

isc N-Channel MOSFET Transistor

2SK2050

DESCRIPTION

- Drain Current $-I_D = 30A @ T_C = 25^\circ C$
- Drain Source Voltage-
: $V_{DSS} = 100V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

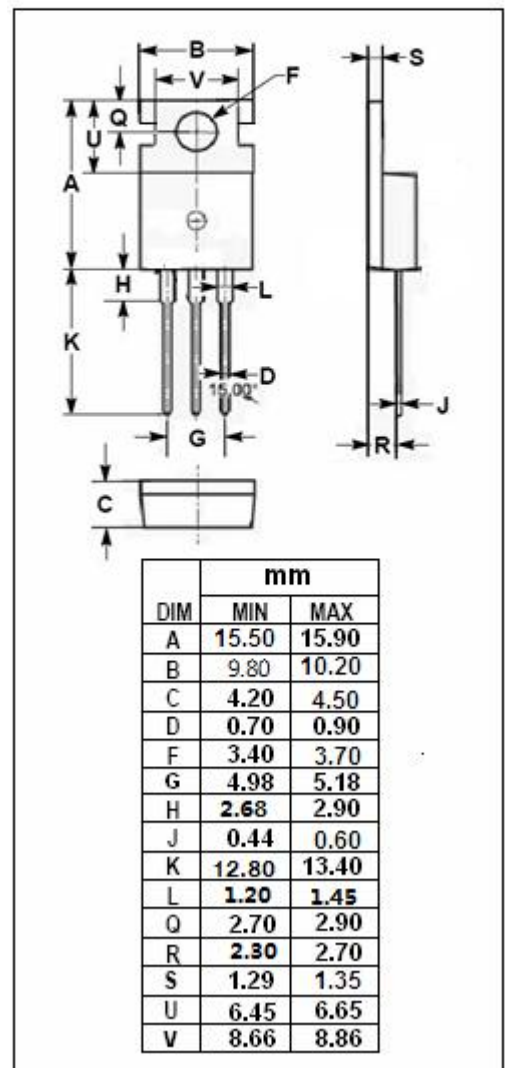
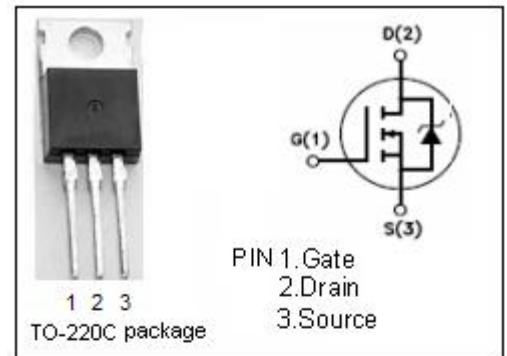
- Motor control
- DC-DC converters
- General purpose power amplifier

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage ($V_{GS} = 0$)	100	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Drain Current-continuous@ $T_C = 25^\circ C$	30	A
$I_{D(\text{puls})}$	Pulsed Drain Current	120	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
$R_{\text{th j-c}}$	Thermal Resistance, Junction to Case	1.56	$^\circ C/W$
$R_{\text{th j-a}}$	Thermal Resistance, Junction to Ambient	75	$^\circ C/W$



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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	100			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} ; I _D =1mA	1.0	1.5	2.5	V
V _{SD}	Diode Forward On-Voltage	I _F =2 I _{DR} ; V _{GS} = 0		0.9	1.5	V
R _{DS(on)}	Drain-Source On-Resistance	V _{GS} = 4V; I _D = 15A		0.04	0.07	Ω
I _{GSS}	Gate-Body Leakage Current	V _{GS} = ±20V; V _{DS} = 0			± 100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 100V; V _{GS} = 0			500	μA
C _{iss}	Input Capacitance	V _{DS} =25V;		2500	3700	pF
C _{rss}	Reverse Transfer Capacitance	V _{GS} =0V;		250	380	
C _{oss}	Output Capacitance	f _T =1MHz		500	750	
t _r	Rise Time	V _{GS} =10V;		140	210	ns
t _{d(on)}	Turn-on Delay Time	I _D =30A;		20	30	
t _f	Fall Time	V _{DD} =30V;		260	390	
t _{d(off)}	Turn-off Delay Time	R _L =25 Ω		500	750	

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