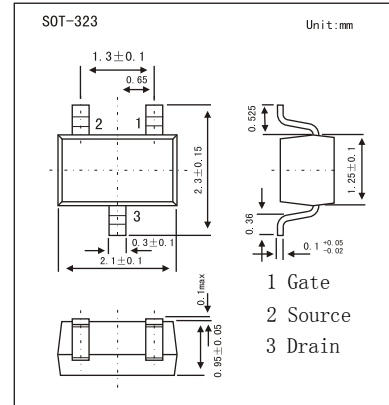
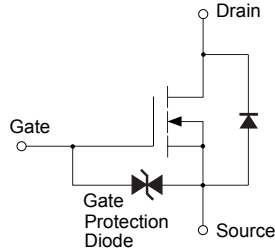


## N-Channel MOSFET

### 2SK3019

#### ■ 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.



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current	$I_D$	$\pm 100$	mA
Continuous Drain Current Pulsed *1	$I_{DP}$	$\pm 400$	
Power Dissipation *2	$P_D$	150	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

\*1  $P_w \leq 10\mu\text{s}$ , Duty cycle  $\leq 1\%$

\*2 With each pin mounted on the recommended lands.

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{DSS}$	$I_D=100\mu\text{A}$ , $V_{GS}=0\text{V}$	30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30\text{V}$ , $V_{GS}=0\text{V}$			1	$\mu\text{A}$
Gate-Body Leakage Current	$I_{GSS}$	$V_{DS}=0\text{V}$ , $V_{GS}=\pm 20\text{V}$			$\pm 1$	$\mu\text{A}$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ , $I_D=100\mu\text{A}$	0.8		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4\text{V}$ , $I_D=10\text{mA}$		5	8	$\Omega$
		$V_{GS}=2.5\text{V}$ , $I_D=1\text{mA}$		7	13	
Forward Transfer admittance	$ Y_{fs} $	$V_{DS}=3\text{V}$ , $I_D=10\text{mA}$	20			mS
Input Capacitance	$C_{iss}$	$V_{GS}=0\text{V}$ , $V_{DS}=5\text{V}$ , $f=1\text{MHz}$		13		pF
Output Capacitance	$C_{oss}$			9		
Reverse Transfer Capacitance	$C_{rss}$			4		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=5\text{V}$ , $V_{DS}=5\text{V}$ , $R_L=500\Omega$ , $R_{GEN}=10\Omega$ $I_D=10\text{mA}$		15		ns
Turn-On Rise Time	$t_r$			35		
Turn-Off Delay Time	$t_{d(off)}$			80		
Turn-Off Fall Time	$t_f$			80		

#### ■ Marking

Marking	KN
---------	----

## N-Channel MOSFET 2SK3019

■ Typical Characteristics

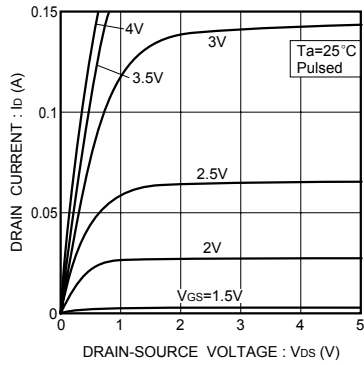


Fig.1 Typical output characteristics

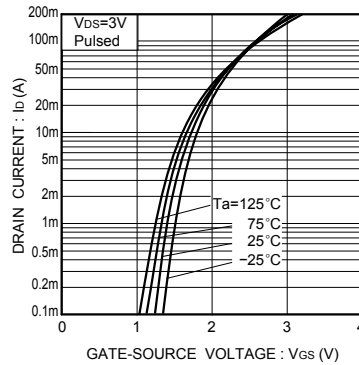


Fig.2 Typical transfer characteristics

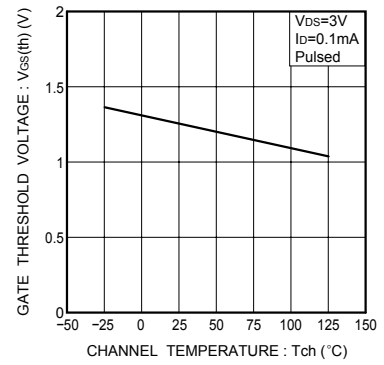


Fig.3 Gate threshold voltage vs. channel temperature

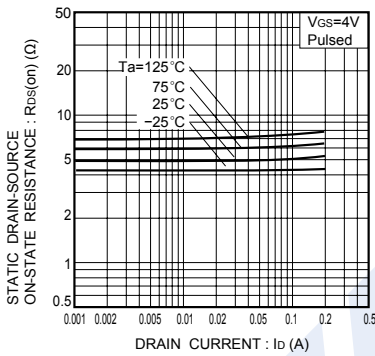


Fig.4 Static drain-source on-state resistance vs. drain current (I)

