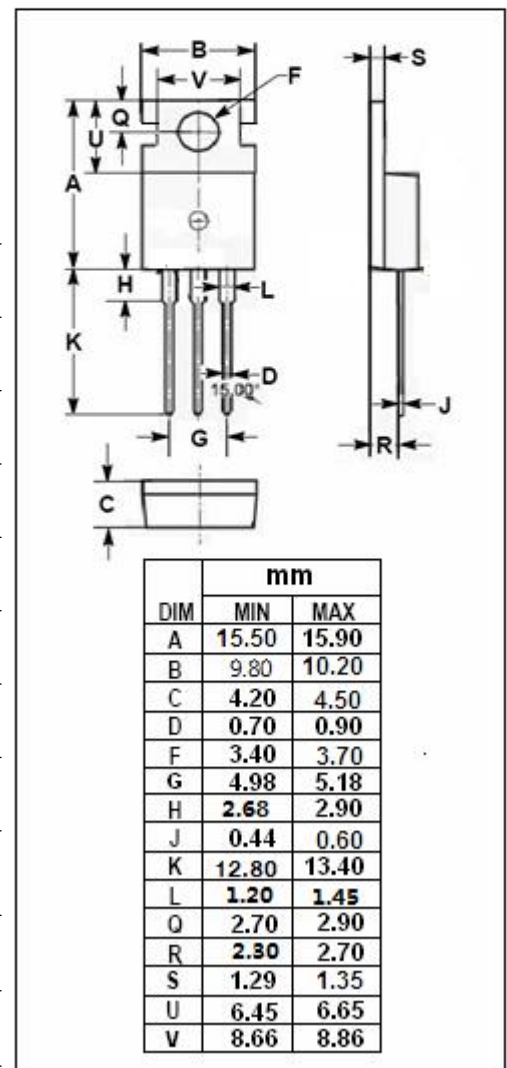
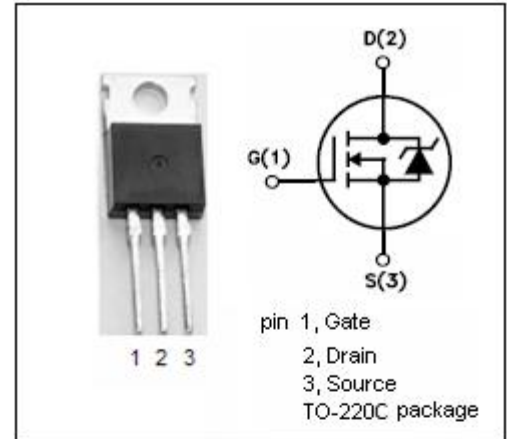
Designed for applications such as switching regulators, switching converters, motor drivers, relay drivers and drivers for high power bipolar switching transistors requiring high speed and low gate drive power. This type can be operated directly from integrated circuits.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DS}$	Drain-Source Voltage ( $V_{GS}=0$ )	100	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current-continuous@ $TC=55^\circ\text{C}$	19	A
$I_{DM}$	Drain Current-Single Pulsed	75	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**
**BUZ21**
**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	100			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> = 38A; V <sub>GS</sub> = 0			2.1	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 9A			0.1	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> =100V; V <sub>GS</sub> = 0			250	μA
G <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> = 25V; I <sub>D</sub> =9A	4			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			45	ns
t <sub>r</sub>	Rise Time				75	
t <sub>d(off)</sub>	Turn-off Delay Time				220	
t <sub>f</sub>	Fall Time				110	

**NOTICE:**

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.