

## FEATURES

- | Low on-resistance

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- | Fast switching speed

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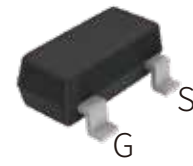
- | Low voltage drive makes this device ideal for  
Portable equipment

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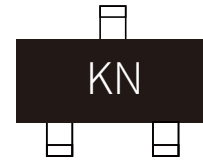
- | Easily designed drive circuits

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- | Easy to parallel



SOT-523



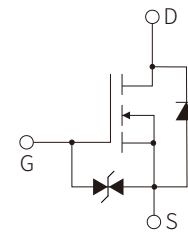
Marking

## APPLICATION

- | Epoxy UL: 94V-0

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- | Mounting Position: Any



Schematic Symbol

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C )

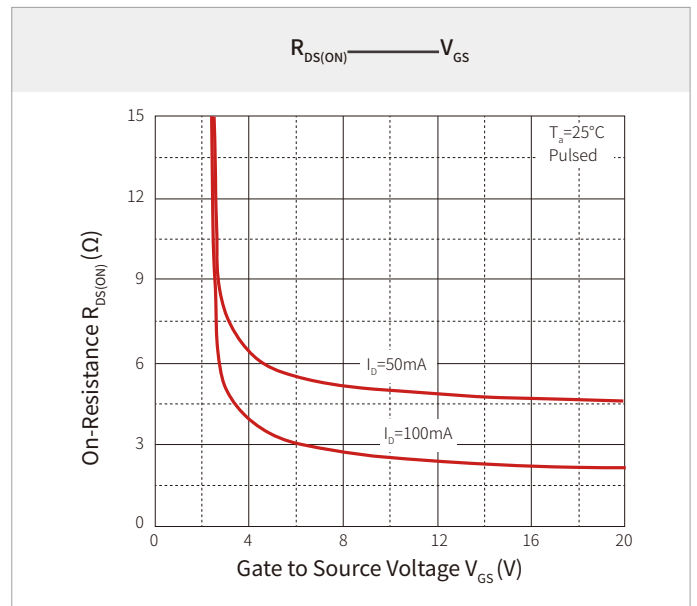
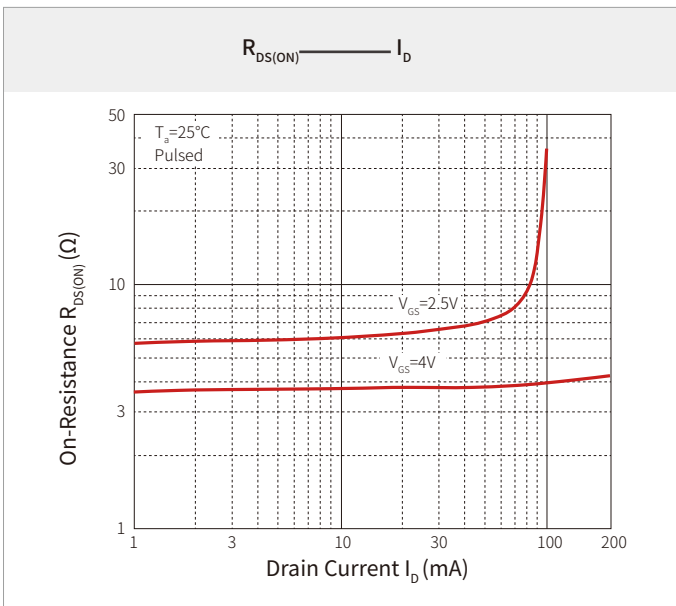
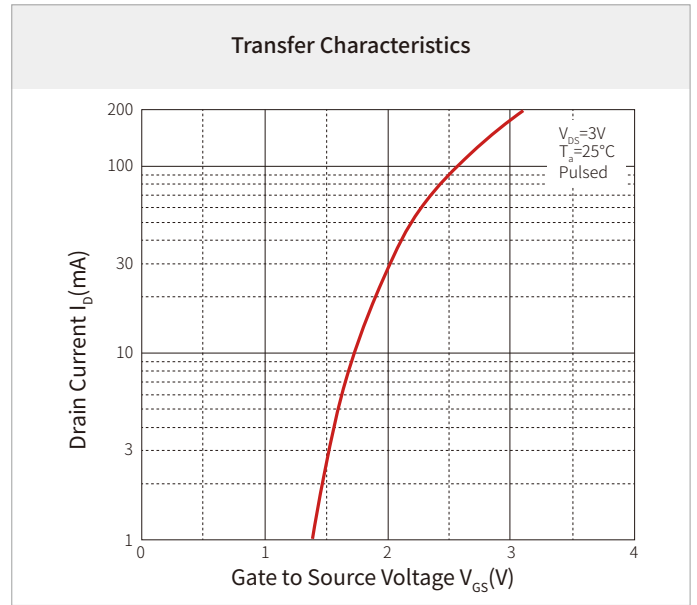
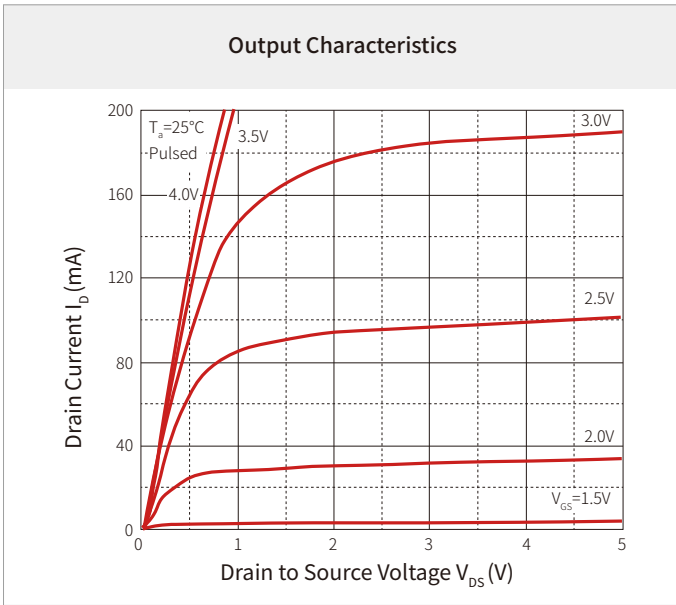
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DSS</sub>	30	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current	I <sub>D</sub>	0.1	A
Power Dissipation	P <sub>D</sub>	0.15	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-50- +150	°C
Thermal Resistance From Junction to Ambient	R <sub>θJA</sub>	833	°C/W

