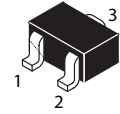
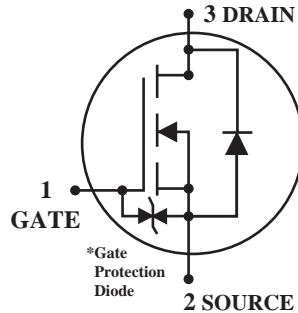


N-Channel POWER MOSFET

(Pb) Lead(Pb)-Free



SOT-323(SC-70)

Description:

- * 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.

Features:

- * Simple Drive Requirement
- * Small Package Outline

Maximum Ratings (T_A=25°C Unless Otherwise Specified)

Rating	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current T _A =25°C	I _D	100	mA
Pulsed Drain Current (tp ≤ 10μs)	I _{DM}	400	mA
Power Dissipation (T _A =25°C)*	P _D	200	mW
Operating Junction Temperature Range	T _J	+150	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

* With each pin mounted on the recommended lands.

Device Marking

2SK3018 = KN

Electrical Characteristics (T_A=25°C Unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Static					
Drain-Source Breakdown Voltage V _{GS} =0V, I _D =10μA	V _{(BR)DSS}	30	-	-	V
Gate-Threshold Voltage V _{DS} =3V, I _D =100μA	V _{GS(th)}	0.8	-	1.5	V
Gate-Source Leakage Current V _{GS} =±20V	I _{GSS}	-	-	±1.0	μA
Drain-Source Leakage Current V _{DS} =30V, V _{GS} =0	I _{DSS}	-	-	1.0	μA
Static Drain-Source On-Resistance V _{GS} =4V, I _D =10mA V _{GS} =2.5V, I _D =1mA	R _{DS(on)}	- -	5.0 7.0	8.0 13	Ω
Forward Transconductance V _{DS} =3V, I _D =10mA	g _{fs}	20	-	-	mS

Dynamic

Input Capacitance V _{DS} =5V, V _{GS} =0V, f=1.0MHz	C _{iss}	-	13	-	pF
Output Capacitance V _{DS} =5V, V _{GS} =0V, f=1.0MHz	C _{oss}	-	9	-	
Reverse Transfer Capacitance V _{DS} =5V, V _{GS} =0V, f=1.0MHz	C _{rss}	-	4	-	

Switching

Turn-On Time V _{GS} =5V, I _D =10mA, R _L =500Ω, R _G =10Ω	t _{d(on)}	-	15	-	ns
Rise time V _{GS} =5V, I _D =10mA, R _L =500Ω, R _G =10Ω	t _r	-	35	-	
Turn-Off delay Time V _{GS} =5V, I _D =10mA, R _L =500Ω, R _G =10Ω	t _{d(off)}	-	80	-	
Fall time V _{GS} =5V, I _D =10mA, R _L =500Ω, R _G =10Ω	t _f	-	80	-	

