

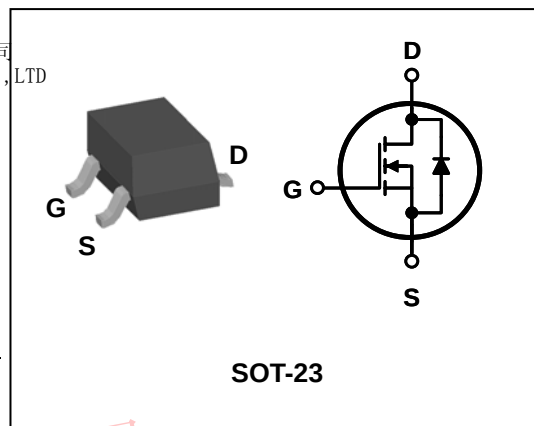
HIGH SPEED SWITCHING APPLICATIONS

Features

- High Voltage: $BV_{DSS}=60V$ (Min.)
- High density cell design for low $R_{DS(on)}$
- Voltage controlled small signal switch
- High saturation current capability

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PIN Connection



Ordering Information

Type NO.	Marking	Package Code
STK7002	K702 □ ① ②	SOT-23

① Device Code ② Year&Week Code

Absolute maximum ratings

(Ta=25°C)

Characteristic	Symbol	Ratings	Unit
Drain-source voltage	V_{DSS}	60	V
Gate-source voltage	V_{GSS}	±20	V
Drain current (DC)	I_D	115	mA
Drain Current (Pulsed) ①	I_{DP}	800	mA
Drain power dissipation ②	P_D	350	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-55~150	°C

Electrical Characteristics

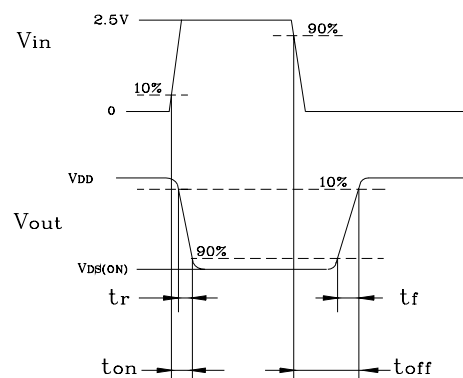
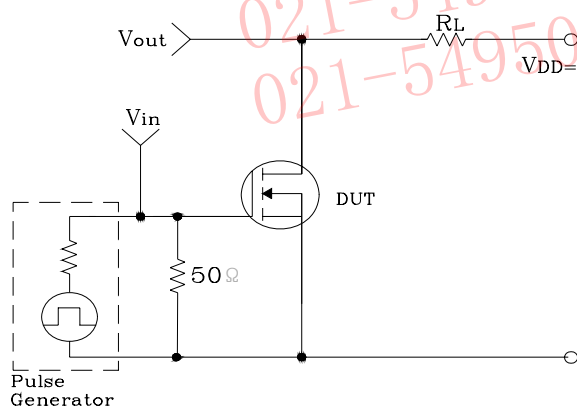
(Ta=25℃)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$I_D=10\mu A, V_{GS}=0V$	60	-	-	V
Gate threshold voltage	$V_{GS(th)}$	$I_D=250\mu A, V_{DS}=V_{GS}$	1	2.0	2.5	V
Drain-source cut-off current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	-	-	1	μA
		$V_{DS}=60V, V_{GS}=0V (@T_a=125^\circ C)$	-	-	200	μA
Gate leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
Static drain-Source on-resistance ③	$R_{DS(on)}$	$V_{GS}=5V, I_D=50mA$	-	3.2	5	Ω
		$V_{GS}=10V, I_D=500mA$	-	2.4	5	Ω
Forward transfer conductance ③	g_{fs}	$V_{DS}=10V, I_D=100mA$	80	-	-	mS
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	-	22	-	pF
Output capacitance	C_{oss}		-	11	-	
Reverse Transfer capacitance	C_{rss}		-	2	-	
Turn-on time ④	t_{on}	$V_{DD}=30V, I_D=100mA$ $V_{GS}=10V, R_G=25\Omega$	-	7	-	ns
Turn-off time ④	t_{off}		-	11	-	ns

Note ;

- ① Limited by maximum junction temperature.
 - ② Device mounted on 99.5% Alumina 10 x 8 x 0.6 mm
 - ③ Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
 - ④ Vin signal condition
- . Rise & Fall time $\leq 5ns$, Duty cycle $\leq 1\%$, Pulse width $\leq 10\mu s$