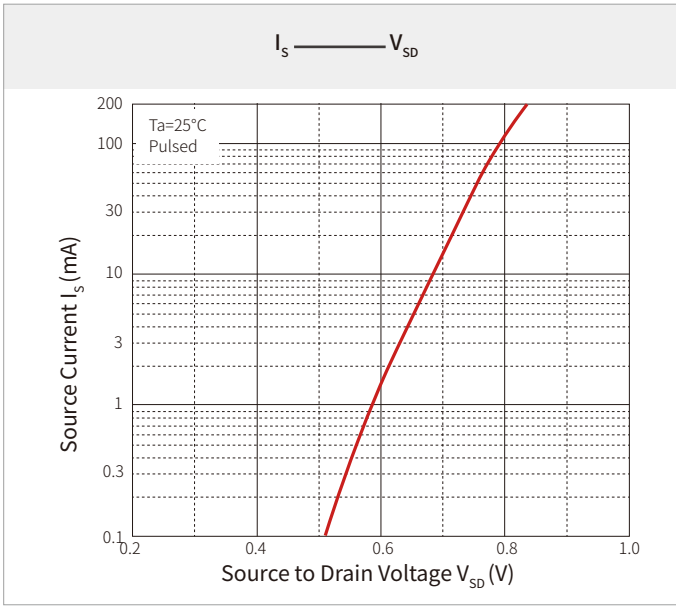
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
<b>Off Characteristics</b>						
Drain-source Breakdown Voltage	V <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =10μA	30			V
Gate-Threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =3V, I <sub>D</sub> =100μA	0.8		1.5	V
Zero Gate Voltage Drain current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1	μA
Gate Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V			±2	μA
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =3V, I <sub>D</sub> =10mA	20			mS
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =4V, I <sub>D</sub> =10mA			8	Ω
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =1mA			13	Ω
<b>Dynamic Characteristics*</b>						
Input capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = 5V, V <sub>GS</sub> = 0V, f=1MHz		13		pF
Output capacitance	C <sub>OSS</sub>			9		pF
Reverse Transfer capacitance	C <sub>rss</sub>			4		pF
<b>Switching Characteristics*</b>						
Turn-On Delay Time	td(on)	V <sub>GS</sub> =5V, V <sub>DD</sub> =5V, I <sub>D</sub> =10mA R <sub>g</sub> =10Ω, R <sub>L</sub> =500Ω		15		ns
Rise Time	tr			35		ns
Turn-Off Delay Time	td(off)			80		ns
Fall Time	t <sub>f</sub>			80		ns

\* These parameters have no way to verify.

