

## FEATURES

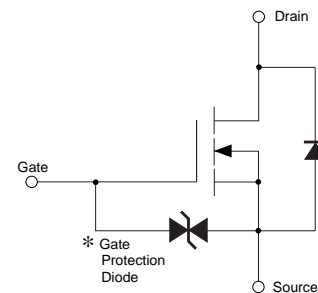
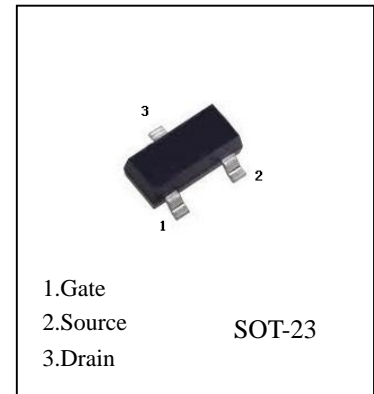
- Fast switching speed and low on-resistance.
- Easily designed driven circuits.

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V <sub>DS</sub>	30	V
Gate-source Voltage	V <sub>GS</sub>	±20	V
Drain Current (Continuous)	I <sub>D</sub>	100	mA
Drain Current (Pulsed)	I <sub>DM</sub>	400	mA
Total Power Dissipation @TA=25°C	PD	350	mW
Operating Junction and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-55 to +150	°C
Thermal Resistance Junction to Ambient (PCB mounted)	R <sub>θJA</sub>	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 <sub>GSS</sub>	–	–	±2	μA	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	30	–	–	V	I <sub>D</sub> = 10μA, V <sub>GS</sub> = 0V
Zero gate voltage drain current	I <sub>DSS</sub>	–	–	1	μA	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V
Gate threshold voltage	V <sub>GS(th)</sub>	0.8	–	1.5	V	V <sub>DS</sub> = 3V, I <sub>D</sub> = 100μA
Static drain-source on-state resistance	R <sub>DS(on)</sub>	–	5	8	Ω	I <sub>D</sub> = 10mA, V <sub>GS</sub> = 4V
	R <sub>DS(on)</sub>	–	7	13	Ω	I <sub>D</sub> = 1mA, V <sub>GS</sub> = 2.5V
Forward transfer admittance	G <sub>fs</sub>	20	–	–	mS	V <sub>DS</sub> = 3V, I <sub>D</sub> = 10mA
Input capacitance	C <sub>iss</sub>	–	13	–	pF	V <sub>DS</sub> = 5V
Output capacitance	C <sub>oss</sub>	–	9	–	pF	V <sub>GS</sub> = 0V
Reverse transfer capacitance	C <sub>rss</sub>	–	4	–	pF	f = 1MHz
Turn-on delay time	t <sub>d(on)</sub>	–	15	–	ns	I <sub>D</sub> = 10mA, V <sub>DD</sub> ≐ 5V
Rise time	t <sub>r</sub>	–	35	–	ns	V <sub>GS</sub> = 5V
Turn-off delay time	t <sub>d(off)</sub>	–	80	–	ns	R <sub>L</sub> = 500Ω
Fall time	t <sub>f</sub>	–	80	–	ns	R <sub>G</sub> = 10Ω

**2SK3018** Typical Characteristics

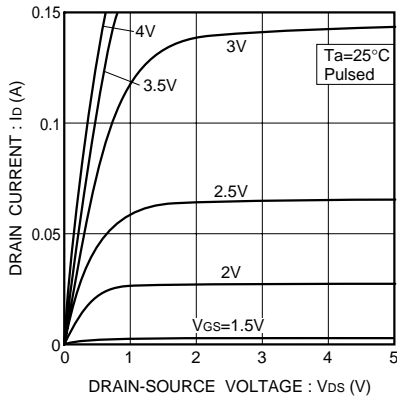


Fig.1 Typical output characteristics

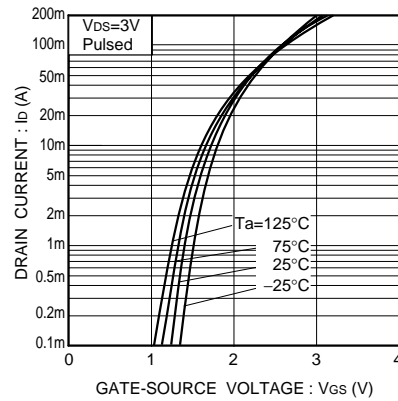


Fig.2 Typical transfer characteristics

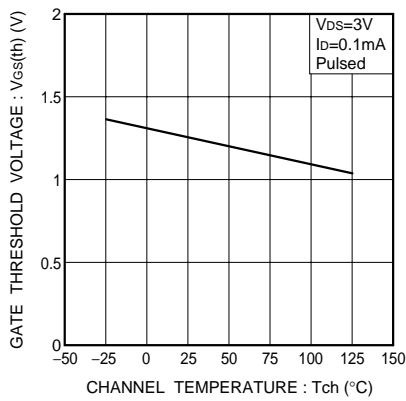


Fig.3 Gate threshold voltage vs. channel temperature

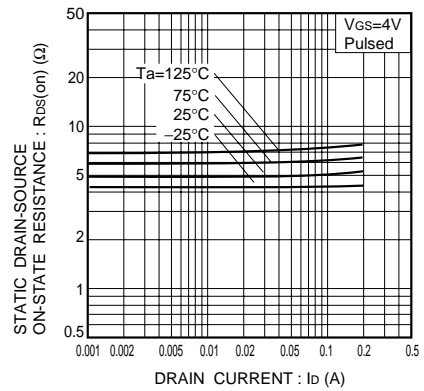


Fig.4 Static drain-source on-state resistance vs. drain current ( I )

