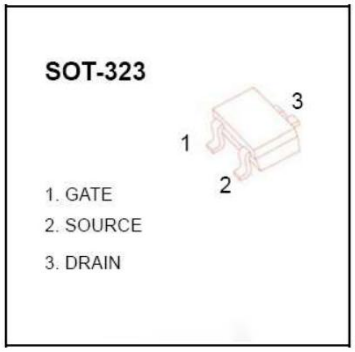
2SK3018W

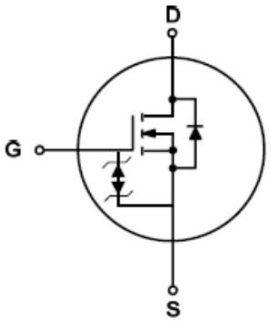
N-Channel MOSFET

BV_{DSS},T_A=25℃	I_D,T_A=25℃	$R_{DS(on)}$,max@4V
30V	0.1A	8Ω

Features

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for portable equipment
- Easily designed drive circuits
- Easy to parallel
- ESD Protect





Marking:KN

Absolute Maximum Ratings(T_C=25℃,unless otherwise noted.)

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	30	V
Gate-source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	0.1	A
Maximum Power Dissipation	P_D	0.2	W
Operating Junction Temperature Range	T_J	-55~150	℃
Storage Temperature Range	T_{STG}	-55~150	℃

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction to ambient, Max.	$R_{\theta JA}$	625	℃/W

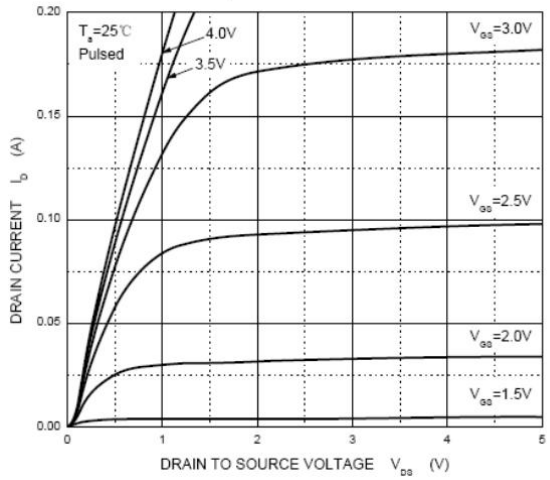
Electrical Characteristics(T_A=25℃,unless otherwise noted.)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source Breakdown voltage	BV_{DSS}	V_{GS}=0V, I_D=10μA	30			V
Drain-to-Source Leakage Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			0.2	μA
Gate-source leakage current	I_{GSS}	V_{GS}=+20V, V_{DS}=0V,			+10	μA
		V_{GS}=-20V, V_{DS}=0V,			-10	μA
Gate Threshold voltage	$V_{GS(th)}$	V_{DS}=3V, I_D=100μA	0.8		1.5	V
Static Drain to Source on resistance	$R_{DS(on)}$	V_{GS}=4V, I_D=10mA			8	Ω
		V_{GS}= 2.5V, I_D=1mA			13	Ω
Forward transconductance	g_{fs}	V_{DS}= 3V, I_D=10mA	20			mS

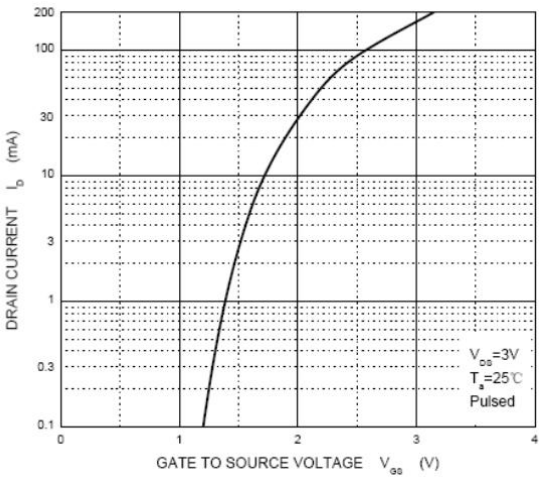
Dynamic Characteristics						
Input Capacitance	Ciss	V_{DS}=5V,V_{GS}=0V, f=1MHz		13		pF
Output Capacitance	Coss			9		pF
Reverse Capacitance	Crss			4		pF
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	V_{DD}=5V,V_{GS}=5V,I_D=10mA, R_G=10Ω,R_L=500Ω		15		nS
Turn-On Rise Time	t_r			35		nS
Turn-Off Delay Time	$t_{d(off)}$			80		nS
Turn-Off Fall Time	t_f			80		nS
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_D=100mA			1.1	V