Fig Fig. 1 Switching Time Test Circuit



Electrical Characteristic Curves

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Fig. 1 $I_D - V_{DS}$

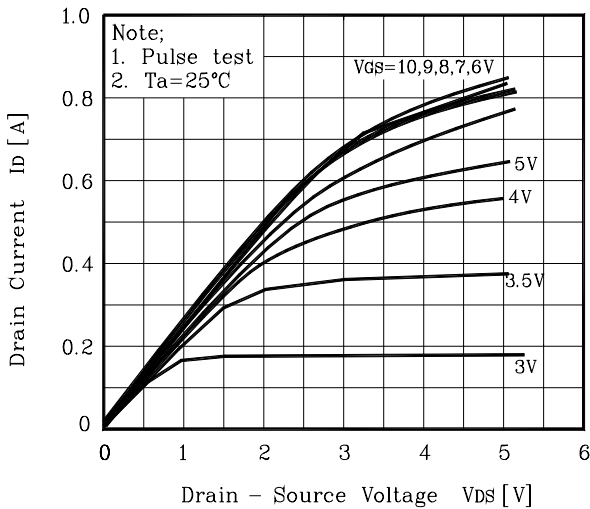


Fig. 2 $I_D - V_{GS}$

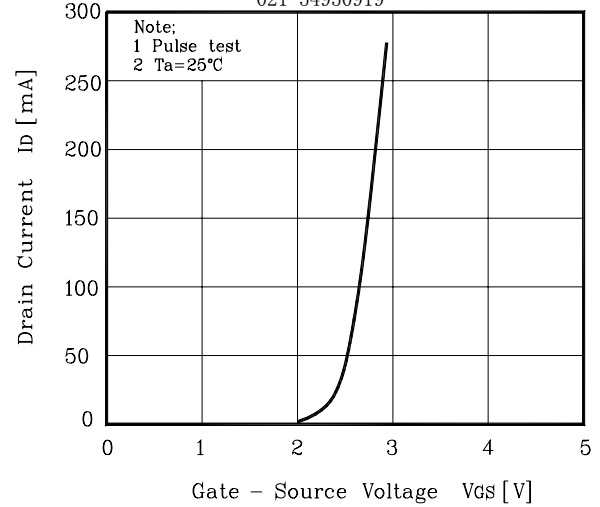


Fig. 3 $R_{DS(on)} - I_D$

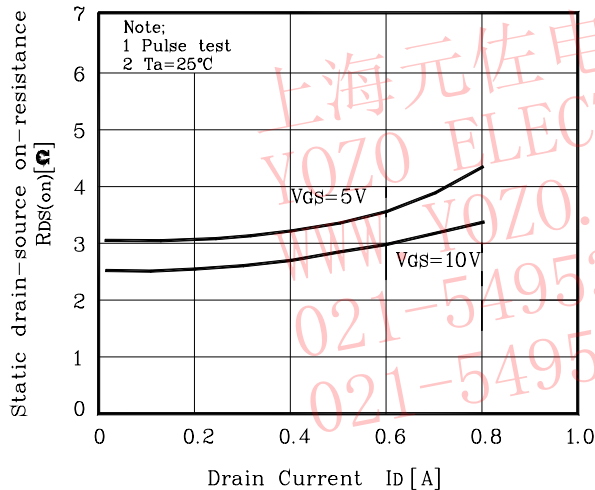


Fig. 4 $R_{DS(on)} - V_{GS}$

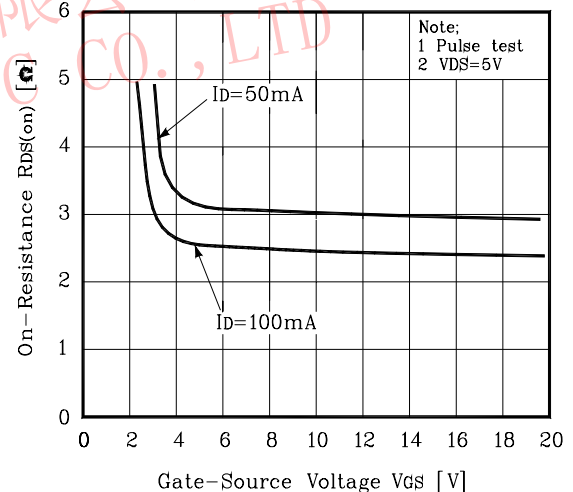


Fig. 5 Capacitance - V_{DS}

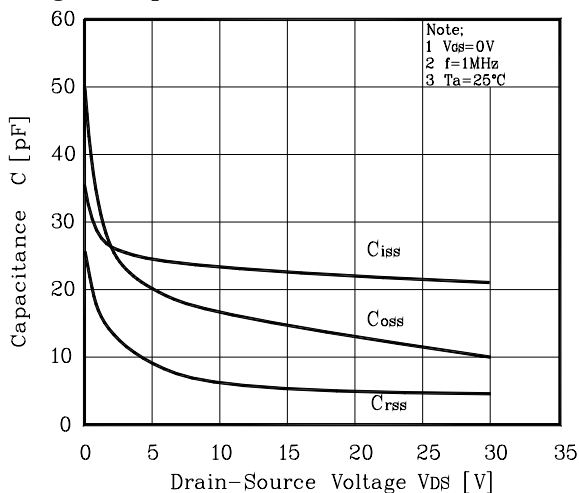
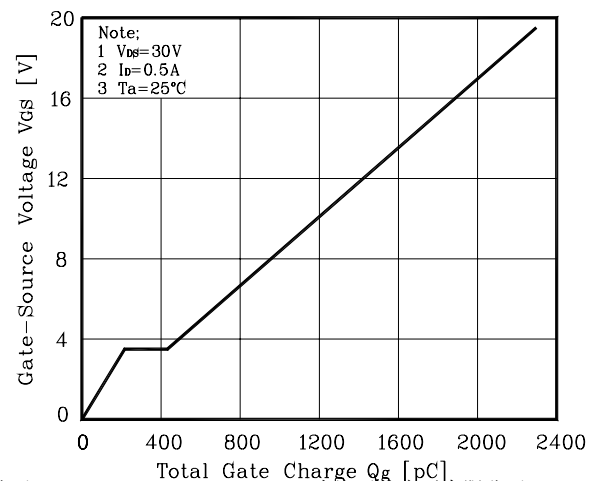
