Silicon N-Channel MOSFET

L2SK3019LT1G
S-L2SK3019LT1G

Applications

Interfacing,switching(30V,100mA)

Features

Low on-resistance

Fast switching speed

Low voltage drive(2.5V) makes this ideal for portable equipment

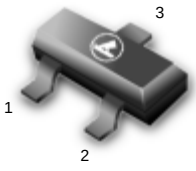
Drive circuits can be simple

Parallel use is easy

ESD>500

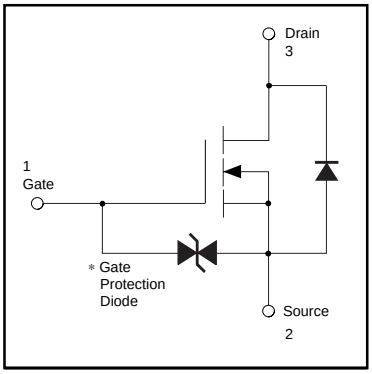
we declare that the material of product
compliance with RoHS requirements.

S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



SOT– 23

Equivalent circuit



A protection diode is included between the gate and the source terminals to protect the diode against static electricity when the product is in use. Use a protection circuit when the fixed voltages are exceeded.

ORDERING INFORMATION

Device	Marking	Shipping
L2SK3019LT1G S-L2SK3019LT1G	KN	3000/Tape & Reel
L2SK3019LT3G S-L2SK3019LT3G	KN	10,000/Tape & Reel

Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	± 100	mA
Pulsed Drain Current [1)]	I_{DM}	± 400	
Total Power Dissipation [2)]	P_D	225	mW
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	°C

1) Pw≤10μs, Duty cycle≤1%
2) With each pin mounted on the recommended lands.

L2SK3019LT1G,S-L2SK3019LT1G

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	–	–	±1	μA	V_{GS}=±20V, V_{DS}=0V
Drain-source breakdown voltage	$V_{(BR)DSS}$	30	–	–	V	I_D=10μA, V_{GS}=0V
Zero gate voltage drain current	I_{DSS}	–	–	1.0	μA	V_{DS}=30V, V_{GS}=0V
Gate threshold voltage	$V_{GS(th)}$	0.8	–	1.5	V	V_{DS}=3V, I_D=100μA
Static drain-source on-state resistance	$R_{DS(on)}$	–	5	8	Ω	I_D=10mA, V_{GS}=4V
	$R_{DS(on)}$	–	7	13	Ω	I_D=1mA, V_{GS}=2.5V
Forward transfer admittance	$\|Y_{fs}\|$	20	–	–	ms	I_D=10mA, V_{DS}=3V
Input capacitance	C_{iss}	–	13	–	pF	V_{DS}=5V
Output capacitance	C_{oss}	–	9	–	pF	V_{GS}=0V
Reverse transfer capacitance	C_{rss}	–	4	–	pF	f=1MHz
Turn-on delay time	$t_{d(on)}$	–	15	–	ns	I_D=10mA, V_{DD} ≒5V
Rise time	t_r	–	35	–	ns	V_{GS}=5V
Turn-off delay time	$t_{d(off)}$	–	80	–	ns	R_L=500Ω
Fall time	t_f	–	80	–	ns	R_G=10Ω

●Electrical characteristic curves

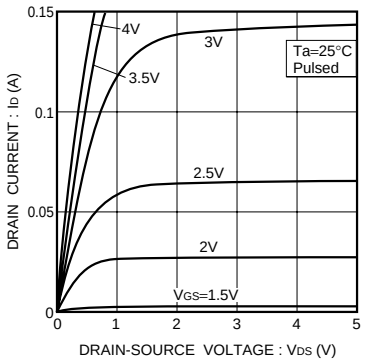


Fig.1 Typical output characteristics

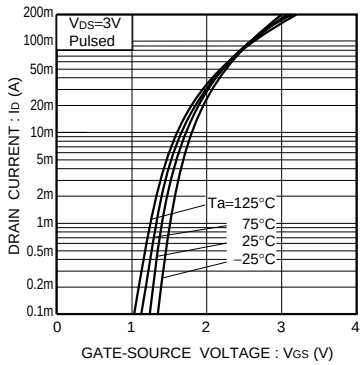


Fig.2 Typical transfer characteristics

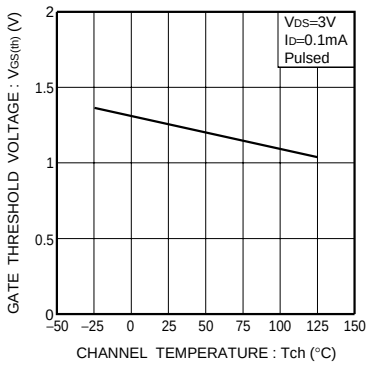


Fig.3 Gate threshold voltage vs. channel temperature

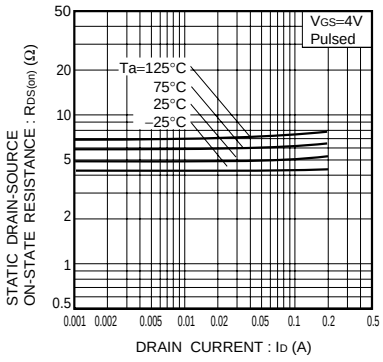


Fig.4 Static drain-source on-state resistance vs. drain current (I)

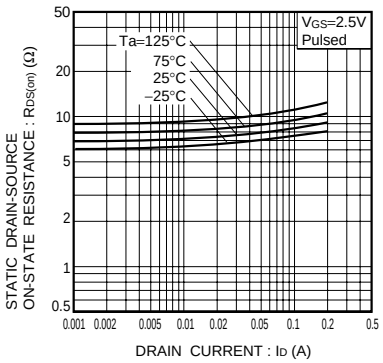


Fig.5 Static drain-source on-state resistance vs. drain current (II)

