

FEATURES

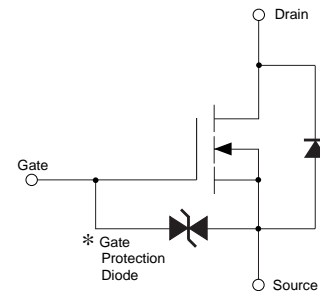
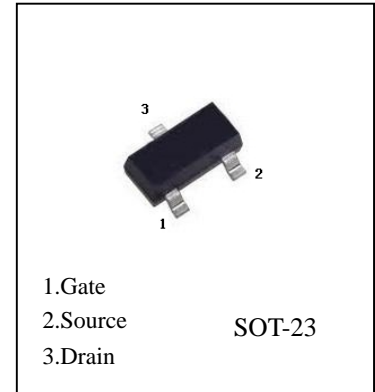
- Fast switching speed and low on-resistance.
- Easily designed driven circuits.

Absolute Maximum Ratings (TA=25°C, unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DS}	30	V
Gate-source Voltage	V _{GS}	±20	V
Drain Current (Continuous)	I _D	100	mA
Drain Current (Pulsed)	I _{DM}	10	A
Total Power Dissipation @TA=25°C	PD	200	mW
Operating Junction and Storage Temperature Range	T _j , T _{stg}	-55 to +150	°C
Thermal Resistance Junction to Ambient (PCB mounted)	R _{θJA}	625	°C/W

2SK3018

N-Channel MOSFET



Electrical Characteristics (TA=25°C, unless otherwise noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I _{GSS}	–	–	±1	μA	V _{GS} = ±20V, V _{DS} = 0V
Drain-source breakdown voltage	V _{(BR)DSS}	30	–	–	V	I _D = 10μA, V _{GS} = 0V
Zero gate voltage drain current	I _{DSS}	–	–	1	μA	V _{DS} = 30V, V _{GS} = 0V
Gate threshold voltage	V _{GS(th)}	0.8	–	1.5	V	V _{DS} = 3V, I _D = 100μA
Static drain-source on-state resistance	R _{DS(on)}	–	5	8	Ω	I _D = 10mA, V _{GS} = 4V
	R _{DS(on)}	–	7	13	Ω	I _D = 1mA, V _{GS} = 2.5V
Forward transfer admittance	Y _{fs}	20	–	–	mS	V _{DS} = 3V, I _D = 10mA
Input capacitance	C _{iss}	–	13	–	pF	V _{DS} = 5V
Output capacitance	C _{oss}	–	9	–	pF	V _{GS} = 0V
Reverse transfer capacitance	C _{rss}	–	4	–	pF	f = 1MHz
Turn-on delay time	t _{d(on)}	–	15	–	ns	I _D = 10mA, V _{DD} ≐ 5V
Rise time	t _r	–	35	–	ns	V _{GS} = 5V
Turn-off delay time	t _{d(off)}	–	80	–	ns	R _L = 500Ω
Fall time	t _f	–	80	–	ns	R _G = 10Ω

2SK3018 Typical Characteristics

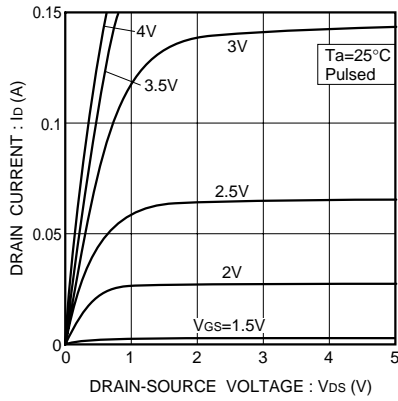


Fig.1 Typical output characteristics

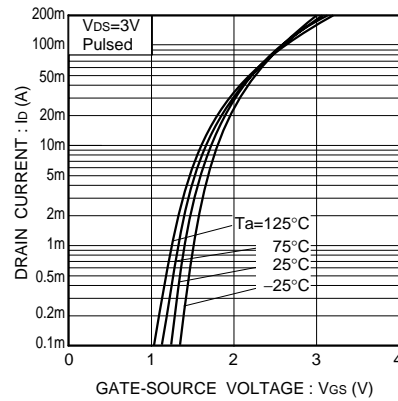


Fig.2 Typical transfer characteristics

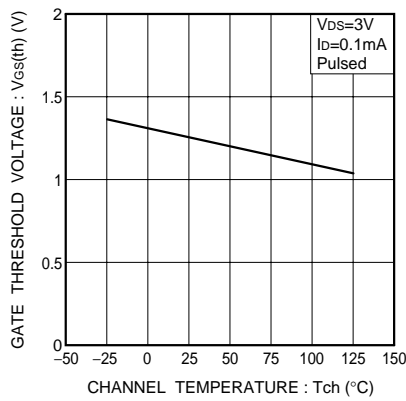


Fig.3 Gate threshold voltage vs. channel temperature

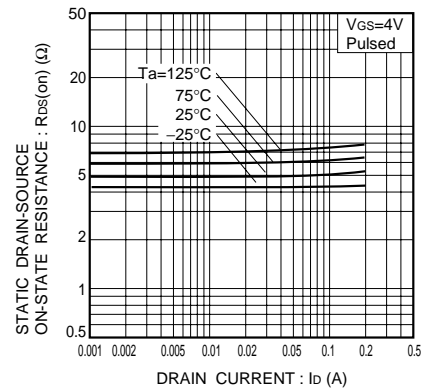


Fig.4 Static drain-source on-state resistance vs. drain current (I)

