

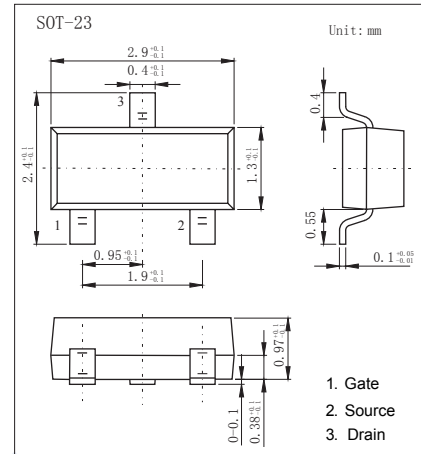
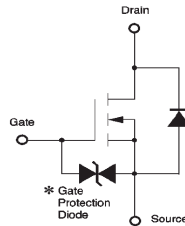
N-Channel MOSFET

2SK2731-HF

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 0.2 A$
- $R_{DS(ON)} < 2.8 \Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 4.5 \Omega$ ($V_{GS} = 4V$)
- Pb-Free Package May be Available.

The G-Suffix Denotes a Pb-Free Lead Finish



■ Absolute Maximum Ratings $T_a = 25^\circ C$

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 Pulsed Drain Current (Note.1)	I_{DMR}	0.8	
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: $PW \leq 10\mu s$, Duty Cycle $\leq 1\%$

■ Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$I_D=250 \mu A$, $V_{GS}=0V$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$, $V_{GS}=0V$			10	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 20V$			± 10	μA
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	$t_{d(on)}$	$V_{GS}=10V$, $V_{DS}=15V$, $I_D=0.1A$, $R_L=150 \Omega$, $R_G=10 \Omega$		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 F
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■ Typical Characteristics

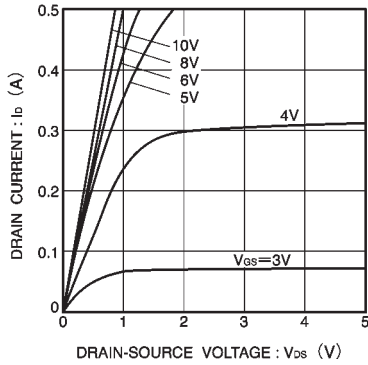


Fig.1 Typical output characteristics

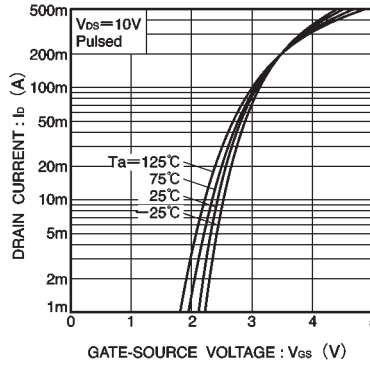


Fig.2 Typical transfer characteristics

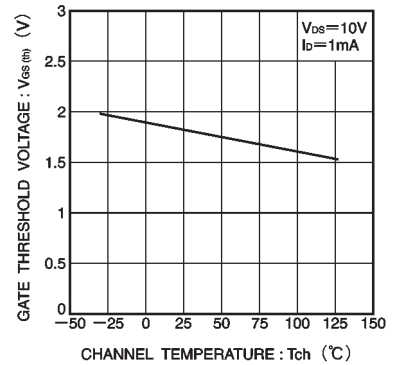


Fig.3 Gate threshold voltage vs. channel temperature

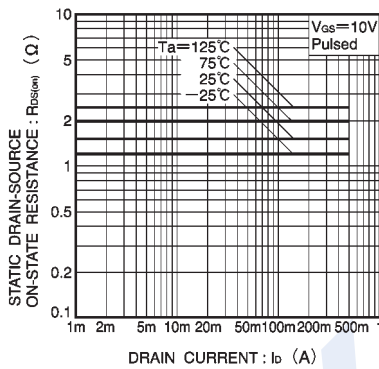


Fig.4 Static drain-source on-state resistance vs. drain current (I)

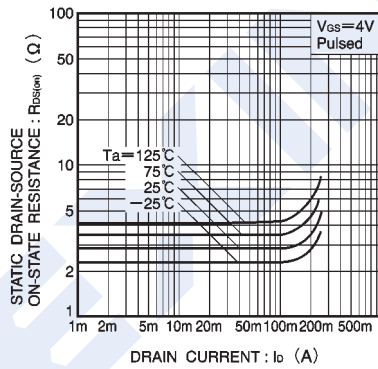


Fig.5 Static drain-source on-state resistance vs. drain current (II)