TYPICAL ELECTRICAL CHARACTERISTICS

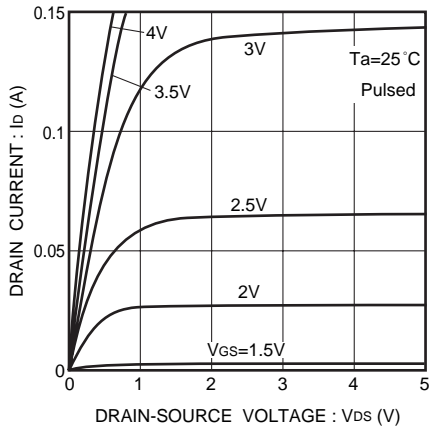


Fig.1 Typical output characteristics

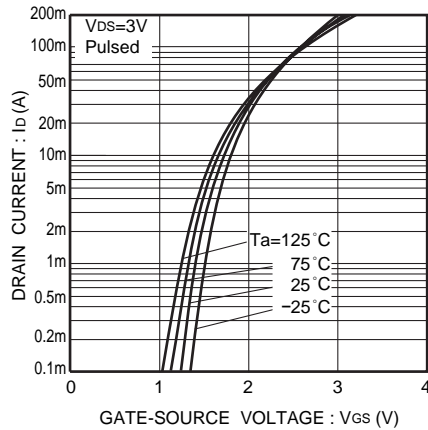


Fig.2 Typical transfer characteristics

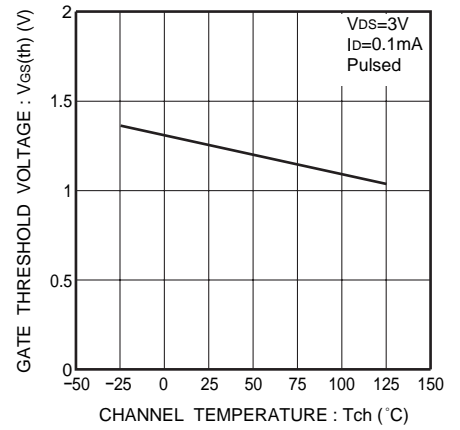


Fig.3 Gate threshold voltage vs. channel temperature

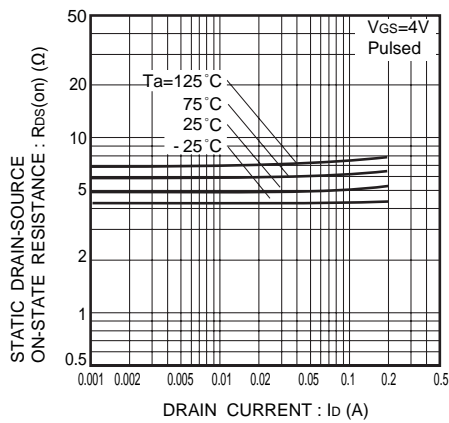


Fig.4 Static drain-source on-state resistance vs. drain current (I)

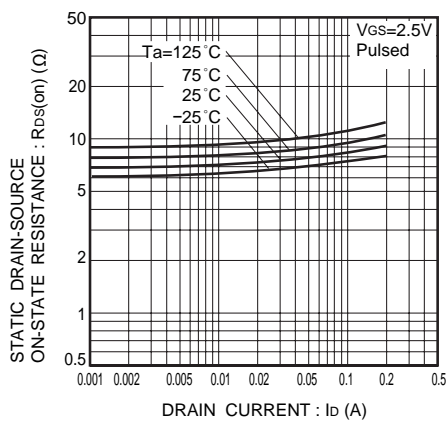


Fig.5 Static drain-source on-state resistance vs. drain current (II)

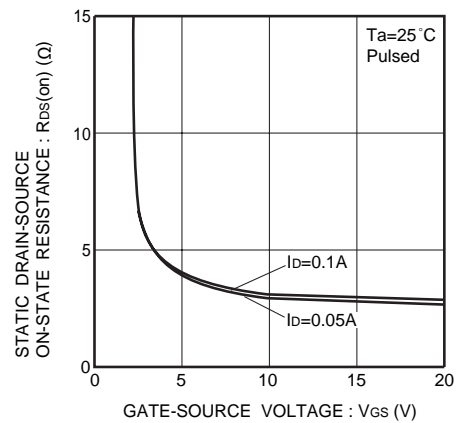


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

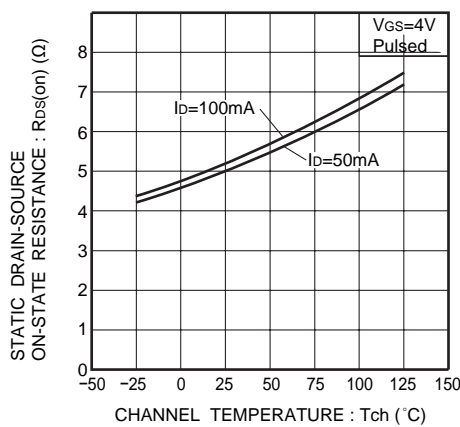


Fig.7 Static drain-source on-state resistance vs. channel temperature

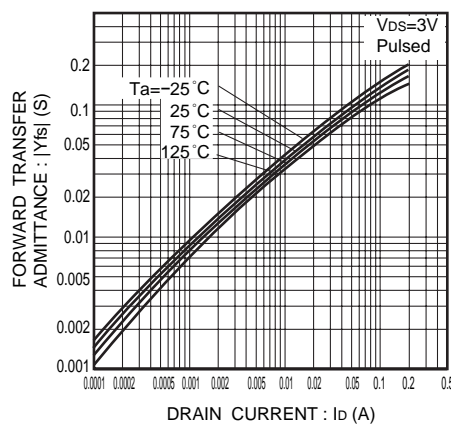


Fig.8 Forward transfer admittance vs. drain current

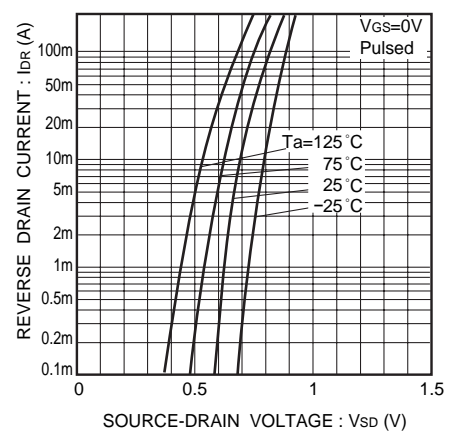


Fig.9 Reverse drain current vs. source-drain voltage (I)

