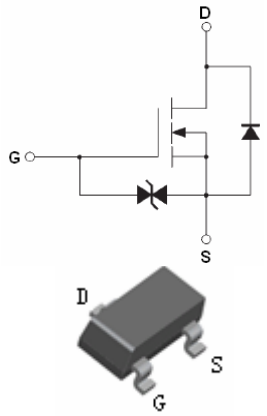
N-Channel Enhancement Mode Field Effect Transistor

2SK3018

FEATURES

- Low on-resistance.
- Fast switching speed.
- Low voltage drive(2.5V)makes this Device ideal for portable equipment.
- Easily designed drive circuits.
- Easy to parallel.

Lead-free



SOT-23

APPLICATIONS

- Interfacing,switching (30V,100mA)

ORDERING INFORMATION

Type No.	Marking	Package Code
2SK3018	KN	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	**Parameter**	**Value**	**Units**
V_{DSS}	Drain-Source voltage	30	V
V_{GSS}	Gate -Source voltage	±20	V
I_D I_{DP} *1	drain current Continuous Pulsed	100 200	mA
I_{DR} I_{DRP} *1	Reverse drain current Continuous Pulsed	100 200	mA
P_D *2	Total Power Dissipation(T_C=25℃)	200	mW
T_{ch}, T_{stg}	Channel and Storage Temperature	-55 to +150	℃

*1Pw≤10us,Duty cycle≤50%

*2With each pin mounted on the recommended lands.

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ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Gate- Source Leakage	I_{GSS}	V_{GS}=±20V, V_{DS}=0V			±1	uA
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	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	uA
Static drain-source on-state resistance	$R_{DS(on)}$	I_D=10mA, V_{GS}=4V		5	8	Ω
	$R_{DS(on)}$	I_D=1mA, V_{GS}=2.5V		7	13	Ω
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS}=3V, I_D=10mA	20			mS
Input capacitance	C_{ISS}	V_{DS}=5V,V_{GS}=0V,f=1.0MHz		13		pF
Output capacitance	C_{OSS}			9		
Reverse transfer capacitance	C_{RSS}			4		
Turn-On Delay Time	$t_{D(ON)}$	V_{DD} = 5V, I_D= 10mA, R_L = 500Ω, V_{GS}= 5V, R_{GEN}= 10Ω		15		ns
Rise time	t_r			35		ns
Turn-Off Delay Time	$t_{D(OFF)}$			80		ns
Fall time	T_r			80		ns

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

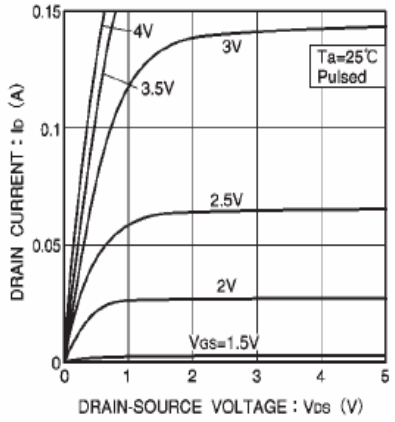

Fig.1 Typical output characteristics

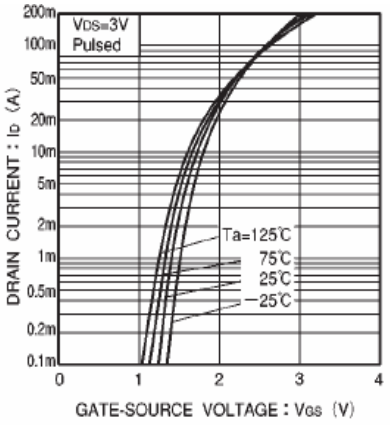

Fig.2 Typical transfer characteristics

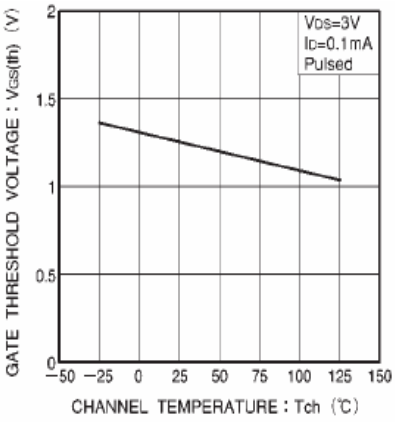

Fig.3 Gate threshold voltage vs. channel temperature

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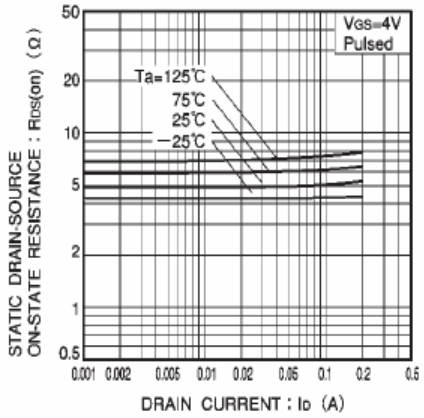

