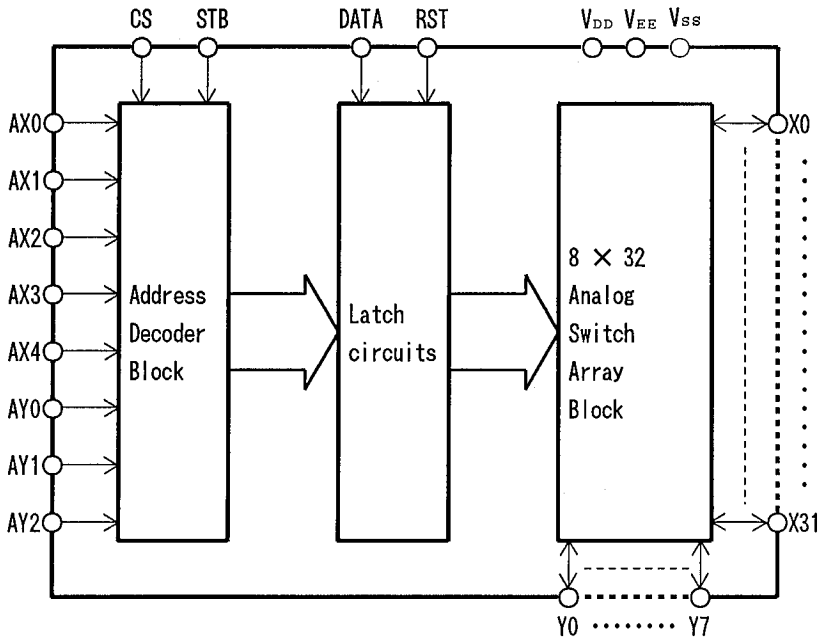
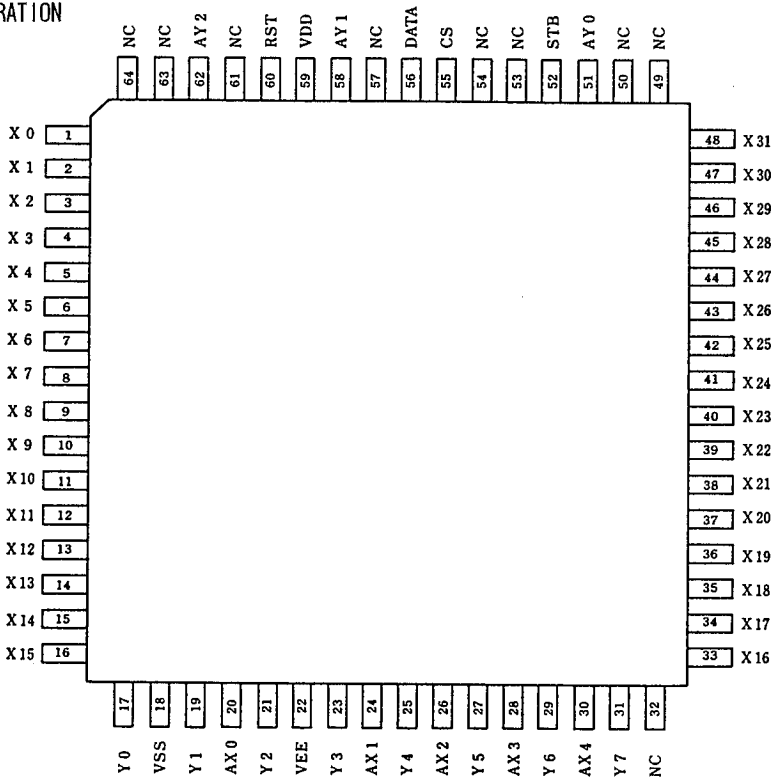




## ■ BLOCK DIAGRAM



## ■ PIN CONFIGURATION



## ■ TERMINAL DESCRIPTION

No.	SYMBOL	F U N C T I O N
59	V <sub>DD</sub>	LOGIC/Switch Power Source (+)
18	V <sub>SS</sub>	LOGIC Power Source (GND)
22	V <sub>EE</sub>	Switch Power Source (-)
55	CS	Chip Select Signal Input
52	STB	Strobe Signal Input
56	DATA	Switch ON/OFF Signal Input
60	RST	Master Reset Signal Input
20,24	AX0~AX1	X0~X1 Address Signal Input
26,28,30	AX2~AX4	X2~X4 Address Signal Input
51,58,62	AY0~AY2	Y0~Y2 Address Signal Input
1~16 33~48	X0 ~X15 X16~X31	X0~X31 Analog Switches Array Input/Output
17,19,21 23,25 27,29,31	Y0~Y2 Y3~Y4 Y5~Y7	Y0~Y7 Analog Switches Array Input/Output

**FUNCTIONAL DESCRIPTION**
**(1) Address Decoder Block**

The address decoder block decodes AX0~AX4 of X side and AY0~AY2 of Y side to 32 lines of X side and 8 lines of Y side, then the decoded signals select a switch out of the 8 × 32 analog switches array. The address can be set when an input signal condition to GS terminal is High level.