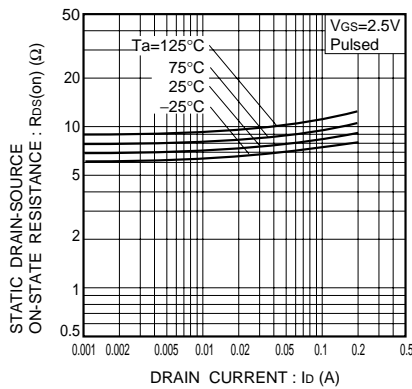


Fig.5 Static drain-source on-state resistance vs. drain current (II)

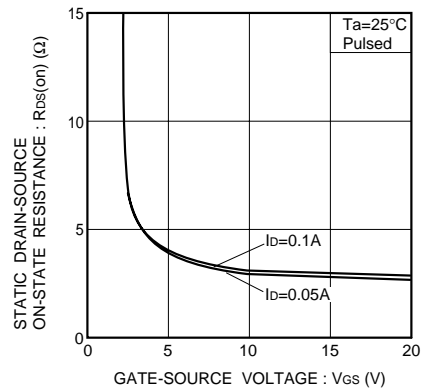


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

2SK3018 Typical Characteristics

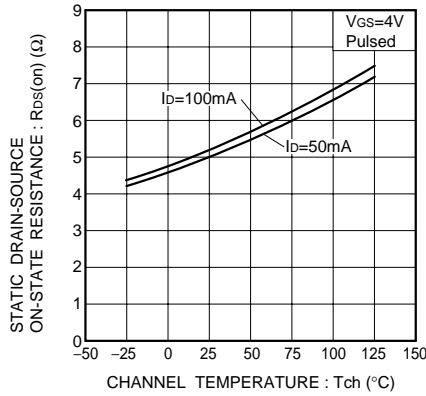


Fig.7 Static drain-source on-state resistance vs. channel temperature

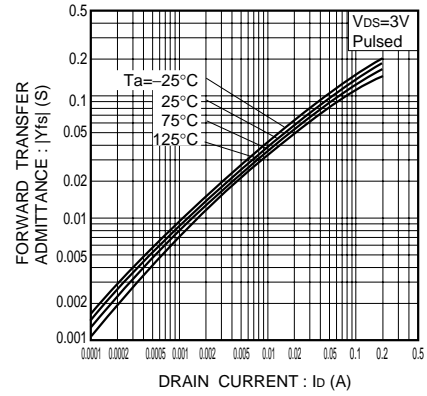


Fig.8 Forward transfer admittance vs. drain current

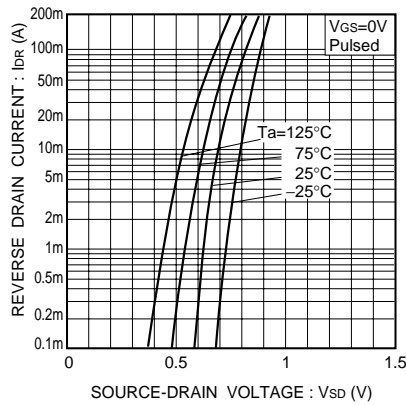


Fig.9 Reverse drain current vs. source-drain voltage (I)

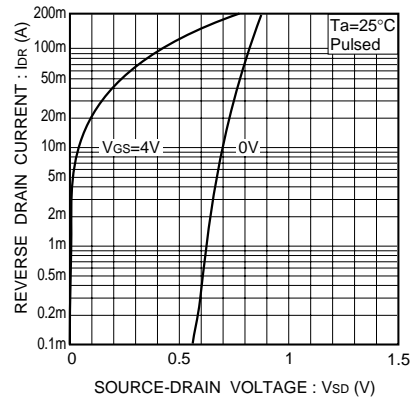


Fig.10 Reverse drain current vs. source-drain voltage (II)

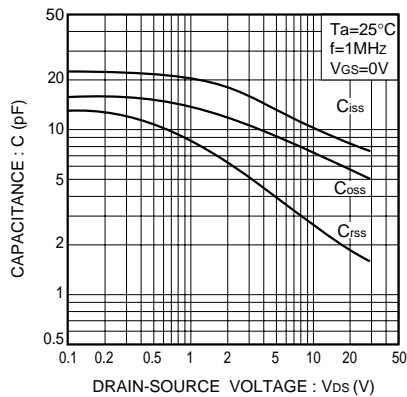


Fig.11 Typical capacitance vs. drain-source voltage

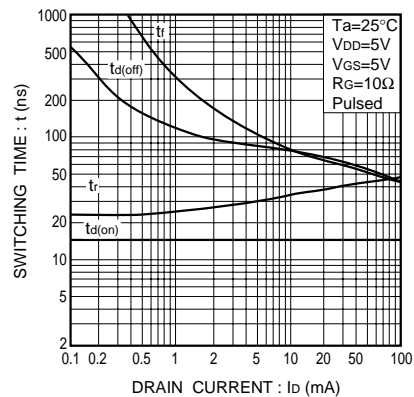


Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)