

Silicon N-Channel MOSFET

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

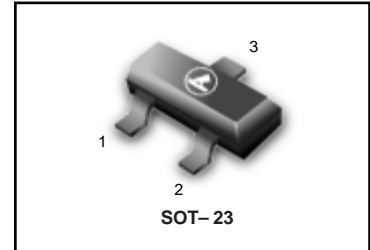
ESD500V

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

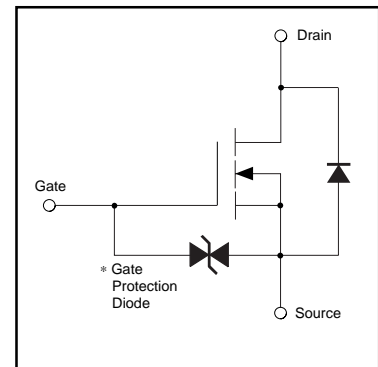
ORDERING INFORMATION

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

L2SK3019LT1G



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.

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) P_w ≤ 10μs, Duty cycles ≤ 1%

2) With each pin mounted on the recommended lands.

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●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	-	-	± 1	μA	$V_{GS}=\pm 20V, V_{DS}=0V$
Drain-source breakdown voltage	$V_{(BR)DSS}$	30	-	-	V	$I_D=10\mu A, V_{GS}=0V$
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	$V_{DS}=3V, I_D=100\mu A$
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	$R_L=500\Omega$
Fall time	t_f	-	80	-	ns	$R_G=10\Omega$

●Electrical characteristic curves

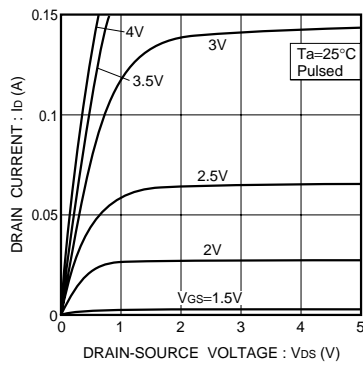


Fig.1 Typical output characteristics

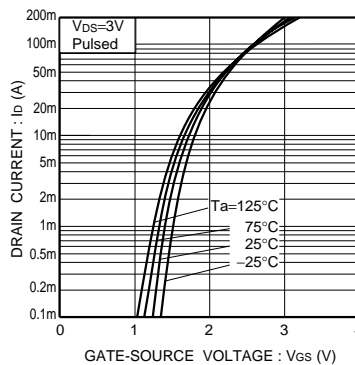


Fig.2 Typical transfer characteristics

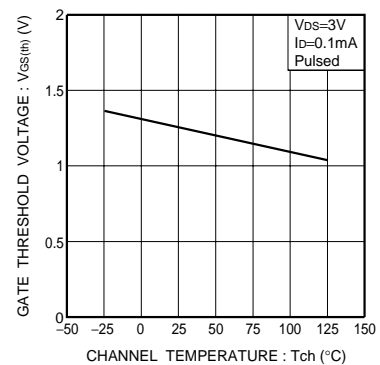


Fig.3 Gate threshold voltage vs. channel temperature

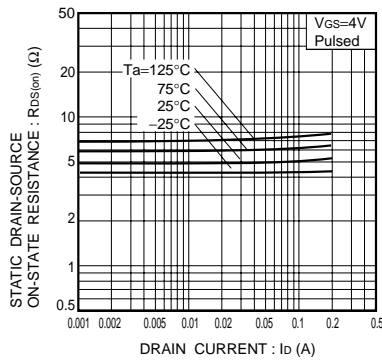


Fig.4 Static drain-source on-state resistance vs. drain current (I)

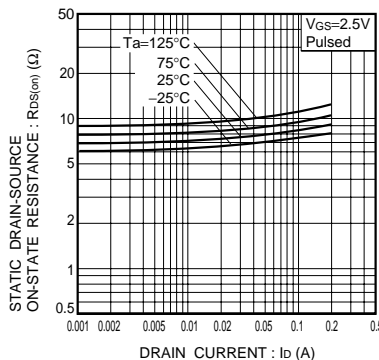


Fig.5 Static drain-source on-state resistance vs. drain current (II)

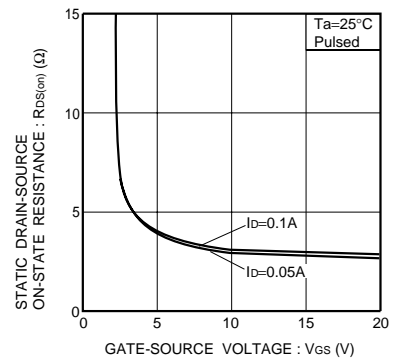


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

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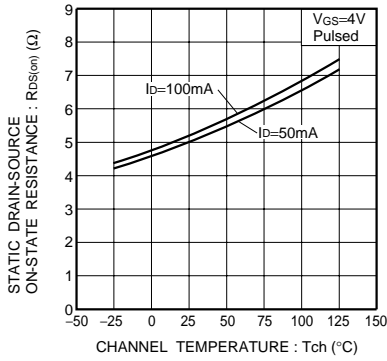


