KODENSHI AUK

STK7002

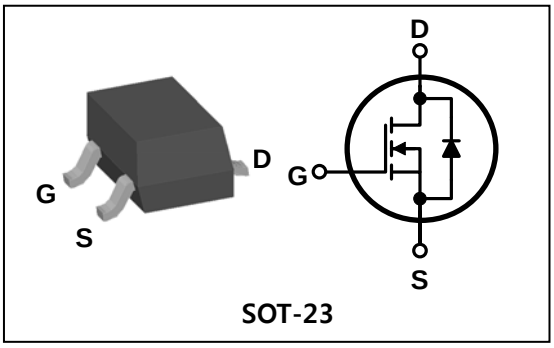
Advanced N-Channel MOSFET

HIGH SPEED SWITCHING APPLICATIONS

Features

- Low Gate Threshold Voltage
- Low C_{rss} : C_{rss}=2.0pF(Typ.)
- Voltage controlled small signal switch
- Low $R_{DS(on)}$: $R_{DS(on)}$=5Ω(Max.)

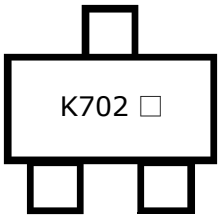
PIN Connection



Ordering Information

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

Marking Diagram



K702 : Specific Device Code

□ : year & week Code Marking

Absolute maximum ratings (T_A=25°C unless otherwise noted)

Characteristic	Symbol	Rating	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) *	I_{DM}	800	mA
Junction temperature	T_J	150	°C
Storage temperature range	T_{stg}	-55~150	

* Limited by maximum junction temperature

Thermal Characteristics

Characteristic	Symbol	Rating	Unit
Power dissipation	P_D	350	mW
Thermal resistance, Junction-Ambient *	$R_{th(J-A)}$	357	°C/W

* Device mounted on FR-4 PCB, 99.5% Alumina 10 x 8 x 0.6mm. Minimum land pad size

Electrical Characteristics (T_A=25°C unless otherwise noted)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics (Note1)						
Drain-source breakdown voltage	BV_{DSS}	I_D=10uA, V_{GS}=0	60	-	-	V
Drain-source cut-off current	I_{DSS}	V_{DS}=60V, V_{GS}=0	-	-	1.0	uA
		V_{DS}=60V, V_{GS}=0, @T_C=125°C	-	-	200	
Gate leakage current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V	-	-	±100	nA
On Characteristics (Note1)						
Gate threshold voltage	$V_{GS(th)}$	I_D=250uA, V_{DS}=V_{GS}	1.0	2.0	2.5	V
Drain-source on-resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=500mA	-	2.4	5.0	Ω
		V_{GS}=5V, I_D=50mA	-	3.2	5.0	
Forward transfer conductance	g_{fs}	V_{DS}=10V, I_D=100mA	80	-	-	mS
Dynamic Characteristics						
Input capacitance	Ciss	V_{GS}=0V, V_{DS}=25V, f=1MHz	-	22	-	pF
Output capacitance	Coss		-	11	-	
Reverse transfer capacitance	Crss		-	2	-	
Switching Characteristics						
Turn-on delay time	$t_{D(ON)}$	V_{DD}=30V, I_D=100mA V_{GS}=10V, R_G=25Ω	-	7	-	ns
Turn-off delay time	$t_{D(OFF)}$		-	11	-	

Note1 : Short duration test pulse used to minimize self-heating effect.