Following table shows address decoding.

AX0	AX1	AX2	AX3	AX4	AY0	AY1	AY2	Connection
0	0	0	0	0	0	0	0	X0 - Y0
1	0	0	0	0	0	0	0	X1 - Y0
0	1	0	0	0	0	0	0	X2 - Y0
1	1	0	0	0	0	0	0	X3 - Y0
0	0	1	0	0	0	0	0	X4 - Y0
1	0	1	0	0	0	0	0	X5 - Y0
0	1	1	0	0	0	0	0	X6 - Y0
1	1	1	0	0	0	0	0	X7 - Y0
0	0	0	1	0	0	0	0	X8 - Y0
1	0	0	1	0	0	0	0	X9 - Y0
0	1	0	1	0	0	0	0	X10 - Y0
1	1	0	1	0	0	0	0	X11 - Y0
0	0	1	1	0	0	0	0	X12 - Y0
1	0	1	1	0	0	0	0	X13 - Y0
0	1	1	1	0	0	0	0	X14 - Y0
1	1	1	1	0	0	0	0	X15 - Y0
0	0	0	0	1	0	0	0	X16 - Y0
1	0	0	0	1	0	0	0	X17 - Y0
0	1	0	0	1	0	0	0	X18 - Y0
1	1	0	0	1	0	0	0	X19 - Y0
0	0	1	0	1	0	0	0	X20 - Y0
1	0	1	0	1	0	0	0	X21 - Y0
0	1	1	0	1	0	0	0	X22 - Y0
1	1	1	0	1	0	0	0	X23 - Y0
0	0	0	1	1	0	0	0	X24 - Y0
1	0	0	1	1	0	0	0	X25 - Y0
0	1	0	1	1	0	0	0	X26 - Y0
1	1	0	1	1	0	0	0	X27 - Y0
0	0	1	1	1	0	0	0	X28 - Y0
1	0	1	1	1	0	0	0	X29 - Y0
0	1	1	1	1	0	0	0	X30 - Y0
1	1	1	1	1	0	0	0	X31 - Y0
0	0	0	0	0	1	0	0	X0 - Y1
↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	1	1	0	0	X31 - Y1
0	0	0	0	0	0	1	0	X0 - Y2
↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	1	0	1	0	X31 - Y2
0	0	0	0	0	1	1	0	X0 - Y3
↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	1	1	0	0	X31 - Y3
0	0	0	0	0	0	0	1	X0 - Y4
↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	1	0	0	1	X31 - Y4
0	0	0	0	0	1	0	1	X0 - Y5
↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	1	1	0	1	X31 - Y5
0	0	0	0	0	0	1	1	X0 - Y6
↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	1	0	1	1	X31 - Y6
0	0	0	0	0	1	1	1	X0 - Y7
↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	1	1	1	1	1	X31 - Y7

**(2) Latch Circuits**

Analog data are loaded when each input signal condition to GS and STB terminals is High level, and their data are latched when an input signal to STB terminal falls from High to Low. The condition of a switch becomes ON when the latched data is High, and it becomes OFF when the latched data is Low. When the input signal condition to RST terminal is High, the latch circuits are reset and all switches become OFF.

**(3) 8 × 32 Analog Switch Array Block**

The analog switch array consisted of 8 × 32 switches are controlled by the output signals from latch circuits.

## ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{DD}-V_{SS}$	- 0.3 ~ +14.0	V
	$V_{DD}-V_{EE}$	- 0.3 ~ +14.0	
	$V_{SS}-V_{EE}$	- 0.3 ~ +14.0	
Analog Input Voltage	$V_{INA}$	$V_{EE}-0.3 \sim V_{DD}+0.3$	V
Digital Input Voltage	$V_{IN}$	$V_{SS}-0.3 \sim V_{DD}+0.3$	V
Input Current	$I_{IN}$	$\pm 15$	mA
Power Dissipation	$P_D$	300	mW
Operating Temperature Range	$T_{OPR}$	- 25 ~ + 75	°C
Storage Temperature Range	$T_{STG}$	- 40 ~ +125	°C

