

SOT-23 Plastic-Encapsulate MOSFETS

2SK3018 N-channel MOSFET

FEATURES

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

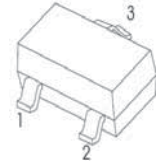
Marking Code: KN

MOSFET MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

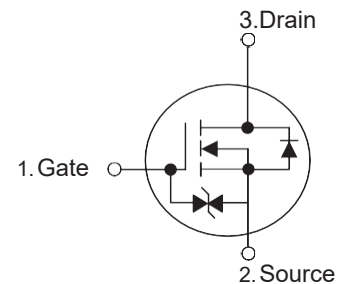
Symbol	Parameter	Value	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GSS}	Gate-Source Voltage	+20	V
		-12	V
I_D	Continuous Drain Current	0.1	A
P_D	Power Dissipation	0.35	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	357	$^\circ\text{C/W}$

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1. GATE
2. SOURCE
3. DRAIN



Equivalent circuit



MOSFET ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

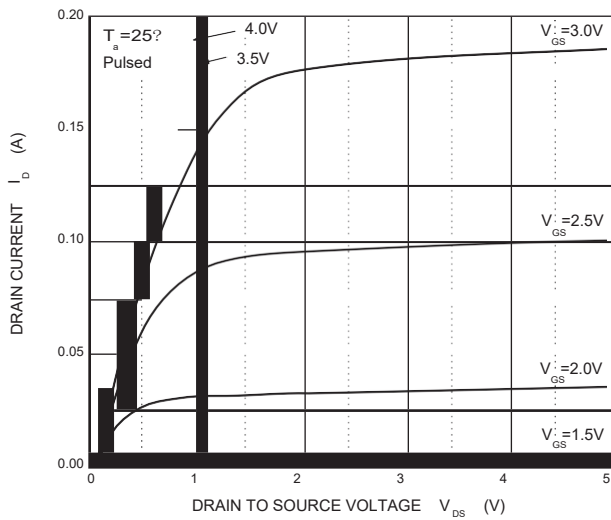
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} = 0V, I _D = 10μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} = 0V			0.2	μA
Gate –Source leakage current	I _{GSS}	V _{GS} =+20V, V _{DS} = 0V			1	μA
		V _{GS} =-12V, V _{DS} = 0V			-1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = 3V, I _D =100μA	0.8		1.5	V
Drain-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	C _{iss}	V _{DS} =5V, V _{GS} =0V, f =1MHz		13		pF
Output Capacitance	C _{oss}			9		pF
Reverse Transfer Capacitance	C _{rss}			4		pF
Switching Characteristics*						
Turn-On Delay Time	t _{d(on)}	V _{GS} =5V, V _{DD} =5V, I _D =10mA, R _g =10Ω, R _L =500Ω,		15		ns
Rise Time	t _r			35		ns
Turn-Off Delay Time	t _{d(off)}			80		ns
Fall Time	t _f			80		ns

* These parameters have no way to verify.