Electrical Characteristic Curves

Fig. 1 I_D - V_{DS}

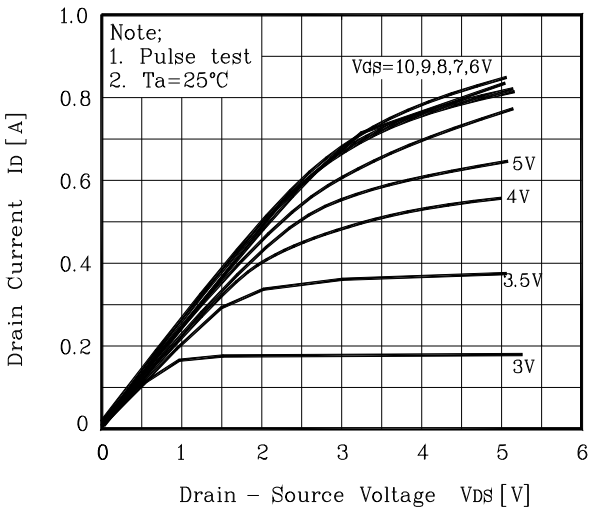


Fig. 2 I_D - V_{GS}

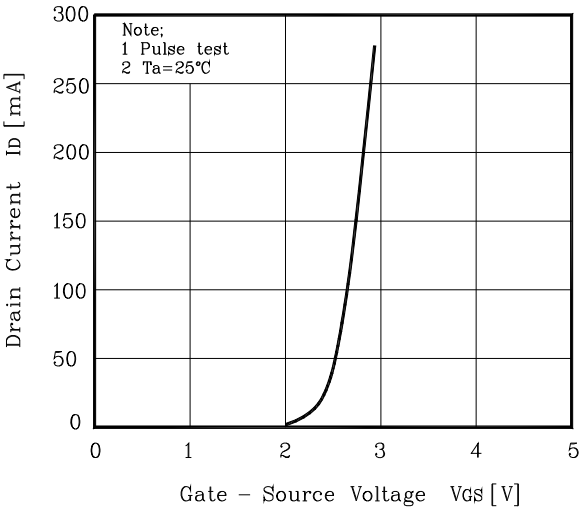


Fig. 3 $R_{DS(on)}$ - I_D