## ■ ELECTRICAL CHARACTERISTICS

## ·DC CHARACTERISTICS

 $(V_{DD}=10V, V_{SS}=V_{EE}=0V, T_a=25^\circ C)$ 

PARAMETER	SYMBOL	RATINGS	MIN	TYP	MAX	UNIT
Operating Voltage Range	$V_{DD}-V_{SS}$		4.5	5.0	6.0	V
	$V_{DD}-V_{EE}$		4.5	10.0	11.0	
Analog Input Voltage	$V_{INA}$		$V_{EE}$		$V_{DD}$	V
Digital Input Voltage	$V_{IN}$		$V_{SS}$		$V_{DD}$	V
Operating Current	$I_{DD1}$	Digital Input Terminal, $V_{IN}=V_{SS}$ or $V_{DD}$		1	100	$\mu A$
	$I_{DD2}$	Digital Input Terminal, $V_{IN}=2.4V+V_{SS}$ $V_{DD}=10V, V_{SS}=5V, V_{EE}=0V$		0.4	1.5	mA
	$I_{DD3}$	Digital Input Terminal, $V_{IN}=3.4V$		5	15	mA
Switch OFF Leakage Current	$I_{OFF}$	$ V_{Xi}-V_{Yj} =V_{DD}-V_{EE}$		$\pm 1$	$\pm 500$	nA
Low-Level Input Voltage	$V_{IL}$	$V_{DD}=10V, V_{SS}=5V, V_{EE}=0V$			$0.8+V_{SS}$	V
High-Level Input Voltage	$V_{IH}$	$V_{DD}=10V, V_{SS}=5V, V_{EE}=0V$	$2.0+V_{SS}$			V
Input Leakage Current	$I_{LEAK}$			0.1	10	$\mu A$

## ·SWITCH CHARACTERISTICS

 $(V_{DD}=5V, V_{SS}=0V, V_{EE}=-5V, |V_{Xi}-V_{Yj}|=0.4V, T_a=25^\circ C)$ 

PARAMETER	SYMBOL	RATINGS	MIN	TYP	MAX	UNIT
ON-Resistance	$R_{ON1}$	$V_{DD}-V_{EE}=10V$		80	100	$\Omega$
	$R_{ON2}$	$V_{DD}-V_{EE}=5V$		200	250	
Deviation of ON-Resistance	$\Delta R_{ON}$	$V_{DD}=10V, V_{SS}=V_{EE}=0V,$ $V_{DC}=V_{DD}/2$		10	20	$\Omega$