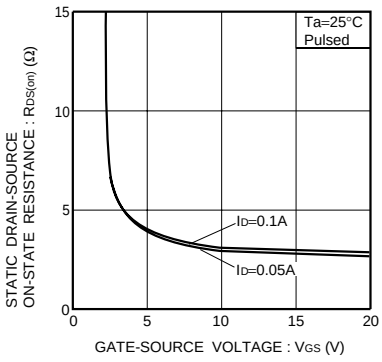


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

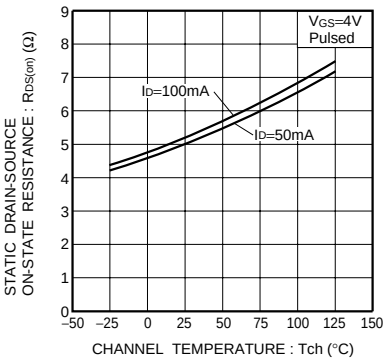


Fig.7 Static drain-source on-state resistance vs. channel temperature

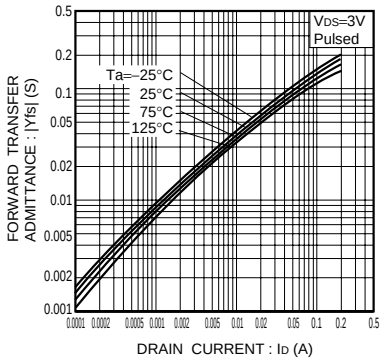


Fig.8 Forward transfer admittance vs. drain current

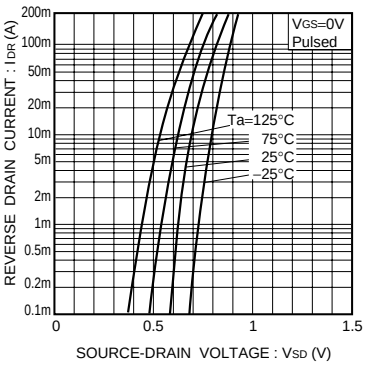


Fig.9 Reverse drain current vs. source-drain voltage (I)

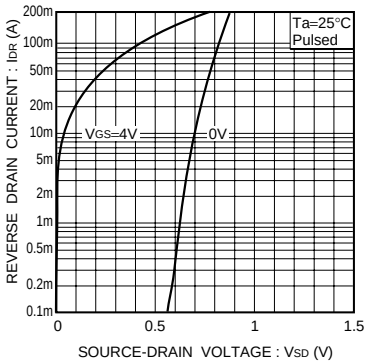


Fig.10 Reverse drain current vs. source-drain voltage (II)

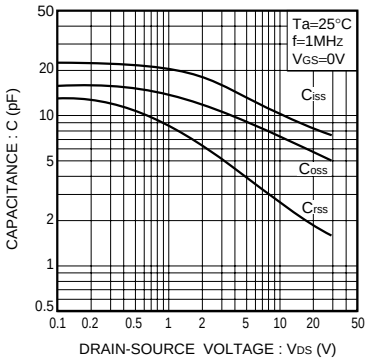


Fig.11 Typical capacitance vs. drain-source voltage

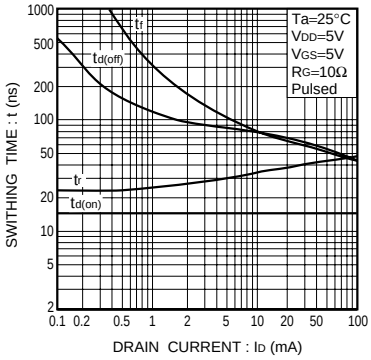


Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)

●Switching characteristics measurement circuit

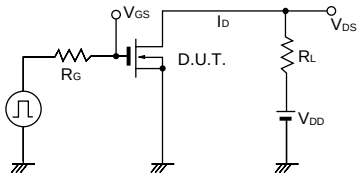


Fig.13 Switching time measurement circuit

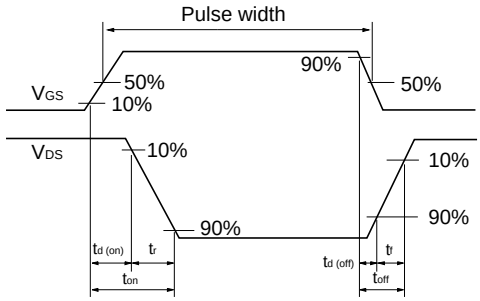
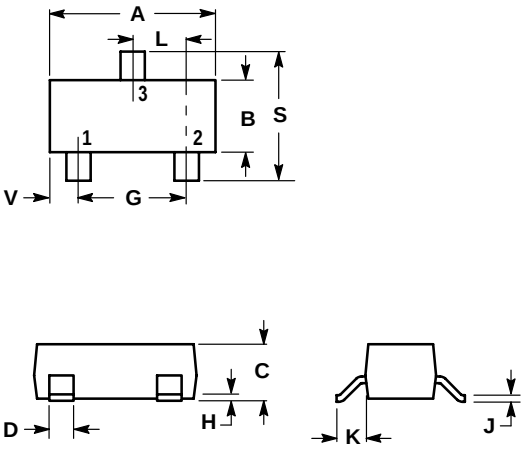


Fig.14 Switching time waveforms

L2SK3019LT1G,S-L2SK3019LT1G

SOT–23



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60