Fig.7 Static drain-source on-state resistance vs. channel temperature

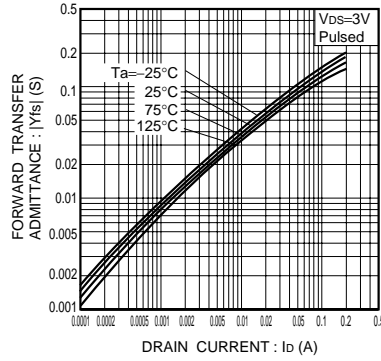


Fig.8 Forward transfer admittance vs. drain current

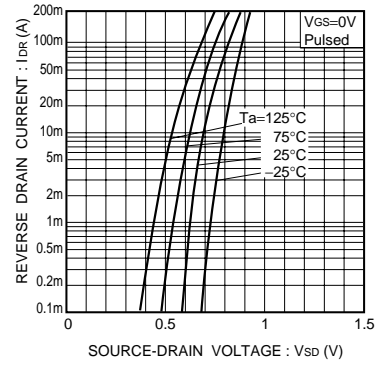


Fig.9 Reverse drain current vs. source-drain voltage (I)

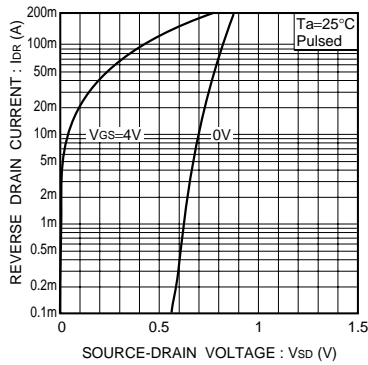


Fig.10 Reverse drain current vs. source-drain voltage (II)

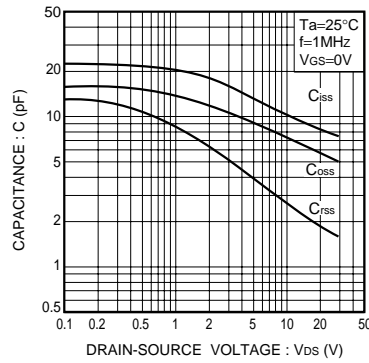


Fig.11 Typical capacitance vs. drain-source voltage

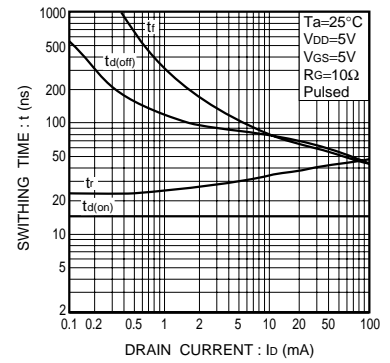


Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)

● Switching characteristics measurement circuit

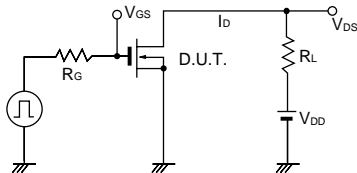


Fig.13 Switching time measurement circuit

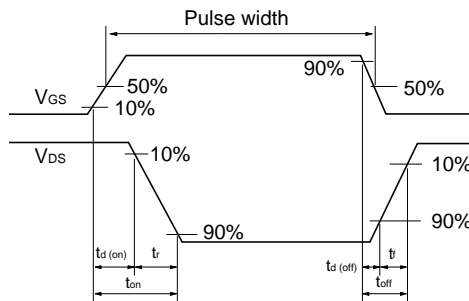


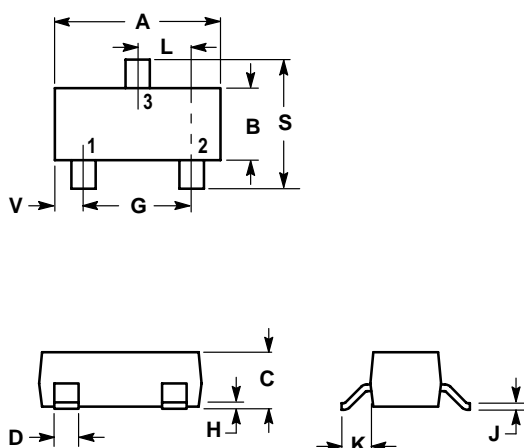
Fig.14 Switching time waveforms

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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

