

# isc N-Channel MOSFET Transistor

# BUK445-60A/B

## DESCRIPTION

- Drain Source Voltage-  
:  $V_{DSS}=60V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

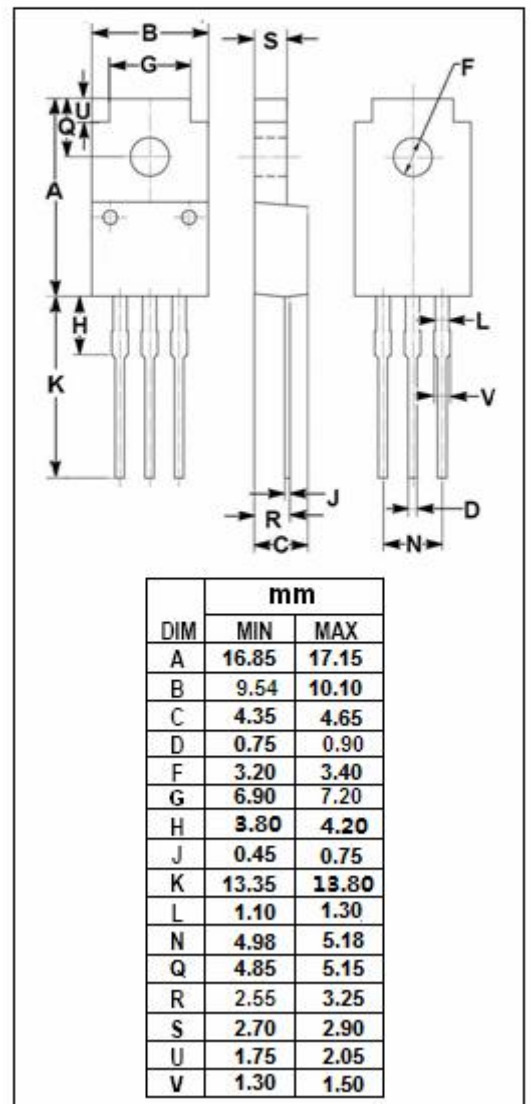
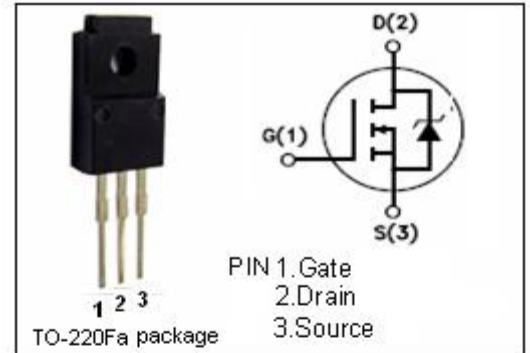
- Designed for Switched Mode Power Supplies (SMPS), motor control, welding, And in general purpose switching resistance application

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

SYMBOL	ARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage ( $V_{GS}=0$ )	60	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D$	Drain Current-continuous @ $TC=25^\circ\text{C}$	BUK445-60A	21
		BUK445-60B	20
$P_{tot}$	Total Dissipation@ $TC=25^\circ\text{C}$	30	W
$T_j$	Max. Operating Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	150	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	4.17	$^\circ\text{C}/\text{W}$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	55	$^\circ\text{C}/\text{W}$



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• ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0; I <sub>D</sub> = 0.25mA	60			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
R <sub>DS(on)</sub>	Drain-Source On-stage Resistance	V <sub>GS</sub> =10V; I <sub>D</sub> =20A	BUK445-60A		0.038	Ω
			BUK445-60B		0.045	Ω
I <sub>GSS</sub>	Gate Source Leakage Current	V <sub>GS</sub> = ±30V; V <sub>DS</sub> = 0			±100	nA
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =60V; V <sub>GS</sub> = 0			10	uA
V <sub>SD</sub>	Diode Forward Voltage	I <sub>F</sub> =21A; V <sub>GS</sub> =0			1.8	V
G <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> = 25V; I <sub>D</sub> = 20A	8			S
t <sub>r</sub>	Rise time	V <sub>GS</sub> =10V; I <sub>D</sub> =3A; R <sub>GS</sub> =50 Ω		60	90	ns
t <sub>on</sub>	Turn-on time			25	40	ns
t <sub>f</sub>	Fall time			100	130	ns
t <sub>off</sub>	Turn-off time			125	160	ns

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