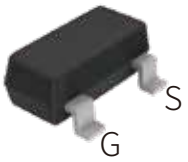
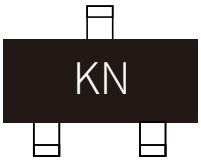
FEATURES

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for Portable equipment
- Easily designed drive circuits
- Easy to parallel



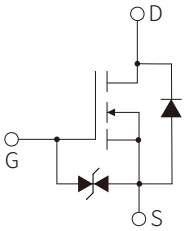
SOT-523



Marking

APPLICATION

- Epoxy UL: 94V-0
- Mounting Position: Any



Schematic Symbol

APPROVALS

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

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	0.1	A
Power Dissipation	P_D	0.15	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-50- +150	°C
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	833	°C/W

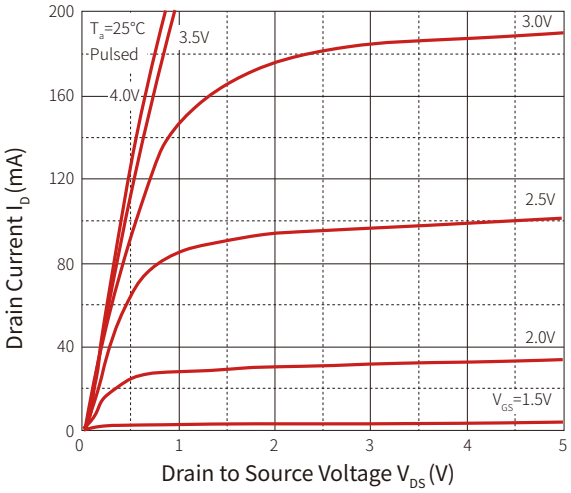
ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-source Breakdown Voltage	V_{DSS}	V_{GS}=0V, I_D=10μA	30			V
Gate-Threshold voltage	$V_{GS(th)}$	V_{DS}=3V, I_D=100μA	0.8		1.5	V
Zero Gate Voltage Drain current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1	μA
Gate Leakage Current	I_{GSS}	V_{GS}=±20V ,V_{DS}=0V			±2	μA
Forward Transconductance	g_{FS}	V_{DS}=3V, I_D=10mA	20			mS
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4V, I_D=10mA			8	Ω
		V_{GS}=2.5V, I_D=1mA			13	Ω
Dynamic Characteristics*						
Input capacitance	C_{ISS}	V_{DS} = 5V, V_{GS} = 0V, f=1MHz		13		pF
Output capacitance	C_{OSS}			9		pF
Reverse Transfer capacitance	C_{rss}			4		pF
Switching Characteristics*						
Turn-On Delay Time	td(on)	V_{GS}=5V,V_{DD}=5V,I_D=10mA R_g=10Ω,R_L=500Ω		15		ns
Rise Time	tr			35		ns
Turn-Off Delay Time	td(off)			80		ns
Fall Time	t_f			80		ns

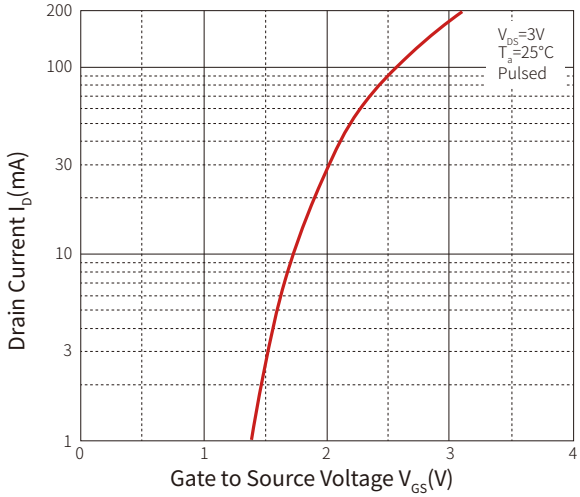
* These parameters have no way to verify.