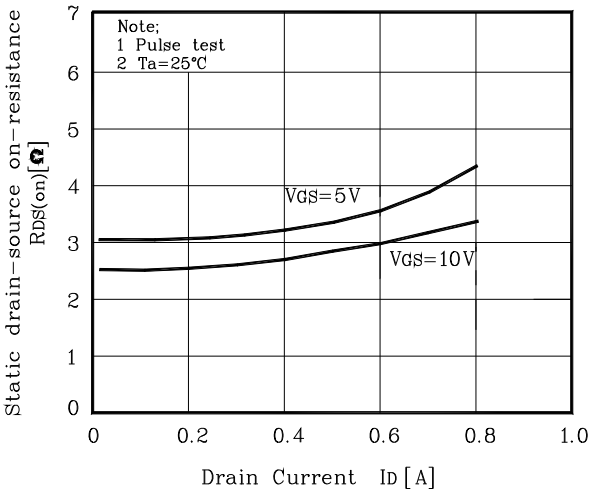


Fig. 4 $R_{DS(on)}$ - V_{GS}

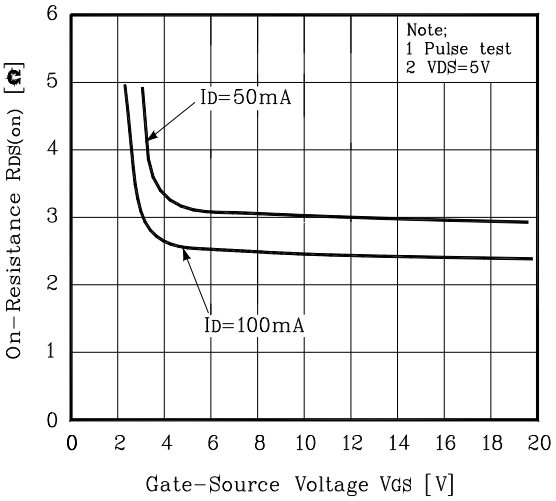


Fig. 5 Capacitance - V_{DS}

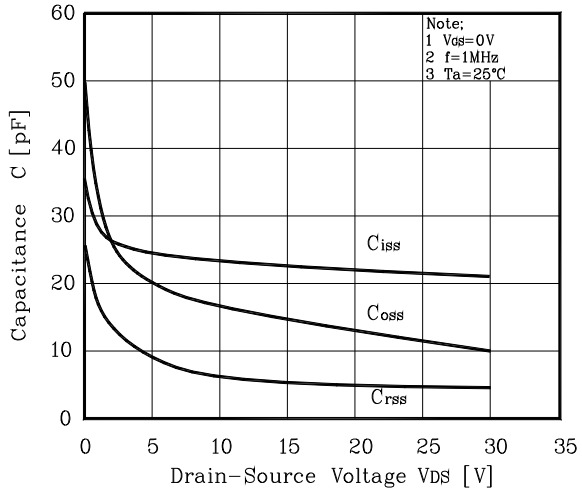
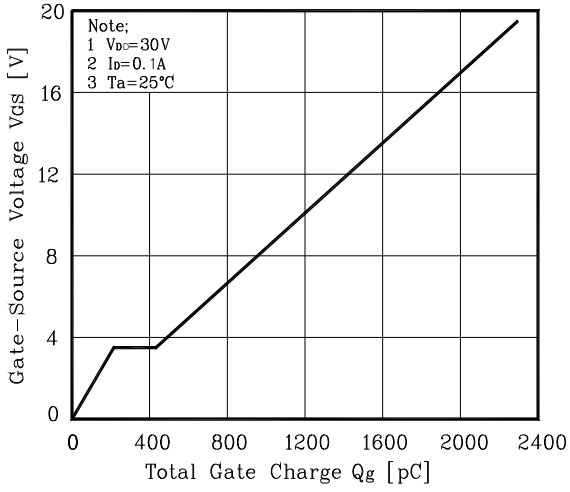


