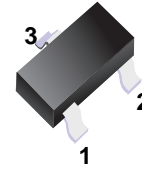
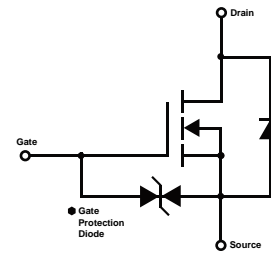


»Features

- $V_{DS} (V) = 30V$
- $I_D = 0.1 A$
- $R_{DS(ON)} < 8 \Omega$ ($V_{GS} = 4V$)
- $R_{DS(ON)} < 13 \Omega$ ($V_{GS} = 2.5V$)



- 1.GATE
- 2.SOURCE
- 3.DRAIN

»Simplified outline(SOT-23)

Equivalent circuit
»Marking

Marking	KN
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»MAXIMUM RATINGS (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	100	mA
Pulsed Drain Current (Note.1)	I_{DM}	400	
Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 to 150	

 Note.1: $PW \leq 10\mu s$, Duty Cycle $\leq 1\%$
»ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

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}	$V_{DS}=30V, V_{GS}=0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=3V, I_D=0.1mA$	0.8		1.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4V, I_D=10mA$			8	Ω
		$V_{GS}=2.5V, I_D=1mA$			13	
Forward Transconductance	g_{FS}	$V_{DS}=3V, I_D=10mA$	20			mS
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=5V, f=1MHz$		13		pF
Output Capacitance	C_{oss}			9		
Reverse Transfer Capacitance	C_{rss}			4		
Turn-On DelayTime	$t_{d(on)}$				15	
Turn-On Rise Time	t_r	$V_{GS}=5V, V_{DS}=5V, I_D=10mA, R_L=500 \Omega, R_G=10 \Omega$		35		
Turn-Off DelayTime	$t_{d(off)}$			80		
Turn-Off Fall Time	t_f			80		

»Typical Characteristics

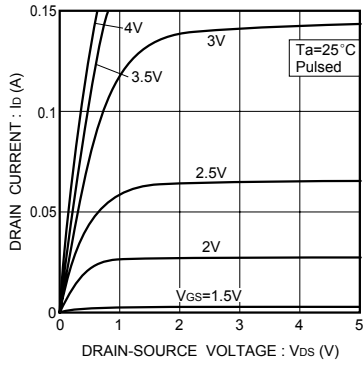


Fig.1 Typical output characteristics

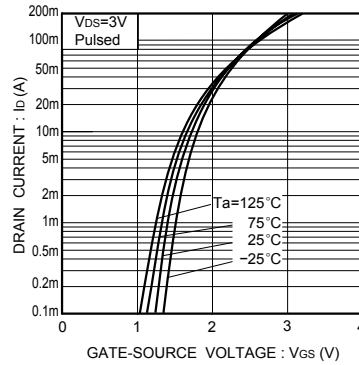


Fig.2 Typical transfer characteristics

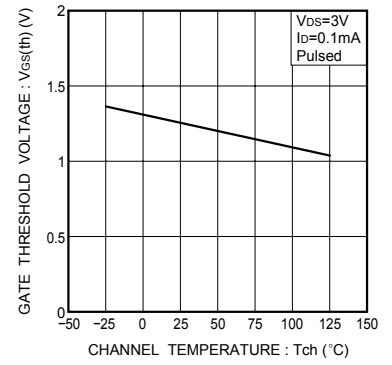


Fig.3 Gate threshold voltage vs. channel temperature

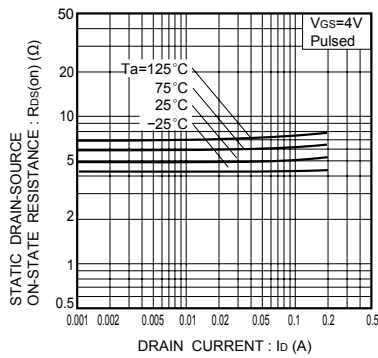


Fig.4 Static drain-source on-state resistance vs. drain current (I)

