

# isc N-Channel MOSFET Transistor

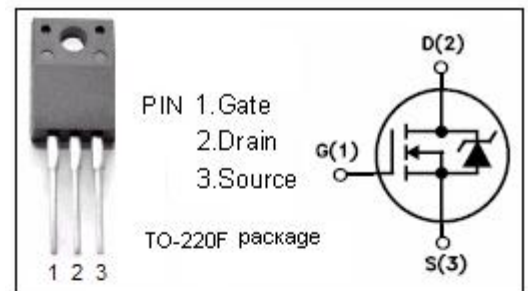
## 2SK2020-01

### DESCRIPTION

- Drain Current  $-I_D = 3.5A @ T_C = 25^\circ C$
- 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 regulators
- UPS
- DC-DC converters
- General purpose power amplifier

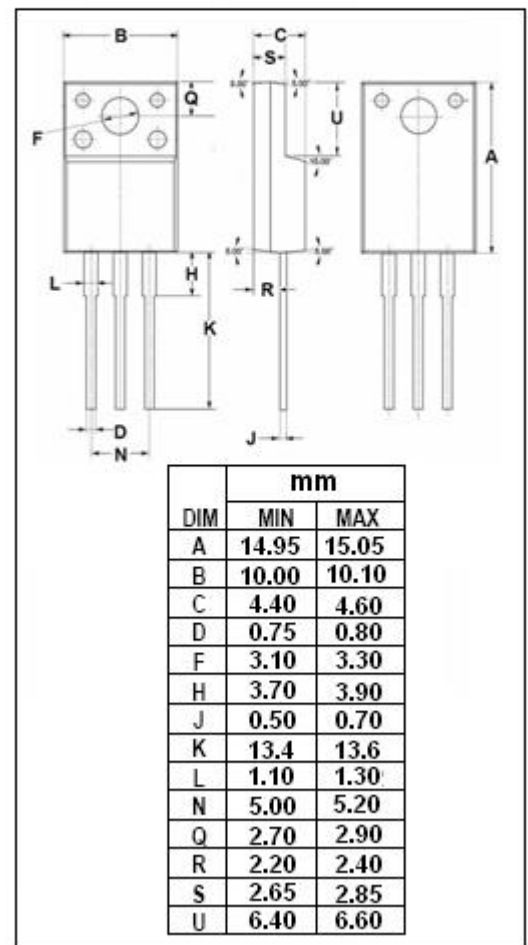


### ABSOLUTE MAXIMUM RATINGS( $T_a = 25^\circ C$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage ( $V_{GS}=0$ )	500	V
$V_{GS}$	Gate-Source Voltage	$\pm 30$	V
$I_D$	Drain Current-continuous@ $T_C = 25^\circ C$	3.5	A
$I_{D(puls)}$	Pulsed drain current	14	A
$P_{tot}$	Total Dissipation@ $T_C = 25^\circ C$	30	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	4.17	$^\circ C/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	62.5	$^\circ C/W$



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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	500			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
R <sub>DS(on)</sub>	Drain-Source On-Resistance	V <sub>GS</sub> = 10V; I <sub>D</sub> = 1.5A		2	3	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> = 500V; V <sub>GS</sub> = 0			500	μA
C <sub>iss</sub>	Input capacitance	V <sub>DS</sub> =25V;		600	900	pF
C <sub>rss</sub>	Reverse transfer capacitance	V <sub>GS</sub> =0V; f <sub>r</sub> =1MHz		10	15	
C <sub>oss</sub>	Output capacitance			50	75	
t <sub>r</sub>	Rise Time	V <sub>GS</sub> =10V;		10	15	ns
t <sub>d(on)</sub>	Turn-on Delay Time	I <sub>D</sub> =3.5A;		15	25	
t <sub>f</sub>	Fall Time	V <sub>DD</sub> =300V; R <sub>L</sub> =10 Ω		15	25	
t <sub>d(off)</sub>	Turn-off Delay Time			40	60	

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