

isc N-Channel MOSFET Transistor

2SK678

DESCRIPTION

- Drain Current  $-I_D=13A @ T_C=25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS}=500V(\text{Min})$
- Fast Switching Speed

APPLICATIONS

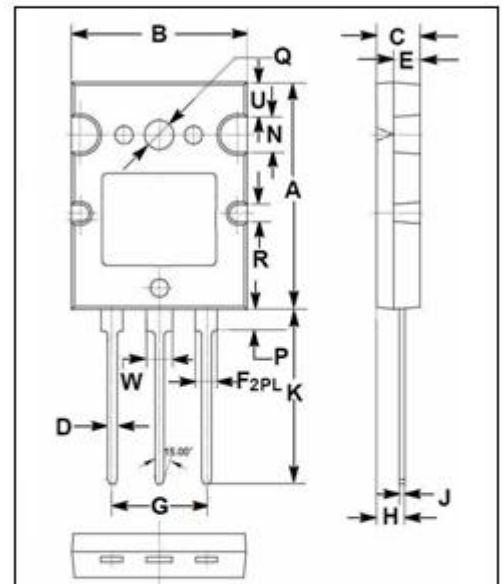
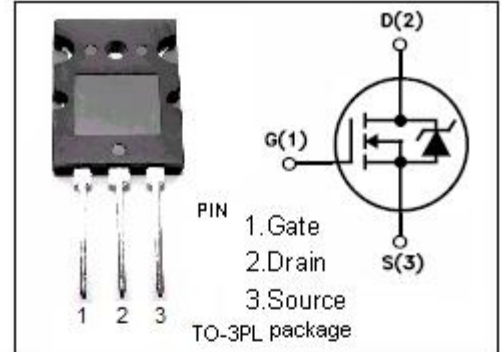
- High voltage,high speed applications, such as off-line switching power supplies , UPS,AC and DC motor controls,relay and solenoid drivers.

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

SYMBOL	ARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage ( $V_{GS}=0$ )	500	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current-continuous@ $TC=25^\circ C$	13	A
$P_{tot}$	Total Dissipation@ $TC=25^\circ C$	150	W
$T_j$	Max. Operating Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th j-c}$	Thermal Resistance,Junction to Case	0.833	$^\circ C/W$
$R_{th j-a}$	Thermal Resistance,Junction to Ambient	30.00	$^\circ C/W$



DIM	mm	
	MIN	MAX
A	25.50	26.50
B	19.80	20.20
C	4.50	5.50
D	0.90	1.10
E	2.80	3.20
F	2.40	2.60
G	10.80	11.00
H	3.10	3.30
J	0.50	0.70
K	20.00	21.00
N	3.90	4.10
P	2.40	2.60
Q	3.10	3.50
R	1.90	2.10
U	3.90	4.10
W	2.90	3.10

## isc N-Channel Mosfet Transistor

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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> = 10mA	500			V
V <sub>GS(TH)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = 10V; I <sub>D</sub> = 1mA	2.0		4.0	V
R <sub>DS(ON)</sub>	Drain-Source On-stage Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> =7A		0.32	0.40	Ω
V <sub>SD</sub>	Diode Forward Voltage	I <sub>F</sub> = 13A; V <sub>GS</sub> = 0			1.8	V
I <sub>GSS</sub>	Gate Source 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> =500V; V <sub>GS</sub> = 0			300	uA
t <sub>r</sub>	Rise time	V <sub>GS</sub> =10V; I <sub>D</sub> =7A; R <sub>L</sub> =30 Ω		70	140	ns
t <sub>on</sub>	Turn-on time			100	200	ns
t <sub>f</sub>	Fall time			75	150	ns
t <sub>off</sub>	Turn-off time			350	700	ns