Fig.4 Static drain-source on-state resistance vs. drain current (Ⅰ)

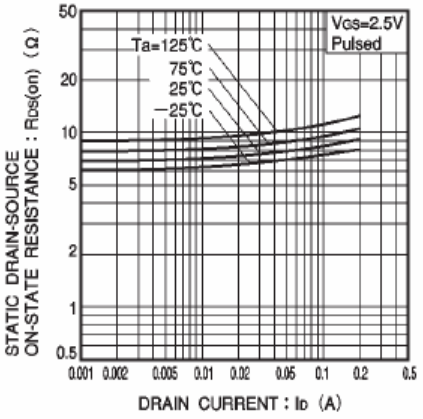

Fig.5 Static drain-source on-state resistance vs. drain current (Ⅱ)

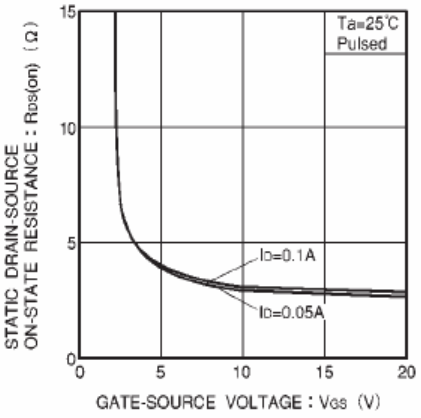

Fig.6 Static drain-source on-state resistance vs. gate-source voltage

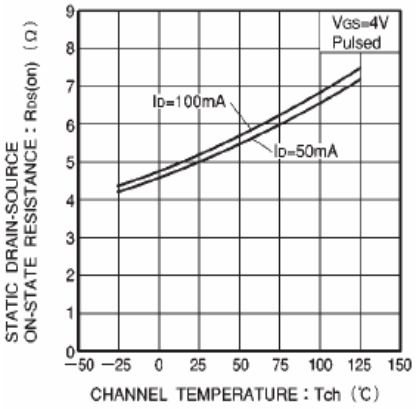

Fig.7 Static drain-source on-state resistance vs. channel temperature

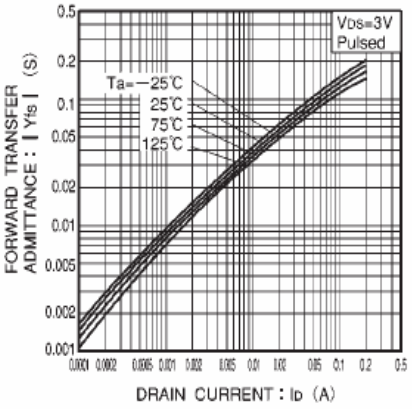

Fig.8 Forward transfer admittance vs. drain current

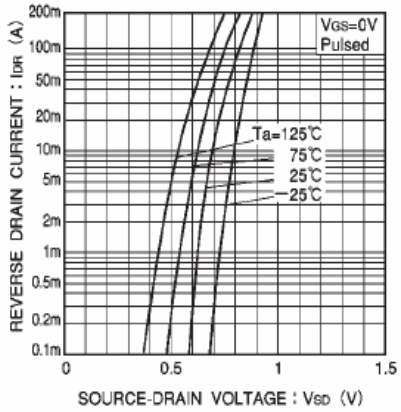

Fig.9 Reverse drain current vs. source-drain voltage (Ⅰ)

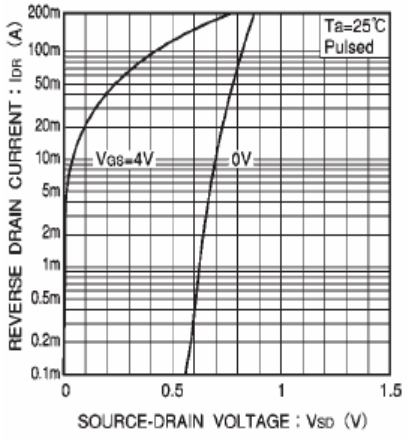

Fig.10 Reverse drain current vs. source-drain voltage (Ⅱ)

