

# isc N-Channel MOSFET Transistor

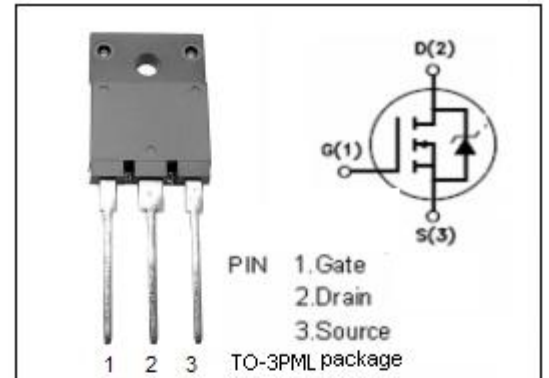
## 2SK2148-01

### DESCRIPTION

- Drain Current  $I_D=12A@T_C=25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS}=600V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

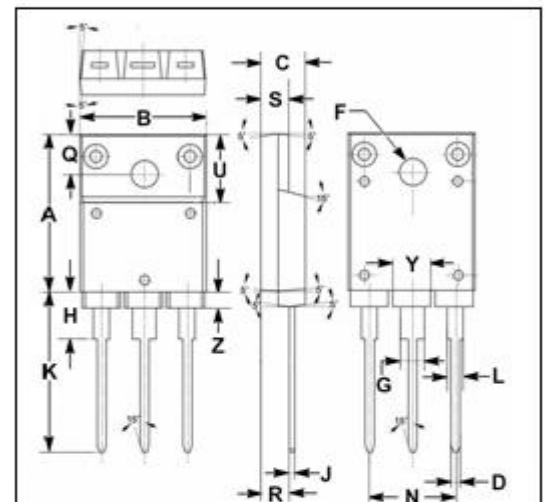
### APPLICATIONS

- Motor control
- UPS
- DC-DC converters
- General purpose power amplifier



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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage ( $V_{GS}=0$ )	900	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D$	Drain Current-continuous@ $T_C=25^\circ C$	12	A
$I_{D(\text{puls})}$	Pulse Drain Current	48	A
$P_{\text{tot}}$	Total Dissipation@ $T_C=25^\circ C$	80	W
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$
$T_{\text{stg}}$	Storage Temperature Range	-55~150	$^\circ C$



DIM	mm	
	MIN	MAX
A	19.90	20.10
B	15.90	16.10
C	5.50	5.70
D	0.90	1.10
F	3.30	3.50
G	2.90	3.10
H	5.90	6.10
J	0.595	0.605
K	22.30	22.50
L	1.90	2.10
N	10.80	11.00
Q	4.90	5.10
R	3.75	3.95
S	3.20	3.40
U	9.90	10.10
Y	4.70	4.90
Z	1.90	2.10

### • THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.56	$^\circ C/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	30	$^\circ C/W$

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• 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> =1mA	2.5	3.0	3.5	V
V <sub>SD</sub>	Diode Forward On-Voltage	I <sub>F</sub> =2 I <sub>DR</sub> ; V <sub>GS</sub> = 0		1.05	1.58	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 6A		0.55	0.75	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;		2500	3800	pF
C <sub>rss</sub>	Reverse Transfer Capacitance	V <sub>GS</sub> =0V;		50	75	
C <sub>oss</sub>	Output Capacitance	f <sub>T</sub> =1MHz		220	330	
t <sub>r</sub>	Rise Time	V <sub>GS</sub> =10V;		60	90	ns
t <sub>d(on)</sub>	Turn-on Delay Time	I <sub>D</sub> =12A;		30	45	
t <sub>f</sub>	Fall Time	V <sub>DD</sub> =300V;		80	120	
t <sub>d(off)</sub>	Turn-off Delay Time	R <sub>GS</sub> =10 Ω		140	210	

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