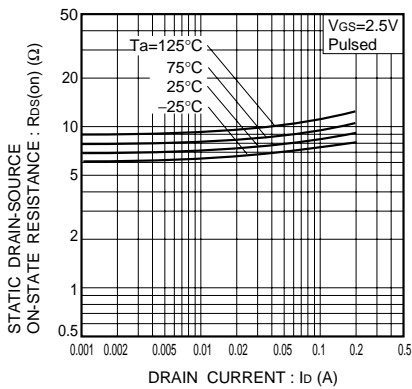


Fig.5 Static drain-source on-state resistance vs. drain current (II)

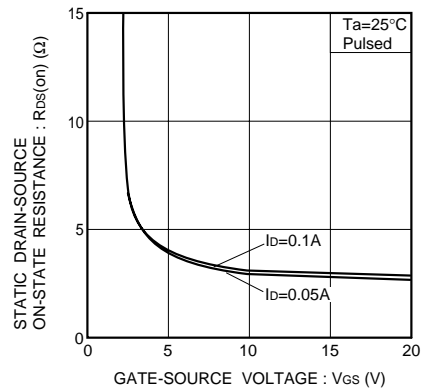


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

2SK3018 Typical Characteristics

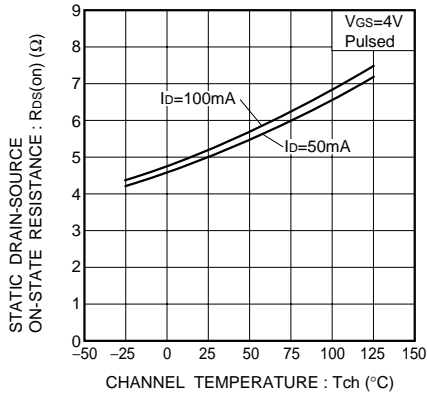


Fig.7 Static drain-source on-state resistance vs. channel temperature

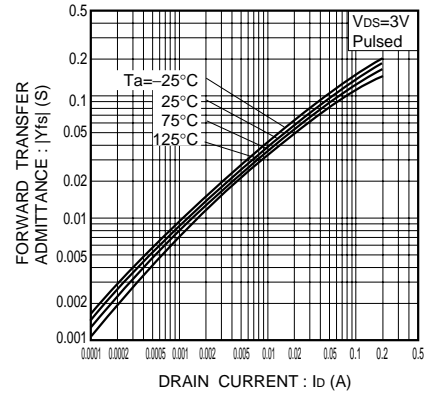


Fig.8 Forward transfer admittance vs. drain current

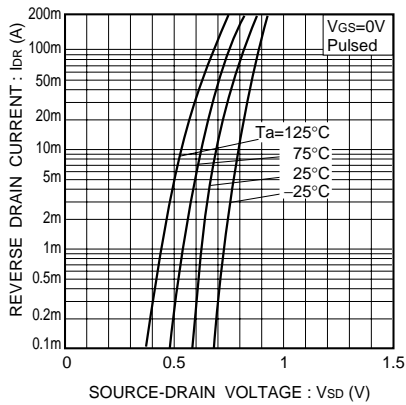


Fig.9 Reverse drain current vs. source-drain voltage (I)

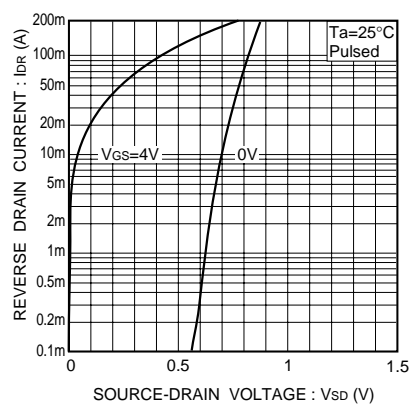


Fig.10 Reverse drain current vs. source-drain voltage (II)

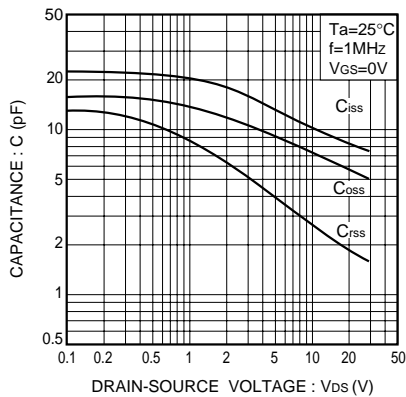


Fig.11 Typical capacitance vs. drain-source voltage

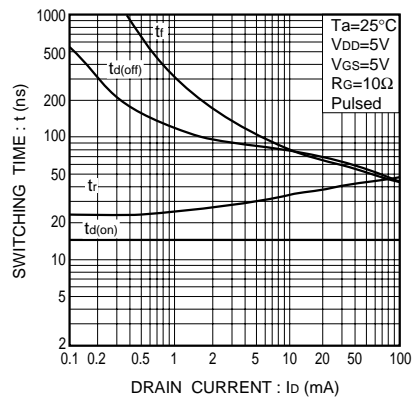


Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)