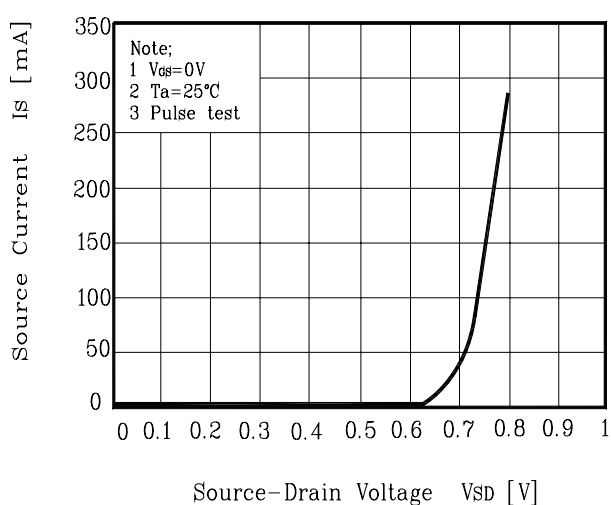


Fig. 6 $V_{GS} - Q_g$



Electrical Characteristic Curves

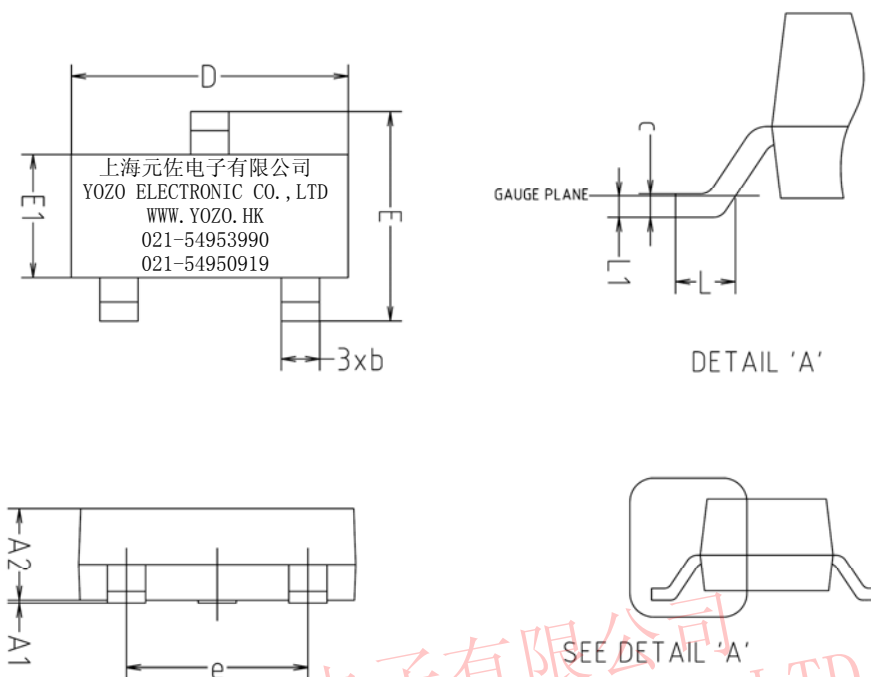
Fig. 7 $I_s - V_{SD}$



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Outline Dimension



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A1	0.00	-	0.10	
A2	0.82	-	1.02	
b	0.39	0.42	0.45	
c	0.09	0.12	0.15	
D	2.80	2.90	3.00	
E	2.20	2.40	2.60	
E1	1.20	1.30	1.40	
e	1.90BSC			
L	0.20	-	-	
L1	0.12BSC			

※ Recommend PCB solder land (Unit : mm)

