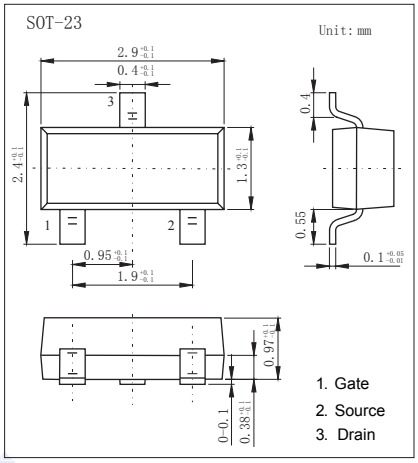
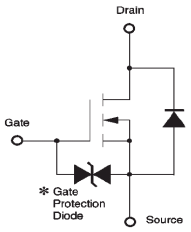
N-Channel MOSFET

2SK2731



■ Features

- V_{DS} (V) = 30V
- I_D = 0.2 A
- $R_{DS(ON)}$ < 2.8Ω (V_{GS} = 10V)
- $R_{DS(ON)}$ < 4.5Ω (V_{GS} = 4V)



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	0.2	A
Pulsed Drain Current (Note.1)	I_{DM}	0.8	
Reverse Continuous Drain Current	I_{DR}	0.2	
Reverse Pulsded Drain Current (Note.1)	I_{DMR}	0.8	
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: PW ≤ 10us, Duty Cycle ≤ 1%

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			10	uA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±10	uA
Gate Cutt-off Voltage	$V_{GS(off)}$	V_{DS}=10V , I_D=1mA	1		2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=0.1A			2.8	Ω
		V_{GS}=4V, I_D=0.1A			4.5	
Forward Transconductance	g_{FS}	V_{DS}=10V, I_D=0.1A	100			mS
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=10V, f=1MHz		25		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			10		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=10V, V_{DS}=15V, I_D=0.1A, R_L=150Ω, R_G=10Ω		15		ns
Turn-On Rise Time	t_r			20		
Turn-Off DelayTime	$t_{d(off)}$			90		
Turn-Off Fall Time	t_f			100		

■ Marking

Marking	KL

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■ Typical Characterisitics

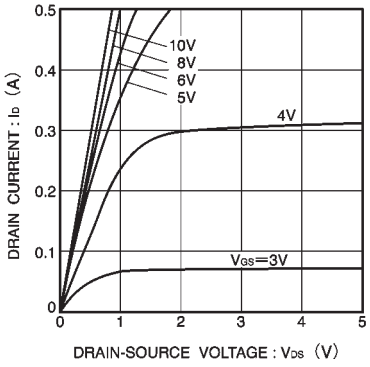

Fig.1 Typical output characteristics

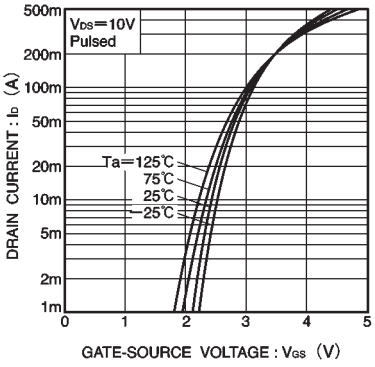

Fig.2 Typical transfer characteristics

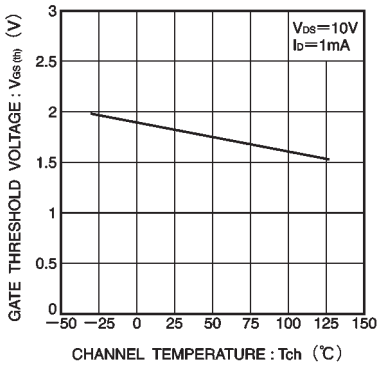

Fig.3 Gate threshold voltage vs. channel temperature

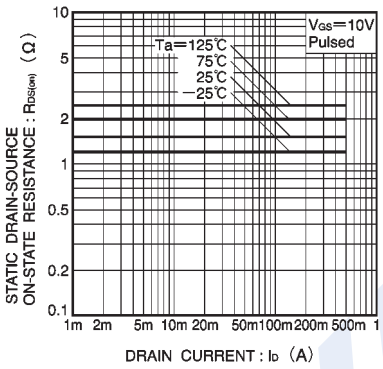

Fig.4 Static drain-source on-state resistance vs. drain current (Ⅰ)

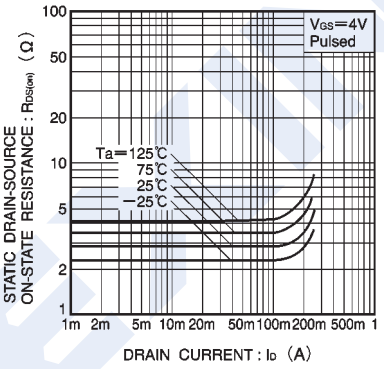

Fig.5 Static drain-source on-state resistance vs. drain current (Ⅱ)