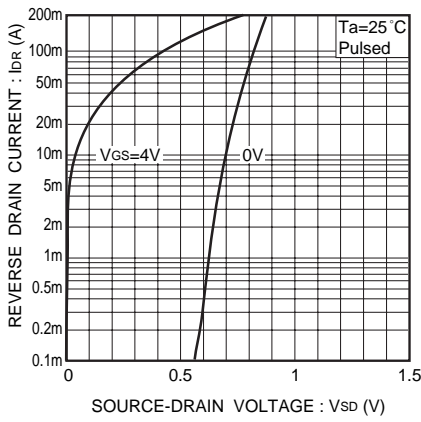


Fig.10 Reverse drain current vs. source-drain voltage (II)

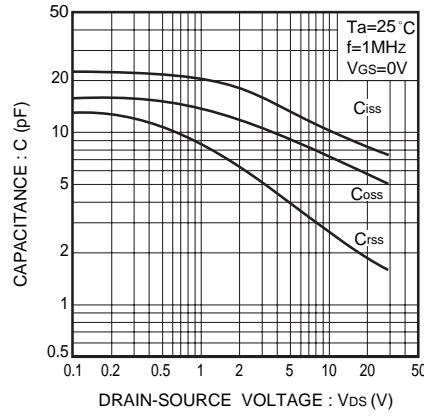


Fig.11 Typical capacitance vs. drain-source voltage

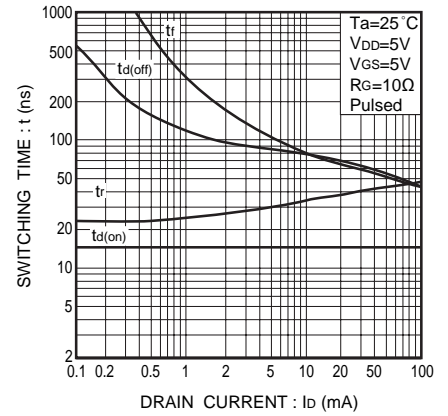


Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)

Switching characteristics measurement circuit

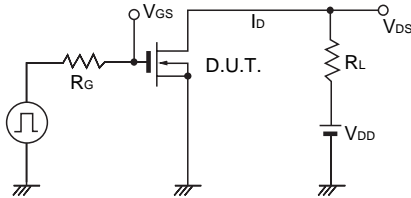


Fig.13 Switching time measurement circuit

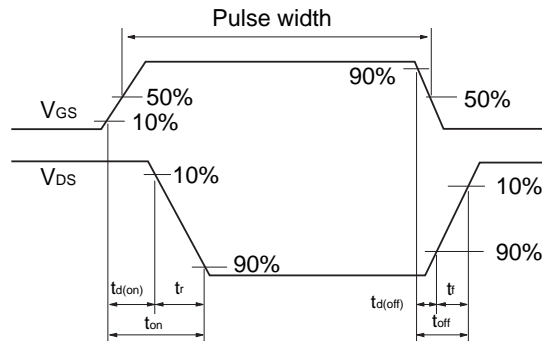
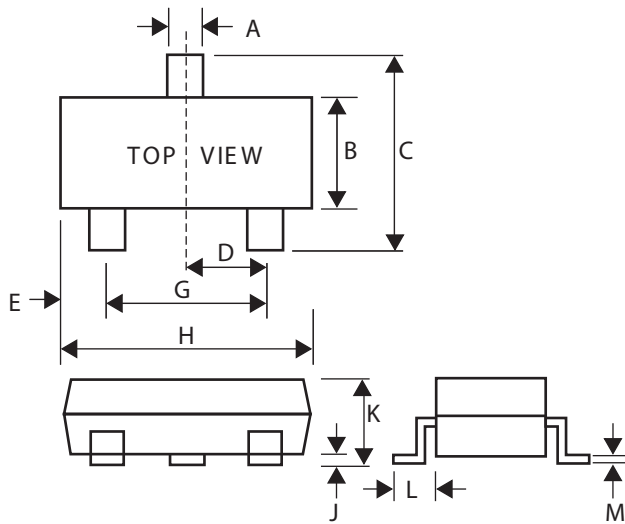


Fig.14 Switching time waveforms

SOT-323 Outline Demensions

Unit:mm



SOT-323		
Dim	Min	Max
A	0.30	0.40
B	1.15	1.35
C	2.00	2.40
D	-	0.65
E	0.30	0.40
G	1.20	1.40
H	1.80	2.20
J	0.00	0.10
K	0.80	1.00
L	0.42	0.53
M	0.10	0.25