

# isc N-Channel MOSFET Transistor

## 2SK1942

### DESCRIPTION

- Drain Current  $-I_D = 3A @ T_C = 25^\circ C$
- Drain Source Voltage-  
:  $V_{DSS} = 900V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

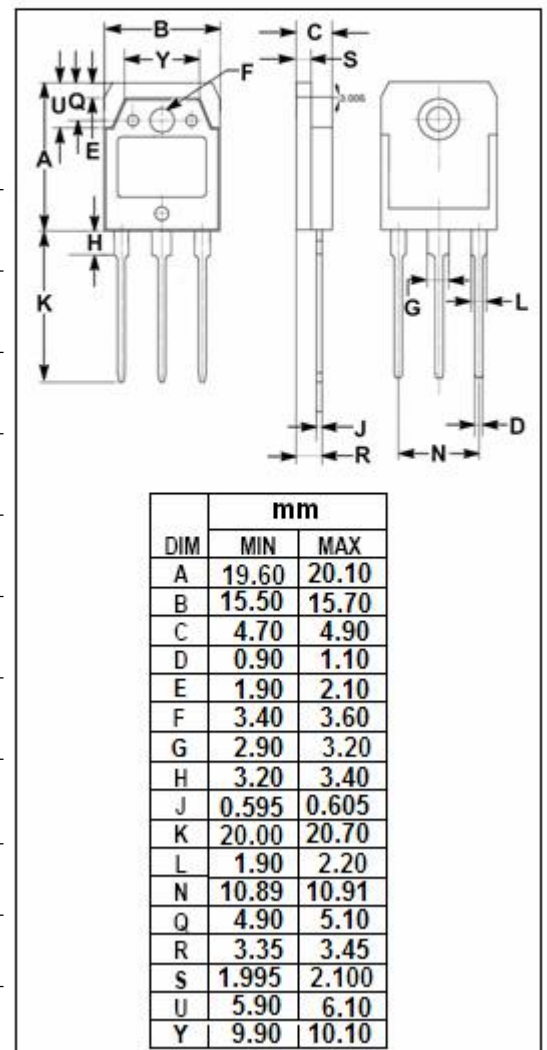
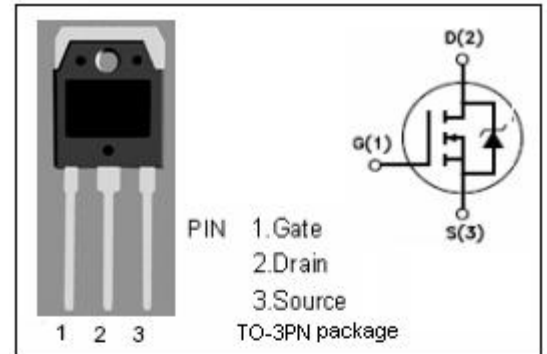
- Switching regulator
- UPS
- DC-DC converters
- General purpose power amplifier

### 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@ $T_C = 25^\circ C$	3	A
$P_{tot}$	Total Dissipation@ $T_C = 25^\circ C$	80	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	1.56	$^\circ C/W$
$R_{th(j-a)}$	Thermal Resistance, Junction to Ambient	35	$^\circ C/W$



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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	900			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> = V <sub>GS</sub> ; I <sub>D</sub> =1mA	2.5		3.5	V
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 1.5A			4	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> = 900V; V <sub>GS</sub> = 0		10	500	μA
C <sub>iss</sub>	Input capacitance	V <sub>DS</sub> =25V; V <sub>GS</sub> =0V; f <sub>r</sub> =1MHz		1000	1500	pF
C <sub>rss</sub>	Reverse transfer capacitance			25	40	
C <sub>oss</sub>	Output capacitance			90	135	
t <sub>r</sub>	Rise time	V <sub>GS</sub> =10V; I <sub>D</sub> =3A; V <sub>DD</sub> =600V; R <sub>L</sub> =10 Ω		10	15	ns
t <sub>on</sub>	Turn-on time			20	30	
t <sub>f</sub>	Fall time			15	25	
t <sub>off</sub>	Turn-off time			60	90	

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