

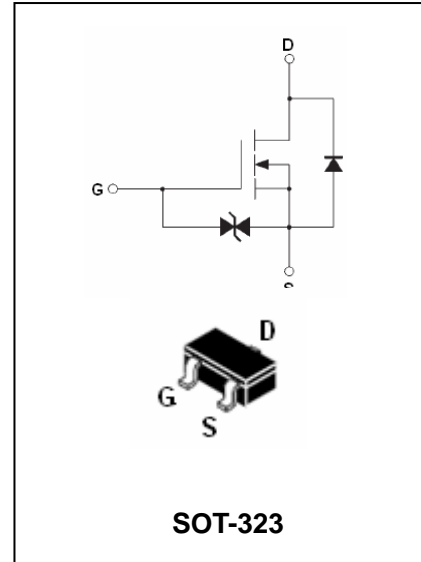


N-Channel Enhancement Mode Field Effect Transistor

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.



APPLICATIONS

- Interfacing,switching (30V,100mA)

ORDERING INFORMATION

Type No.	Marking	Package Code
2SK3018	KN	SOT-323

MAXIMUM RATING @ Ta=25°C 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°C)	200	mW
T _{ch} , T _{stg}	Channel and Storage Temperature	-55 to +150	°C

*1Pw≤10us,Duty cycle≤50%

*2With each pin mounted on the recommended lands.



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ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Gate- Source Leakage	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 1	μA
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 10\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 3V, I_D = 100\mu A$	0.8		1.5	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
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	$t_{D(ON)}$	$V_{DD} = 5V, I_D = 10mA,$ $R_L = 500\Omega, V_{GS} = 5V,$ $R_{GEN} = 10\Omega$		15		ns
Rise time	t_r			35		ns
Turn-Off Delay Time	$t_{D(OFF)}$			80		ns
Fall time	T_r			80		ns



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TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

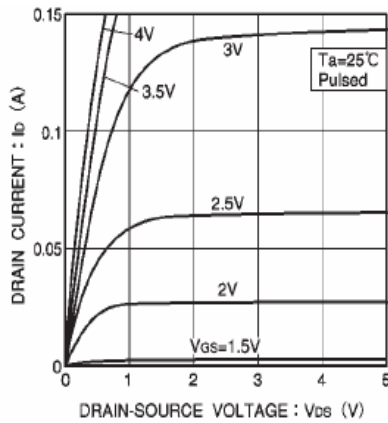


Fig. 1 Typical output characteristics

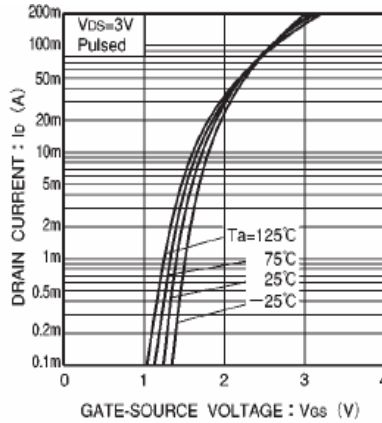


Fig. 2 Typical transfer characteristics

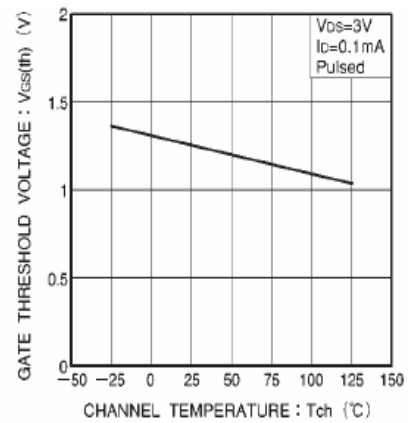


Fig. 3 Gate threshold voltage vs. channel temperature

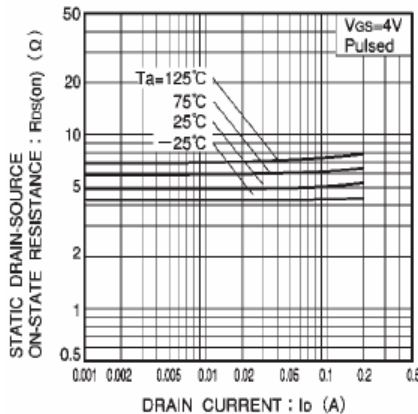


Fig. 4 Static drain-source on-state resistance vs. drain current (I)

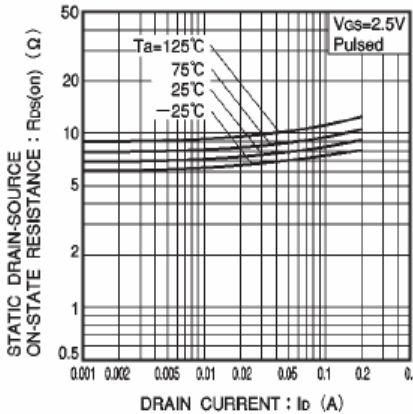


Fig. 5 Static drain-source on-state resistance vs. drain current (II)