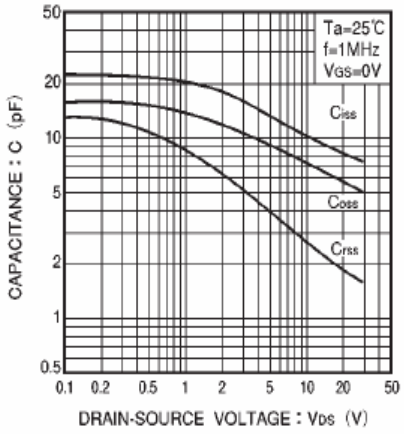

Fig.11 Typical capacitance vs. drain-source voltage

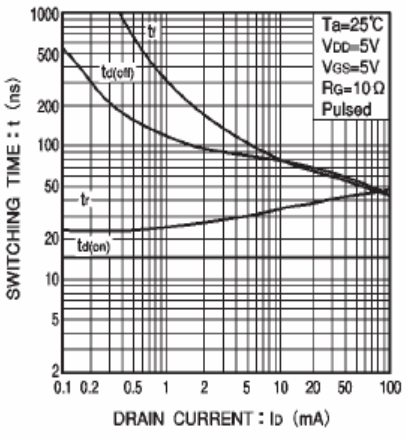

Fig.12 Switching characteristics (See Figures. 13 and 14 for the measurement circuit and resultant waveforms)

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Switching characteristics measurement circuit

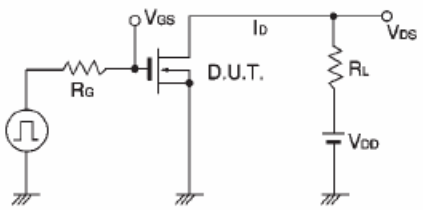


Fig.13 Switching time measurement circuit

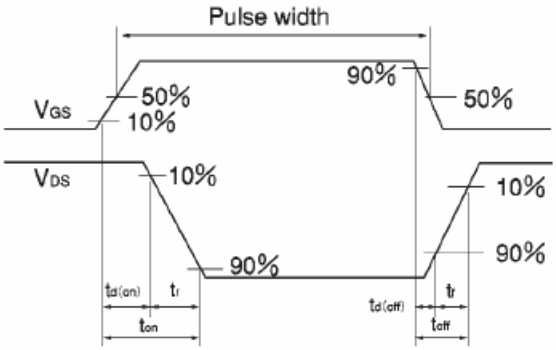
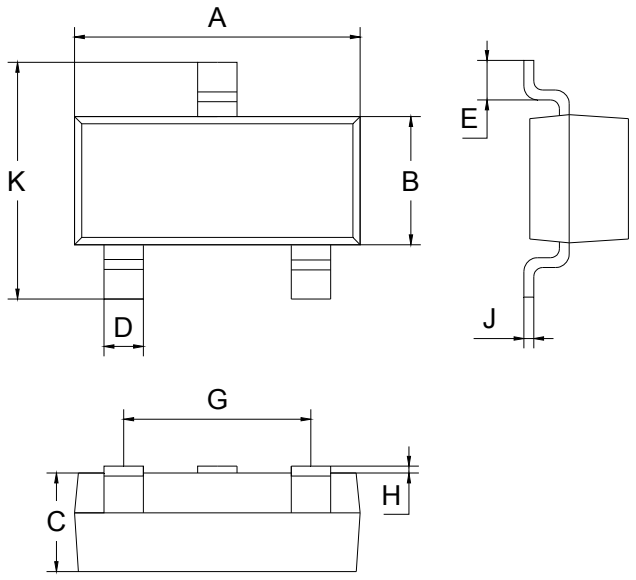


Fig.14 Switching time waveforms

PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.1 Typical	
K	2.20	2.60
All Dimensions in mm		

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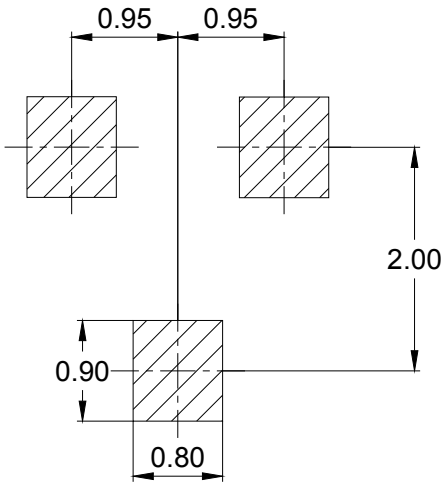
SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
2SK3018	SOT-23	3000/Tape&Reel