Fig. 6 V_{GS} - Q_g



Electrical Characteristic Curves

Fig. 7 I_S - V_{SD}

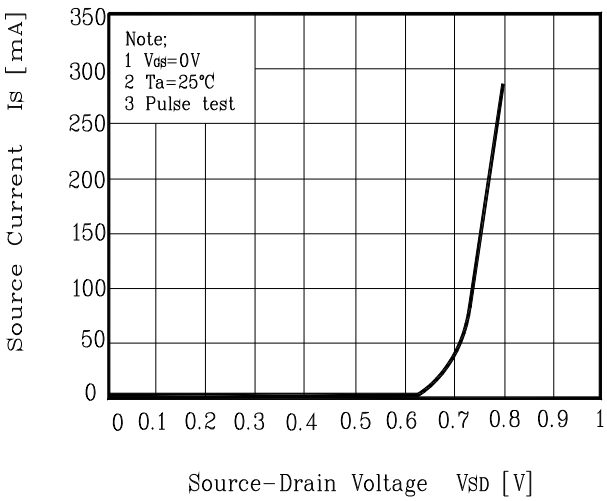
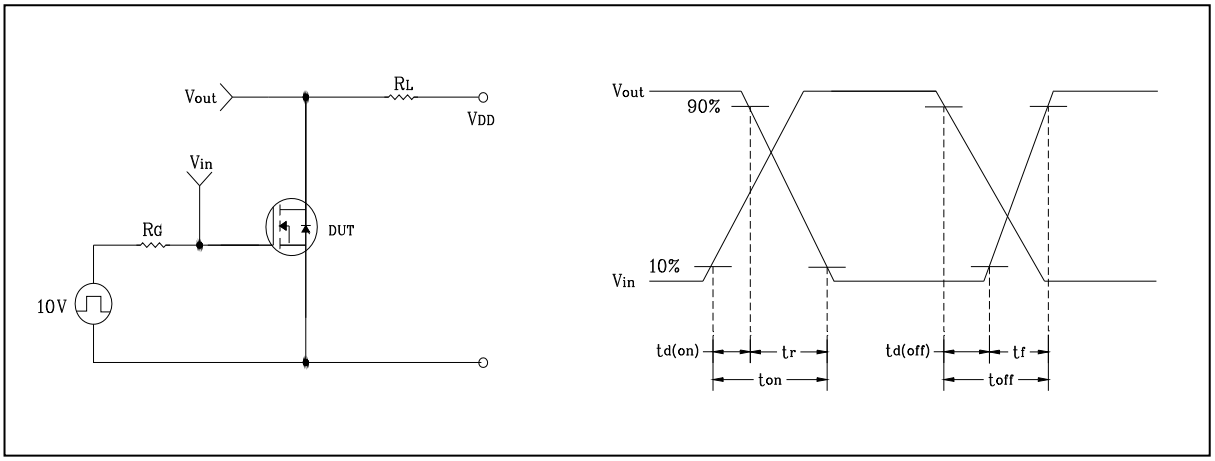
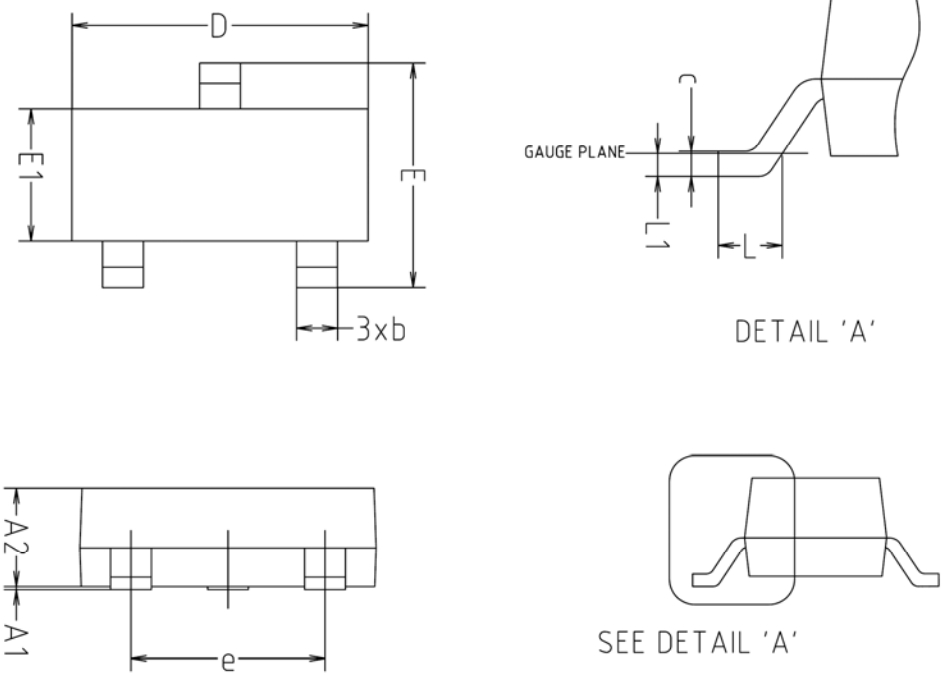


Fig. 8 Resistive Switching Test Circuit & Waveform



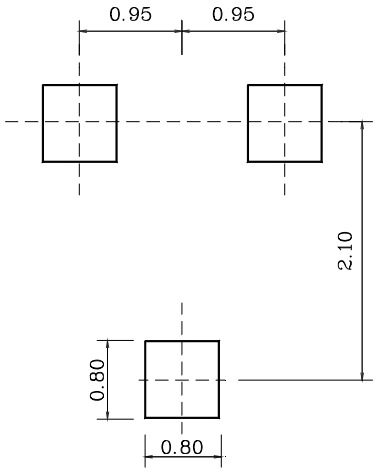
Outline Dimension

unit: mm



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			

※ Recommended Land Pattern [unit: mm]



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