

isc N-Channel MOSFET Transistor

2SK1938-01

DESCRIPTION

- Drain Current $-I_D=18A@ T_C=25^\circ C$
- Drain Source Voltage-
: $V_{DSS}=500V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

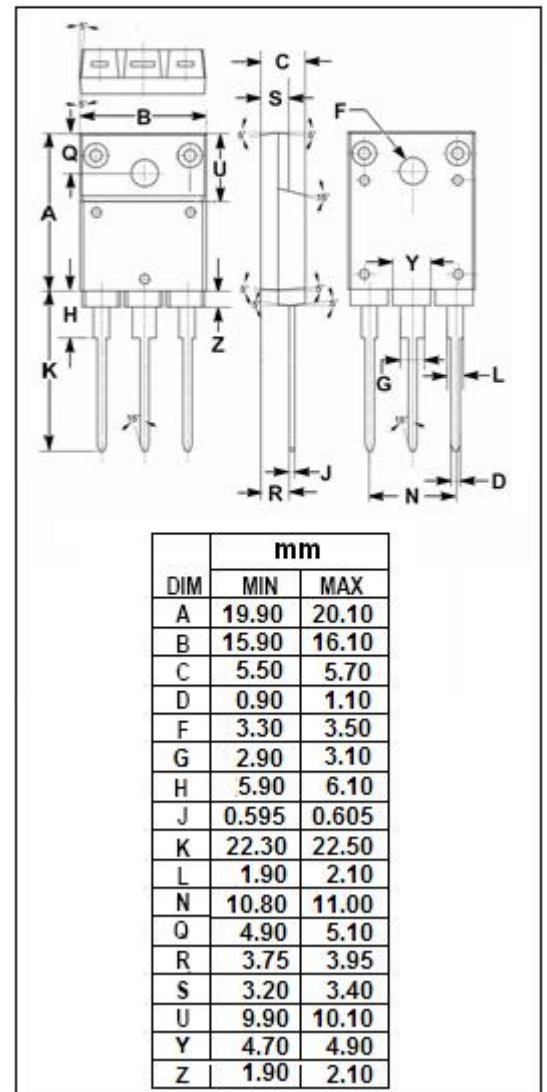
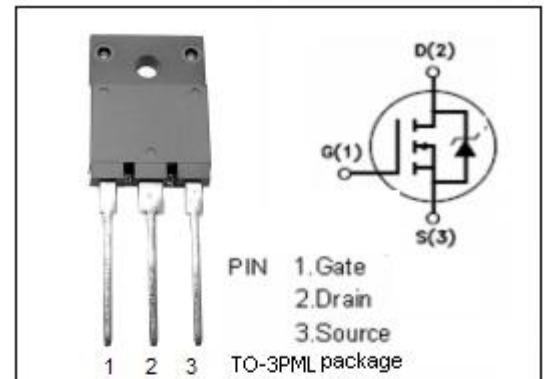
- Switching regulator
- UPS
- DC-DC converters
- General purpose power amplifier

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage ($V_{GS}=0$)	500	V
V_{GS}	Gate-Source Voltage	± 30	V
I_D	Drain Current-continuous@ $T_C=25^\circ C$	18	A
I_{DM}	Drain Current-Single Pulsed	72	A
P_{tot}	Total Dissipation@ $T_C=25^\circ C$	100	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	1.25	$^\circ C/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	30	$^\circ C/W$



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• ELECTRICAL CHARACTERISTICS (T_c=25°C)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYPE	MAX	UNIT
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0; I _D =1mA	500			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} ; I _D =1mA	2.5		3.5	V
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = 10V; I _D =9A		0.25	0.35	Ω
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ± 30V; V _{DS} = 0			± 100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =500V; V _{GS} = 0			500	μA
V _{SD}	Forward On-Voltage	I _S =36A; V _{GS} =0			1.5	V
G _{fs}	Forward Transconductance	V _{DS} = 25V; I _D =9A	9.0			S
t _r	Rise time	V _{GS} =10V; I _D =18A; V _{DD} =300V; R _L =10Ω		80	120	ns
t _{on}	Turn-on time			35	55	
t _f	Fall time			120	180	
t _{off}	Turn-off time			190	285	

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