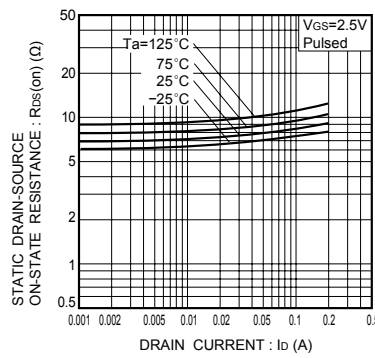


Fig.5 Static drain-source on-state resistance vs. drain current (II)

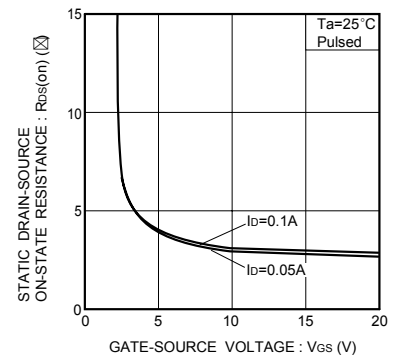


Fig.6 Static drain-source on-state resistance vs. gate-source voltage

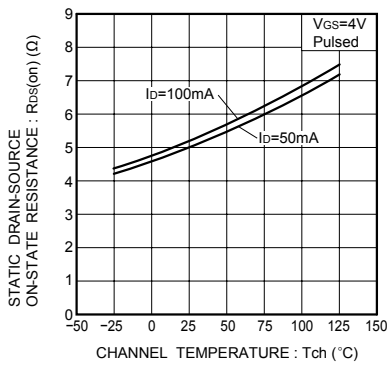


Fig.7 Static drain-source on-state resistance vs. channel temperature

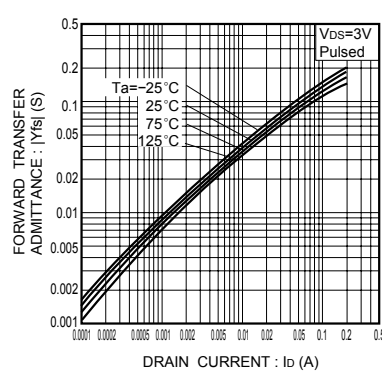


Fig.8 Forward transfer admittance vs. drain current

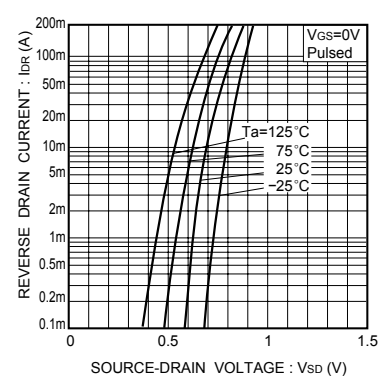


Fig.9 Reverse drain current vs. source-drain voltage (I)

»Typical Characteristics

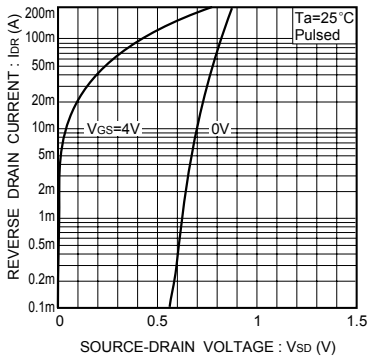


Fig.10 Reverse drain current vs. source-drain voltage (II)

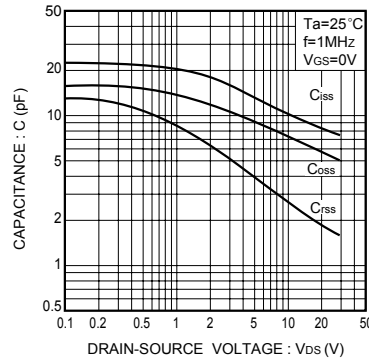


Fig.11 Typical capacitance vs. drain-source voltage

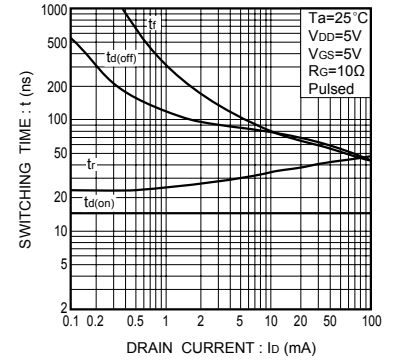


Fig.12 Switching characteristics
(See Figures 13 and 14 for the measurement circuit and resultant waveforms)

