

# isc N-Channel MOSFET Transistor

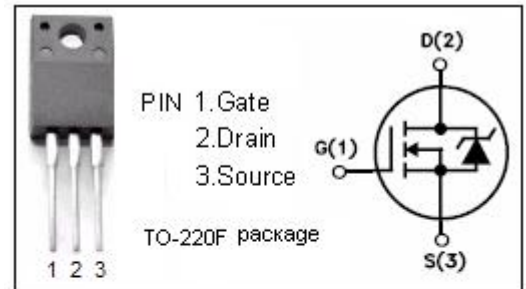
# 2SK1821

## DESCRIPTION

- Drain Current  $I_D = 2A @ T_C = 25^\circ C$
- Drain Source Voltage  
:  $V_{DSS} = 600V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

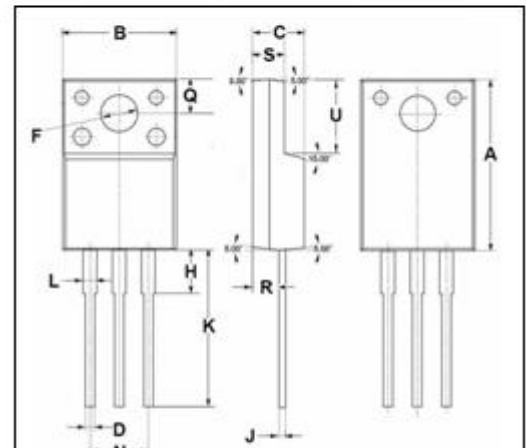
## APPLICATIONS

- Chopper regulator and motor drive
- DC-DC converters
- UPS



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage ( $V_{GS} = 0$ )	600	V
$V_{GS}$	Gate-Source Voltage	$\pm 25$	V
$I_D$	Drain Current-continuous@ $T_C = 25^\circ C$	2	A
$P_{tot}$	Total Dissipation@ $T_C = 25^\circ C$	30	W
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$



DIM	mm	
	MIN	MAX
A	14.95	15.05
B	10.00	10.10
C	4.40	4.60
D	0.75	0.80
F	3.10	3.30
H	3.70	3.90
J	0.50	0.70
K	13.4	13.6
L	1.10	1.30
N	5.00	5.20
Q	2.70	2.90
R	2.20	2.40
S	2.65	2.85
U	6.40	6.60

## • THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	4.167	$^\circ C/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ C/W$

**isc N-Channel MOSFET Transistor**
**2SK1821**
**• ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C)**

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> = 1mA	600			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =10mA	2.1		4.0	V
V <sub>DF</sub>	Body to drain diode forward voltage	I <sub>F</sub> = 4 A, V <sub>GS</sub> = 0		0.92	1.41	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 1A		5.5	6.5	Ω
I <sub>GSS</sub>	Gate-Body 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> =600V; V <sub>GS</sub> = 0			500	μA
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =25V;		270	400	pF
C <sub>rss</sub>	Reverse Transfer Capacitance	V <sub>GS</sub> =0V;		15	23	
C <sub>oss</sub>	Output Capacitance	f <sub>r</sub> =1MHz		32	48	
t <sub>r</sub>	Rise Tme	V <sub>GS</sub> =10V;		12	18	ns
t <sub>on</sub>	Turn-on Tme	I <sub>D</sub> =2A;		4	6	
t <sub>f</sub>	Fall Tme	V <sub>DD</sub> =300V;		20	30	
t <sub>off</sub>	Turn-off Tme	R <sub>L</sub> =25 Ω		25	40	

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