

# isc N-Channel MOSFET Transistor

## 2SK1213

### DESCRIPTION

- Drain Current  $-I_D=6A@ T_C=25^\circ C$
- Drain Source Voltage:  
:  $V_{DSS}=600V(\text{Min})$
- Fast Switching Speed
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

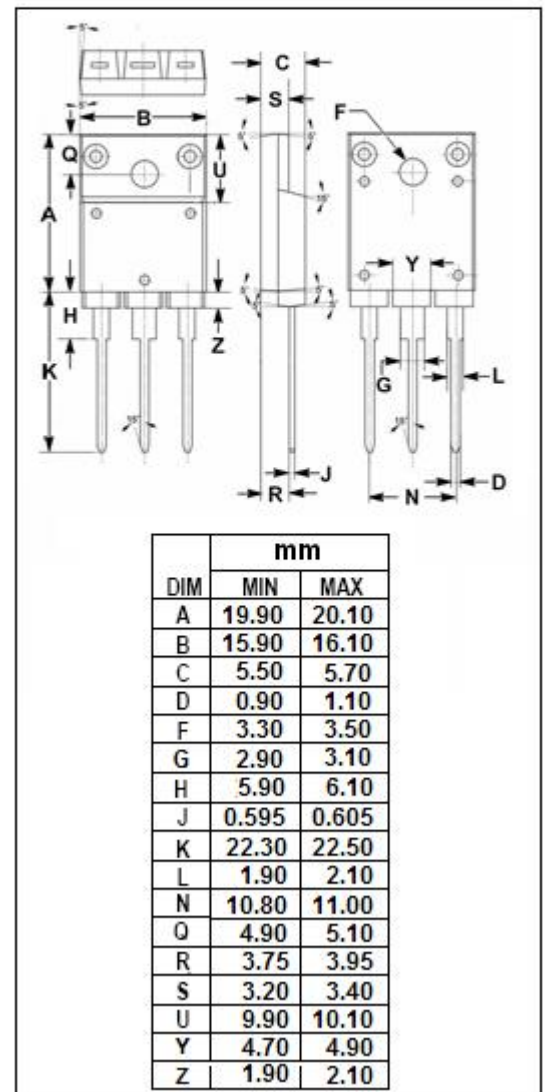
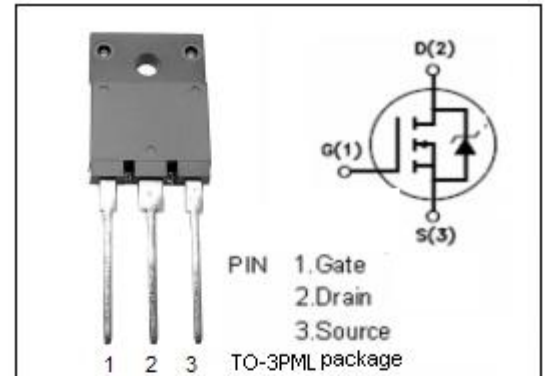
- Designed for high voltage, high speed power switching

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage ( $V_{GS}=0$ )	600	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current-continuous@ $T_C=25^\circ C$	6	A
$P_{tot}$	Total Dissipation@ $T_C=25^\circ C$	125	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	1.0	$^\circ C/W$
$R_{th\ j-a}$	Thermal Resistance, Junction to Ambient	50	$^\circ C/W$



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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	600			V
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =10 V; I <sub>D</sub> =1mA	1.5		3.5	V
R <sub>DS(on)</sub>	Drain-Source On-stage Resistance	V <sub>GS</sub> =10V; I <sub>D</sub> =3A		0.95	1.25	Ω
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> =600V; V <sub>GS</sub> = 0			300	uA
V <sub>SD</sub>	Forward On-Voltage	I <sub>S</sub> =6A; V <sub>GS</sub> =0			2.0	V
t <sub>r</sub>	Rise time	V <sub>GS</sub> =10V; I <sub>D</sub> =3A; R <sub>L</sub> =100 Ω		25	50	ns
t <sub>on</sub>	Turn-on time			40	80	ns
t <sub>f</sub>	Fall time			20	40	ns
t <sub>off</sub>	Turn-off time			85	170	ns

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