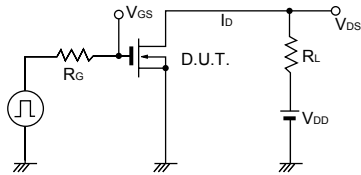


Fig.13 Switching time measurement circuit

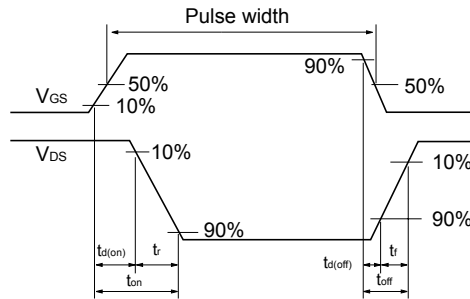
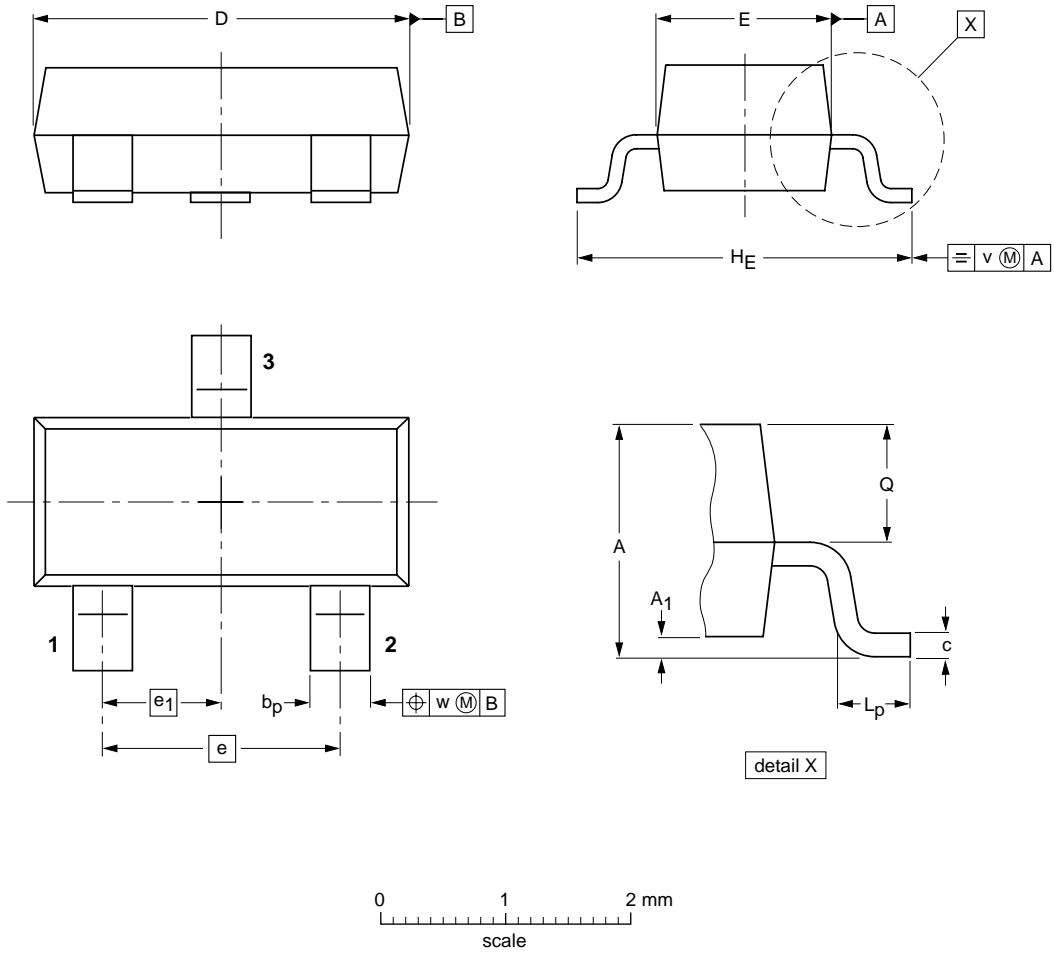


Fig.14 Switching time waveforms

»Package Information

SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1