Typical Characteristics

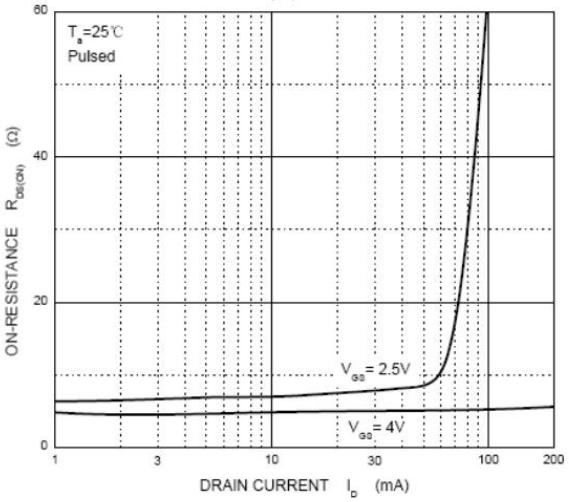
Output Characteristics



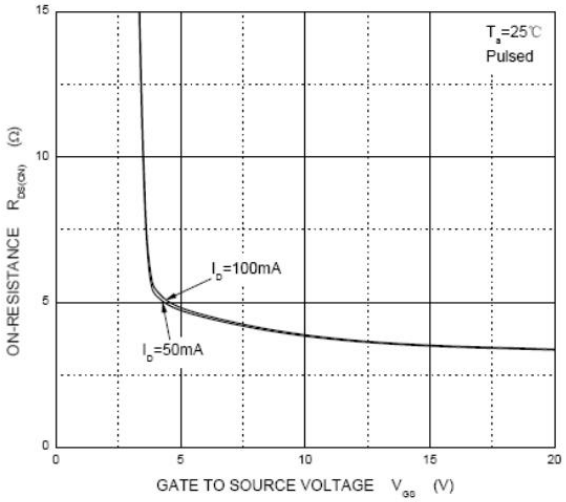
Transfer Characteristics



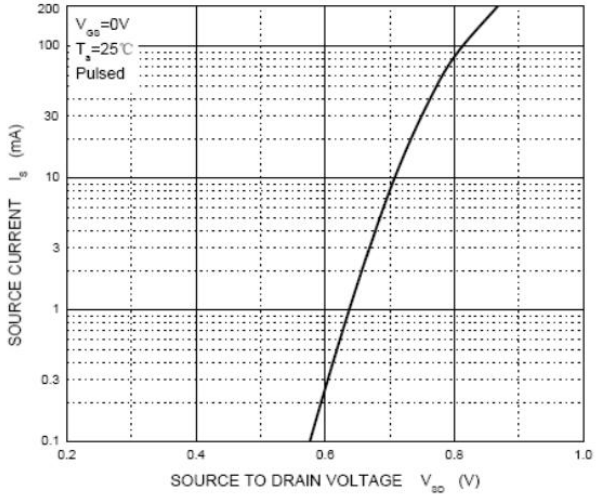
$R_{DS(ON)}$ —— I_D



$R_{DS(ON)}$ —— V_{GS}



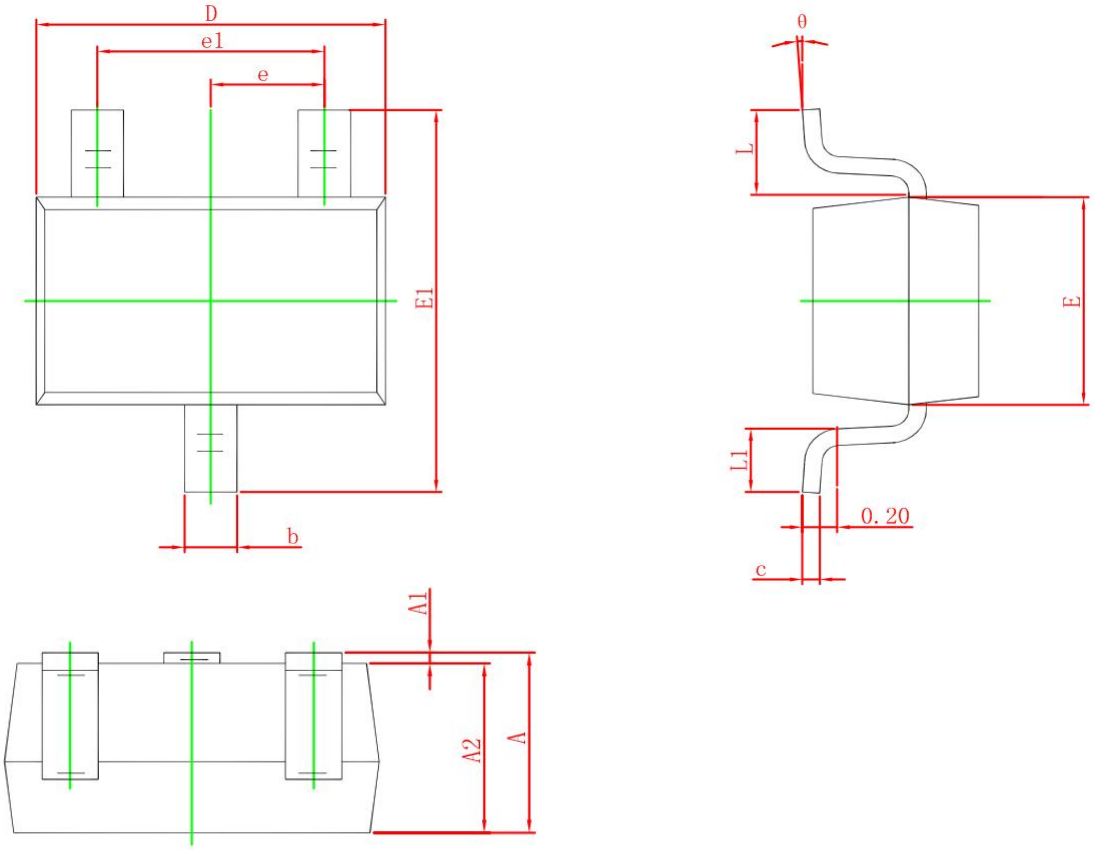
I_S —— V_{SD}



Package Information

SOT-323

Dimensions in mm



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP.		0.026 TYP.	
e1	1.200	1.400	0.047	0.055
L	0.525 REF.		0.021 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°