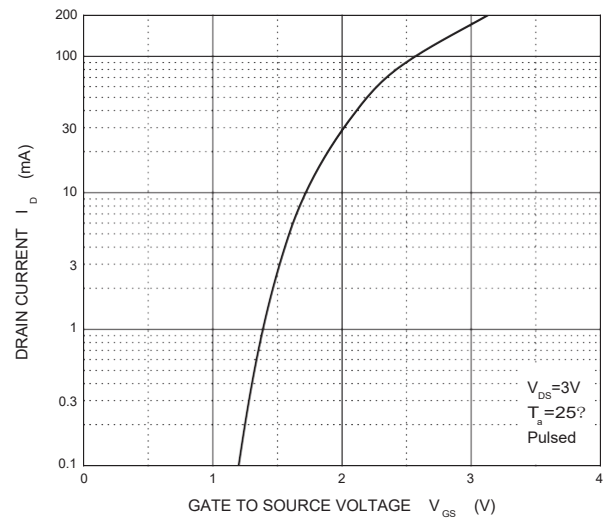
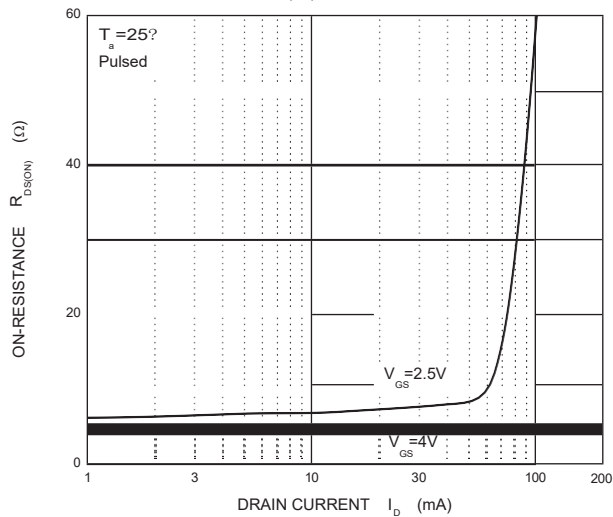
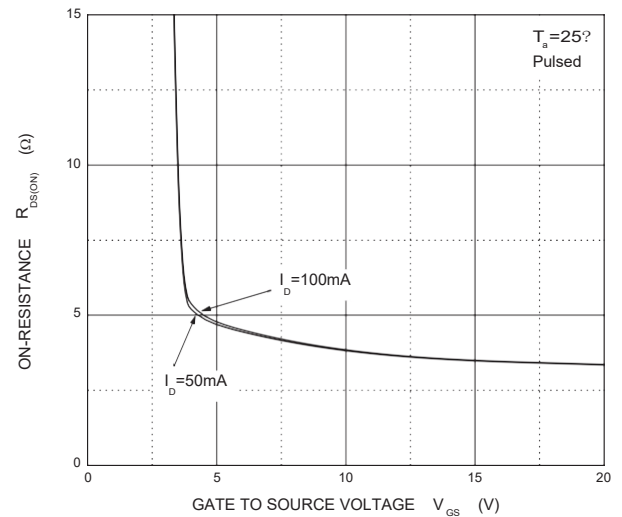
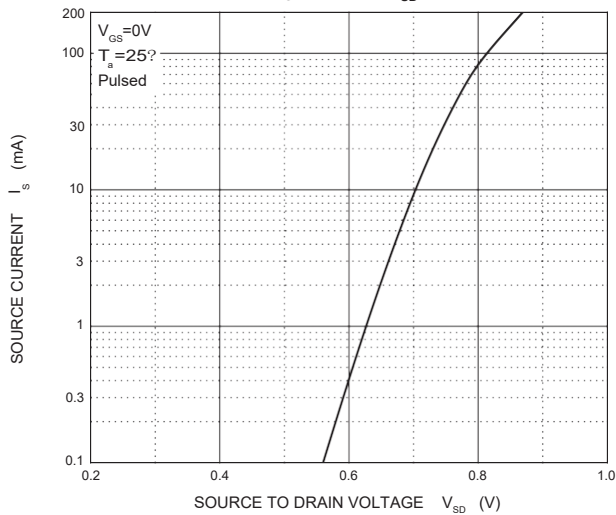
Typical Characteristics

2SK3018

Output Characteristics



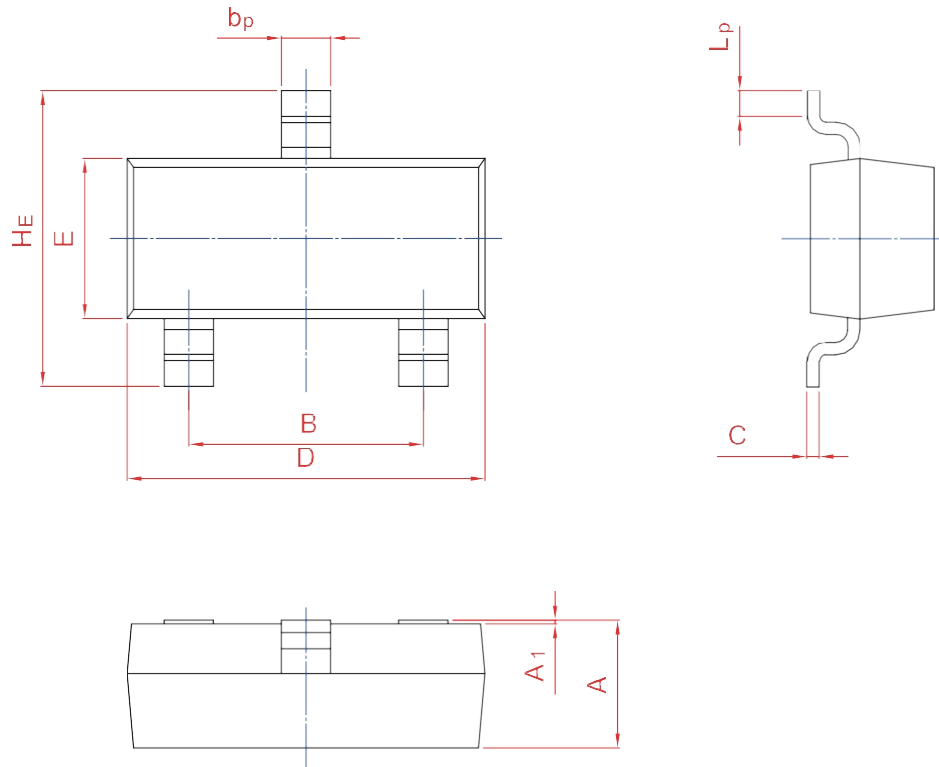
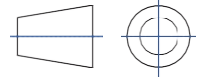
Transfer Characteristics

 $R_{DS(ON)}$ — I_D  $R_{DS(ON)}$ — V_{GS}  I_S — V_{SD} 

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

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UNIT	A	B	b_p	C	D	E	H_E	A_1	L_p
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20