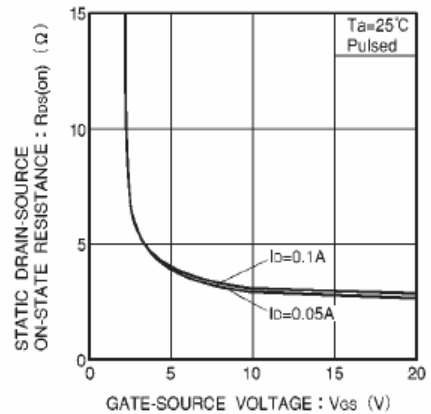


Fig. 6 Static drain-source on-state resistance vs. gate-source voltage

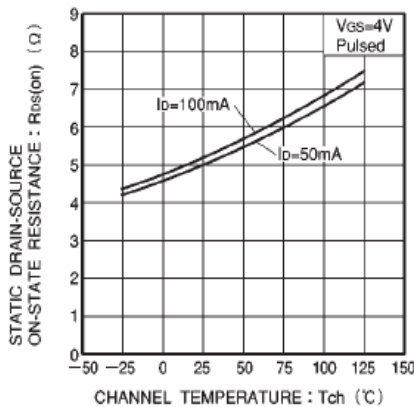


Fig. 7 Static drain-source on-state resistance vs. channel temperature

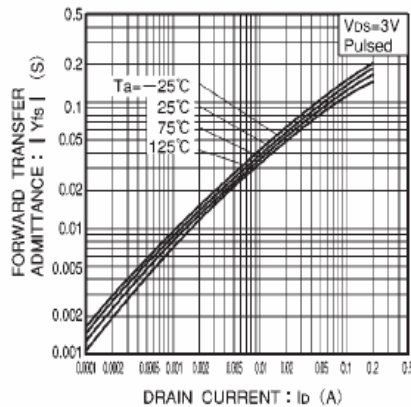


Fig. 8 Forward transfer admittance vs. drain current

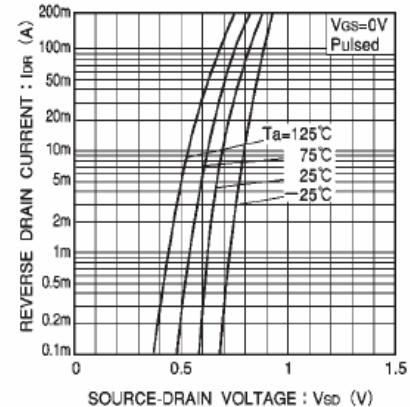


Fig. 9 Reverse drain current vs. source-drain voltage (I)

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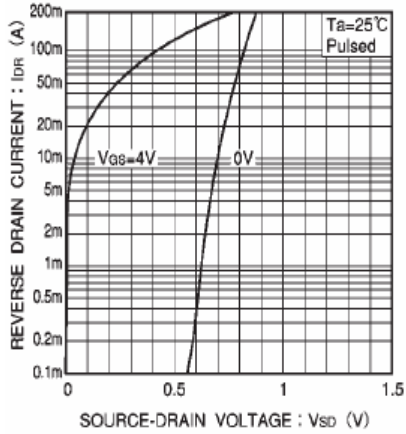


Fig.10 Reverse drain current vs. source-drain voltage (II)

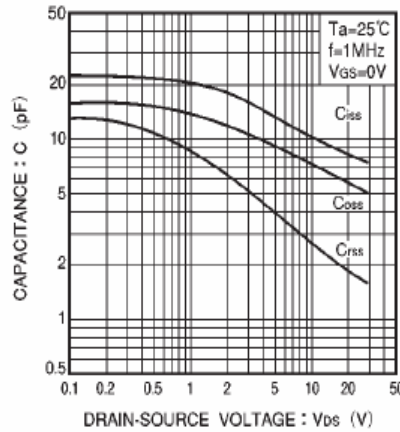


Fig.11 Typical capacitance vs. drain-source voltage

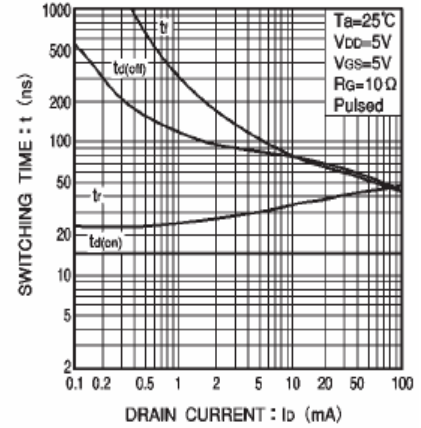


Fig.12 Switching characteristics (See Figures. 13 and 14 for the measurement circuit and resultant waveforms)