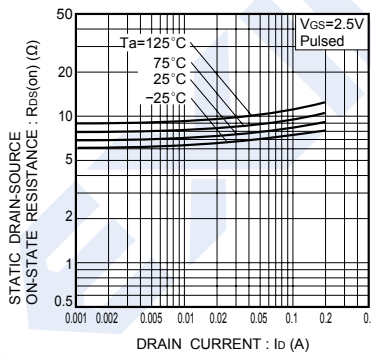


Fig.5 Static drain-source on-state resistance vs. drain current (II)

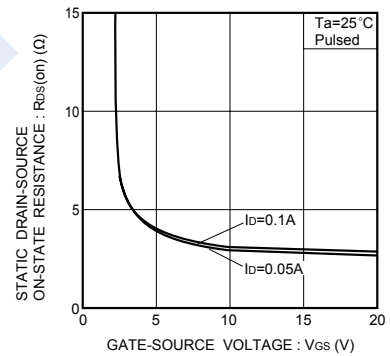


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

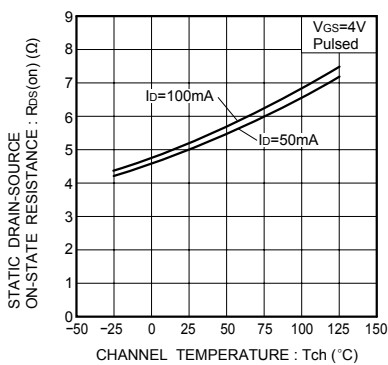


Fig.7 Static drain-source on-state resistance vs. channel temperature

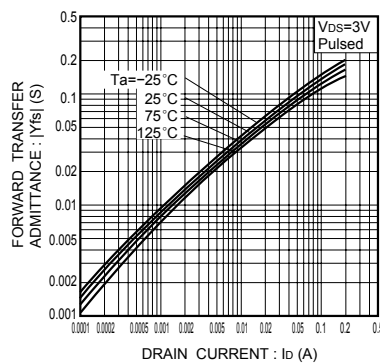


Fig.8 Forward transfer admittance vs. drain current

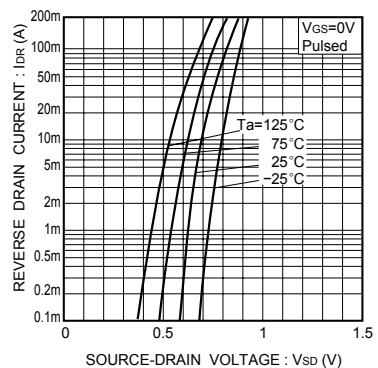


Fig.9 Reverse drain current vs. source-drain voltage (I)

## N-Channel MOSFET

### 2SK3019

#### ■ Typical Characteristics

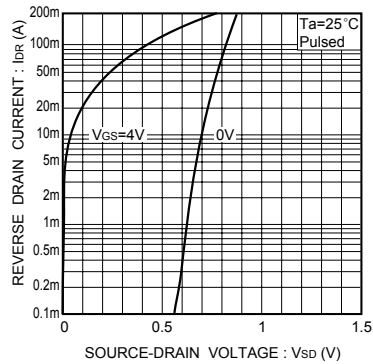


Fig.10 Reverse drain current vs. source-drain voltage (II)

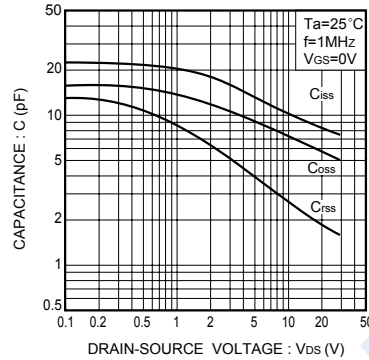


Fig.11 Typical capacitance vs. drain-source voltage

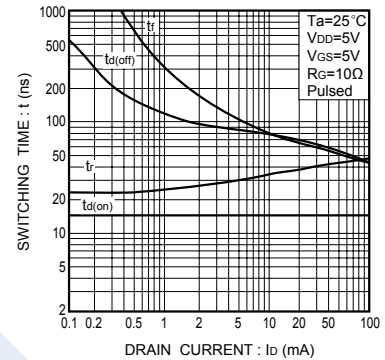


Fig.12 Switching characteristics  
(See Figures 13 and 14 for the measurement circuit and resultant waveforms)