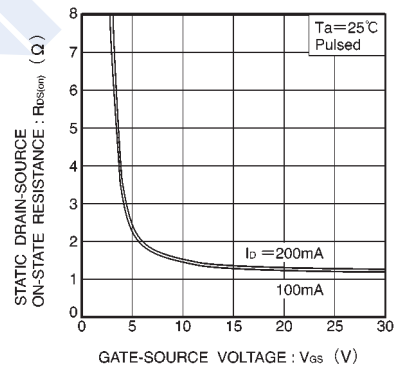


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

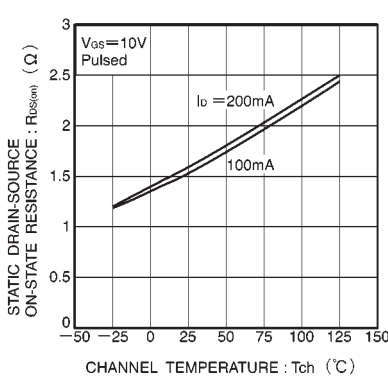


Fig.7 Static drain-source on-state resistance vs. channel temperature

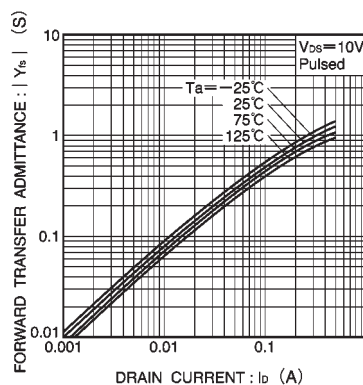


Fig.8 Forward transfer admittance vs. drain current

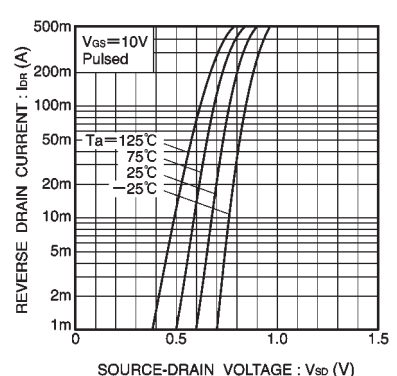


Fig.9 Reverse drain current vs. source-drain voltage (I)

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■ Typical Characteristics

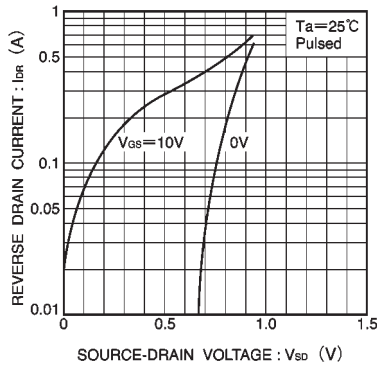


Fig.10 Reverse drain current vs. source-drain voltage (II)

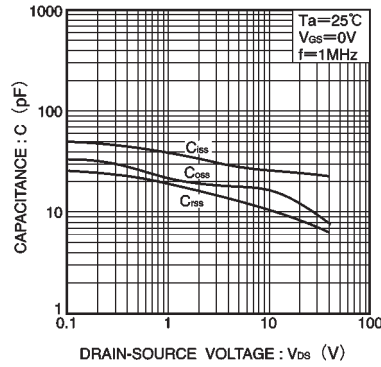


Fig.11 Typical capacitance vs. drain-source voltage

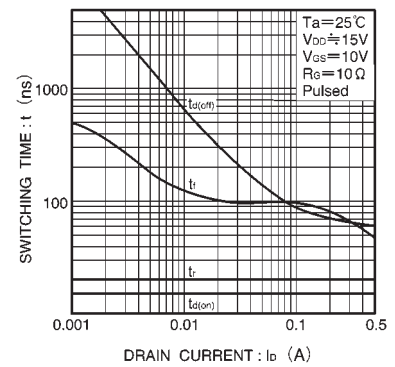


Fig.12 Switching characteristics (See Figures 13 and 14 for the measurement circuit and resultant waveforms)

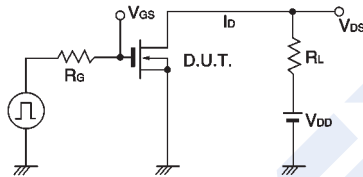


Fig.13 Switching time measurement circuit

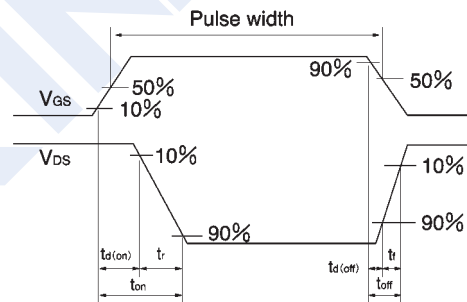


Fig.14 Switching time waveforms