Switching characteristics measurement circuit

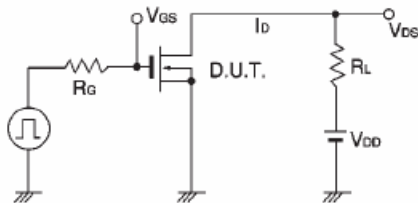


Fig.13 Switching time measurement circuit

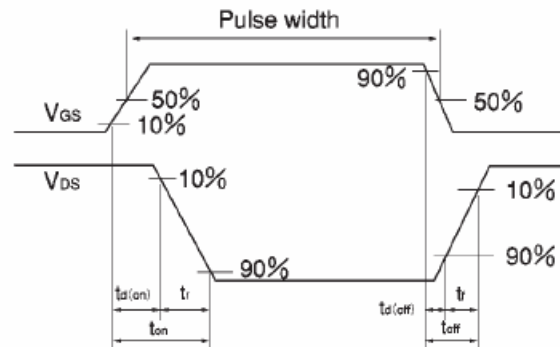


Fig.14 Switching time waveforms

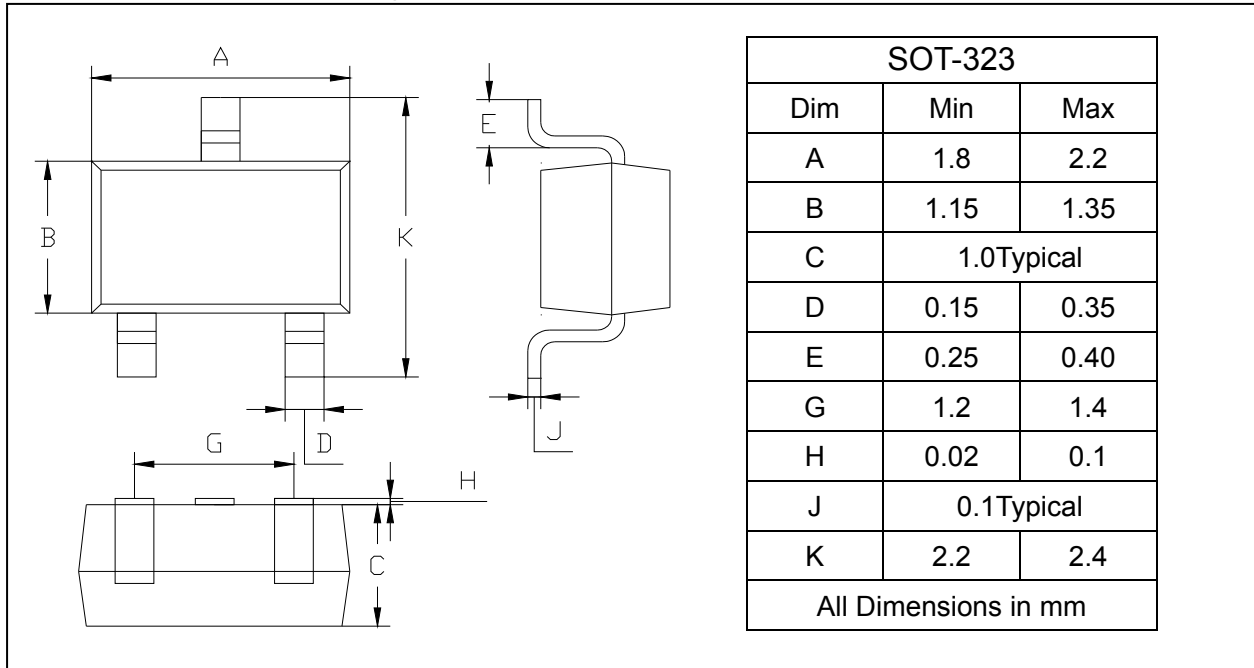
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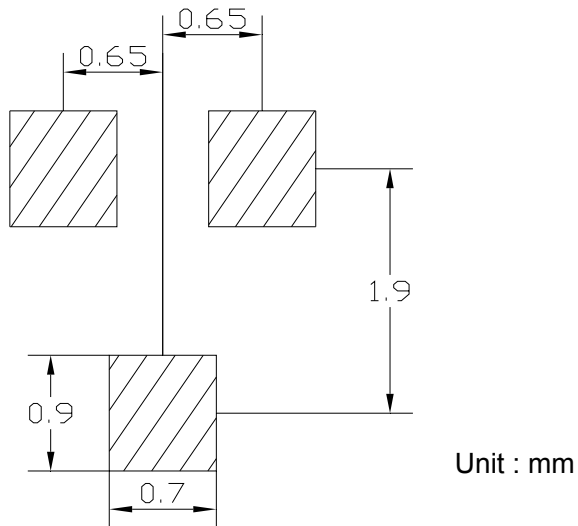
PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
2SK3018	SOT-323	3000/Tape&Reel