CHARACTERISTIC CURVES

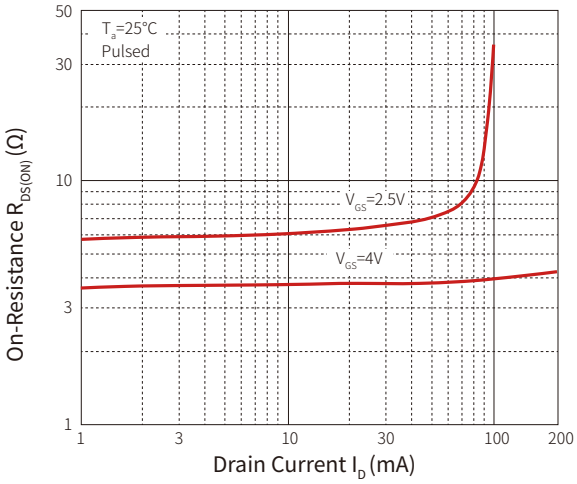
Output Characteristics



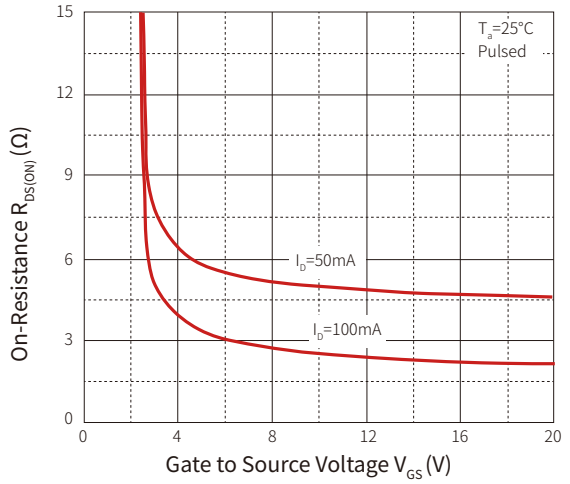
Transfer Characteristics

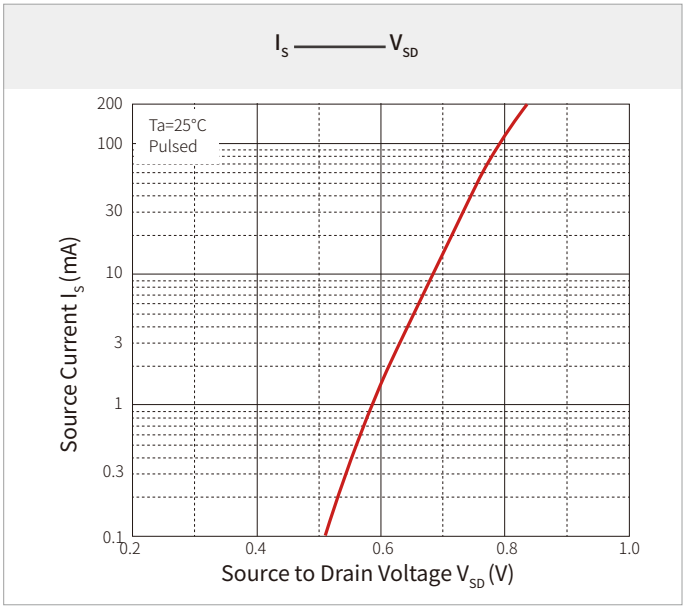


$R_{DS(ON)}$ —— I_D



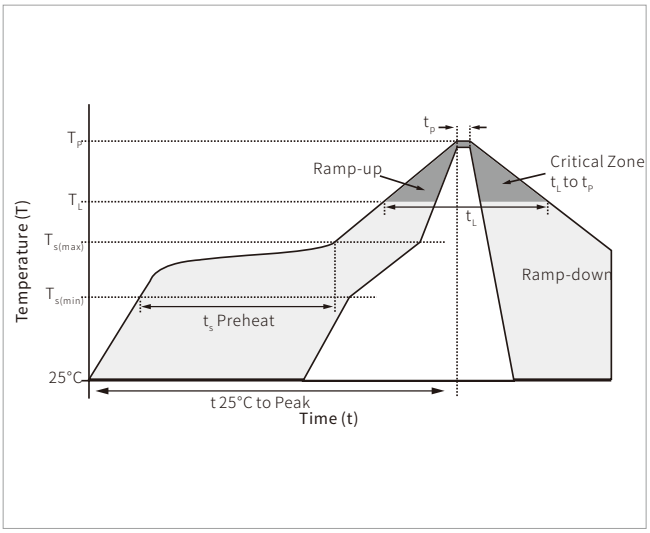
$R_{DS(ON)}$ —— V_{GS}



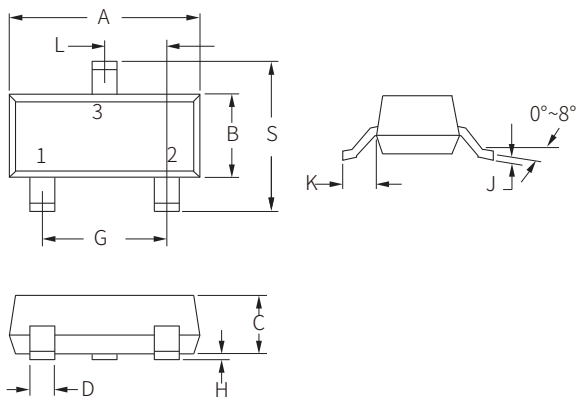


SOLDERING PARAMETERS

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

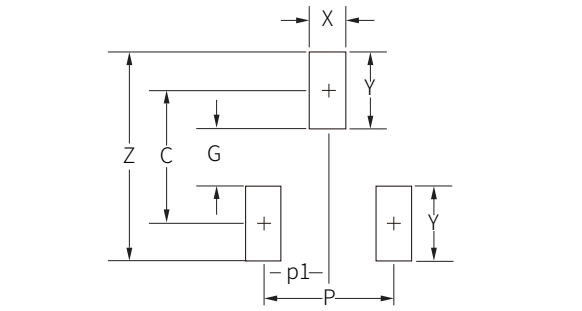


SOT-523 PACKAGE INFORMATION



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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