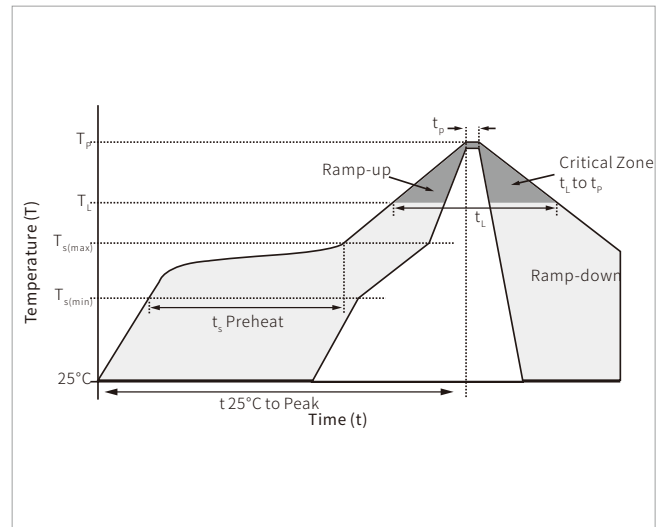
# CHARACTERISTIC CURVES



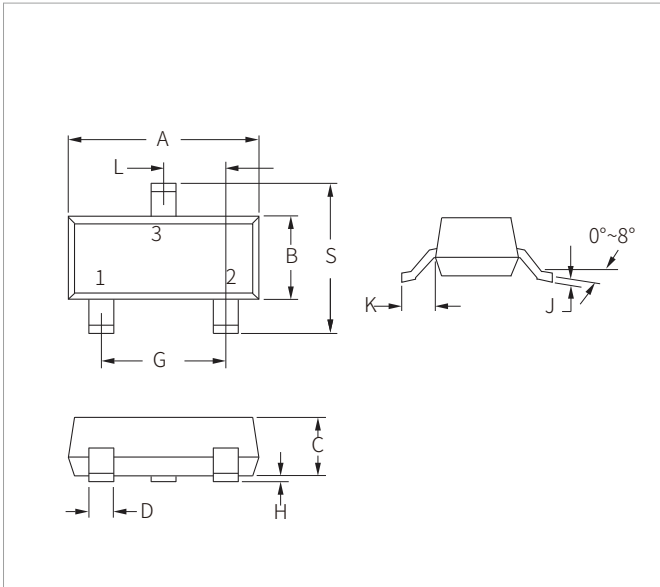


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260°C

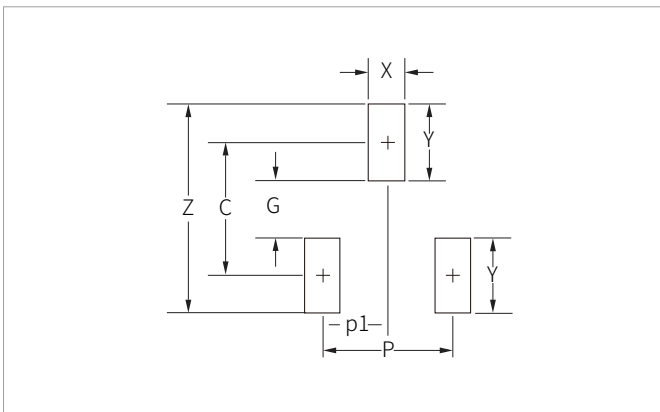


## SOT-523 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.70	0.059	0.067
B	0.70	0.90	0.028	0.035
C	0.60	0.90	0.023	0.035
D	0.15	0.30	0.005	0.012
G	1.00BSC		0.039BSC	
H	0.00	0.10	0.000	0.004
J	0.10	0.20	0.004	0.008
K	(0.22)		(0.009)	
L	0.50BSC		0.020BSC	
S	1.45	1.75	0.057	0.069

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
C	(1.40)	(0.055)
P	1.00	0.039
p1	0.50	0.020
G	0.60	0.024
X	0.40	0.016
Y	0.80	0.031
Z	2.20	0.087

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SNM2SK3019T	SOT-523	3000PCS	7"

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