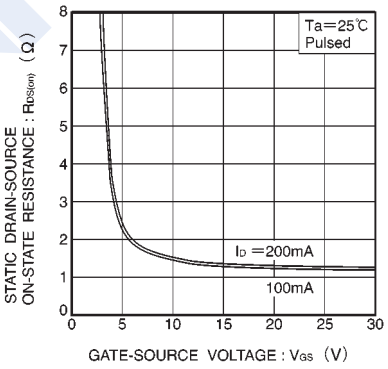

Fig.6 Static drain-source on-state resistance vs. gate-source voltage

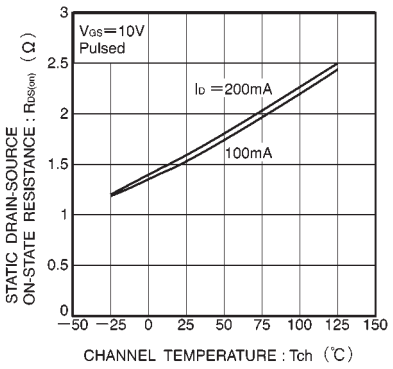

Fig.7 Static drain-source on-state resistance vs. channel temperature

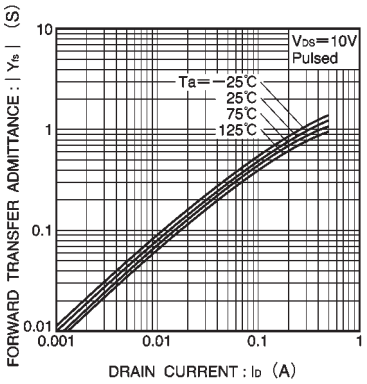

Fig.8 Forward transfer admittance vs. drain current

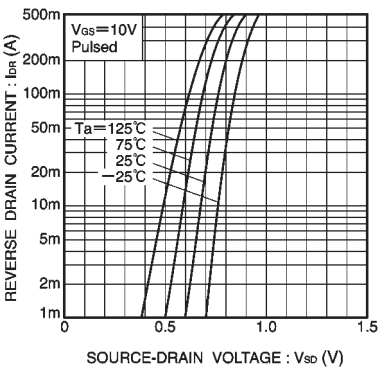

Fig.9 Reverse drain current vs. source-drain voltage (Ⅰ)

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■ Typical Characterisitics

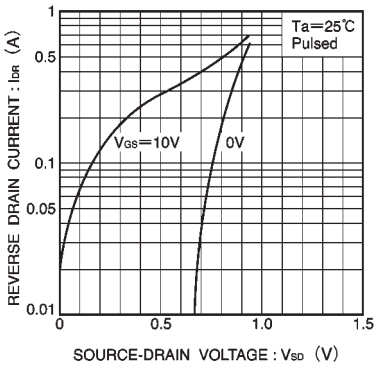

Fig.10 Reverse drain current vs. source-drain voltage (Ⅱ)

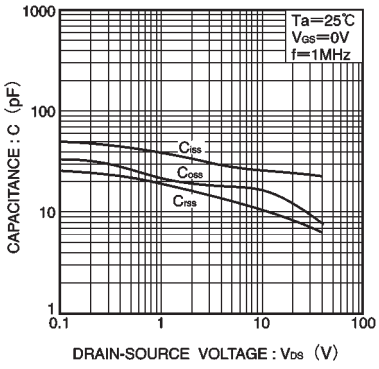

Fig.11 Typical capacitance vs. drain-source voltage

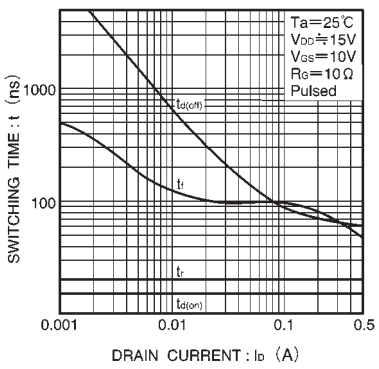

Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)

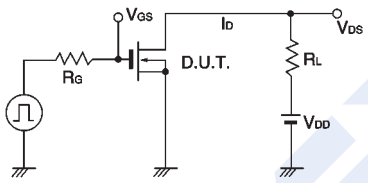

Fig.13 Switching time measurement circuit

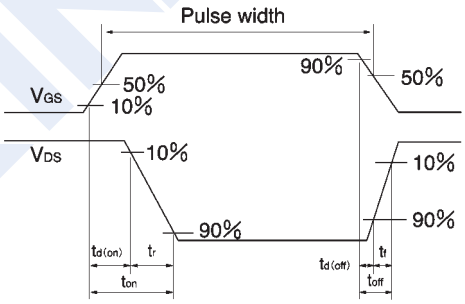

Fig.14 Switching time waveforms