## SWITCHING CHARACTERISTICS

 $(V_{DD}=5V, V_{SS}=0V, V_{EE}=-5V, T_a=25^\circ C)$ 

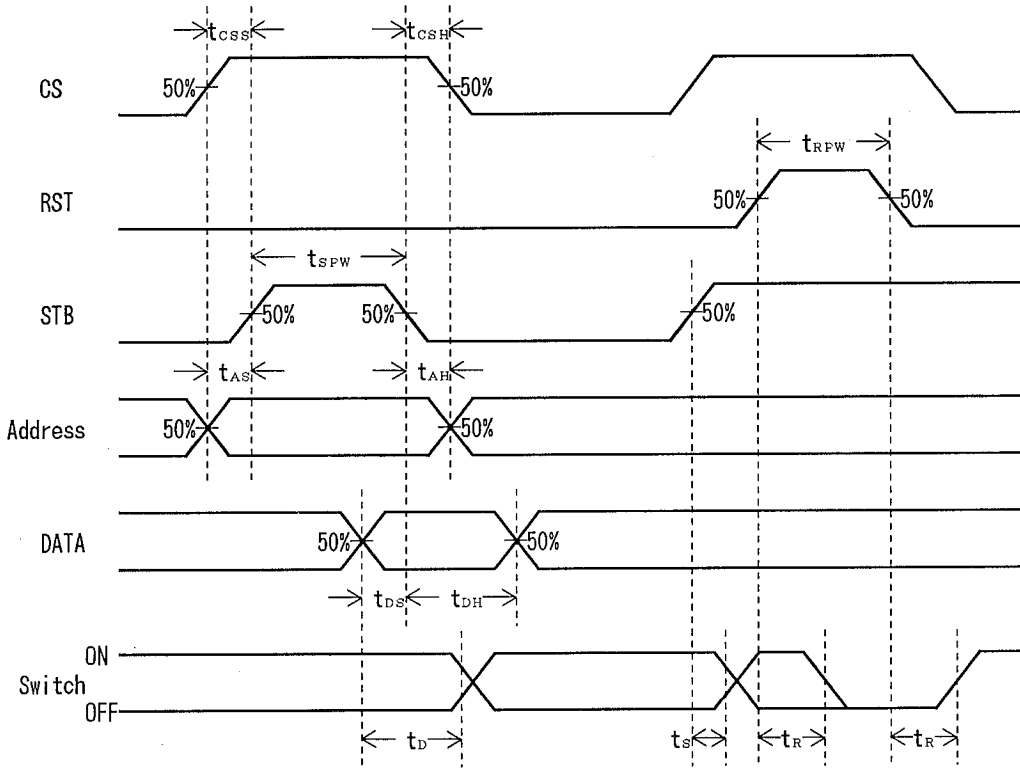
PARAMETER	SYMBOL	R A T I N G S		MIN	TYP	MAX	UNIT
Input Capacitance	$C_s$	X, Y Terminal $f=1\text{MHz}$ , Switch OFF			15		pF
Maximum Transmitting Frequency (ON)	$F_{MAX}$	Switch ON; $V_{INA}=2V_{PP}$ Sign wave; $R_L=1k\Omega$			45		MHz
Total Harmonic Distortion Ratio	THD	Switch ON; $V_{INA}=2V_{PP}$ Sign wave; $f=1\text{kHz}$ , $R_L=1k\Omega$			0.01		%
Feed Threw (OFF)	FDT	All Switch OFF; $V_{INA}=2V_{PP}$ Sign wave; $f=1\text{kHz}$ , $R_L=1k\Omega$			-95		dB
Cross Talk	$X_{talk1}$	$V_{INA}=2V_{PP}$	$f=10\text{MHz}$ , $R_L=75\Omega$		-45		dB
	$X_{talk2}$		$f=10\text{kHz}$ , $R_L=600\Omega$		-90		
	$X_{talk3}$		$f=10\text{kHz}$ , $R_L=1k\Omega$		-85		
	$X_{talk4}$		$f=1\text{kHz}$ , $R_L=10k\Omega$		-80		
Transmitting Time	tps	$R_L=1k\Omega$ ; $C_L=50\text{pF}$				30	ns

## AC CHARACTERISTICS

 $(V_{DD}=5V, V_{SS}=0V, V_{EE}=-5V, T_a=25^\circ C)$ 

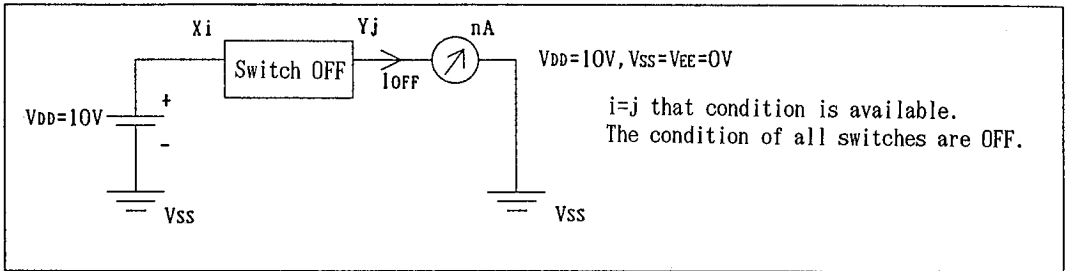
PARAMETER	SYMBOL	R A T I N G S		MIN	TYP	MAX	UNIT	
Cross Talk on Control Input Signal	$CX_{talk}$	$V_{IN}=3V$ , Square wave $R_{IN}=1k\Omega$ , $R_L=10k\Omega$			30		mVpp	
Input Capacitance	$C_{DI}$	$f=1\text{MHz}$ , Control Terminals			10		pF	
Switching Frequency	$F_o$					20	MHz	
Data Setup Time	$t_{DS}$	$R_L=1k\Omega$ , $C_L=50\text{pF}$		0			ns	
Data Hold Time	$t_{DH}$			60				ns
Address Setup Time	$t_{AS}$			0				ns
Address Hold Time	$t_{AH}$			60				ns
CS Setup Time	$t_{CSS}$			0				ns
CS Hold Time	$t_{CSH}$			60				ns
Strobe Pulse Width	$t_{SPW}$			30				ns
Reset Pulse Width	$t_{RPW}$			40				ns
Strobe Transmitting Time	$t_s$				80		150	ns
Data Transmitting Time	$t_d$				50		100	ns
Latch Reset Time	$t_r$				35		100	ns

## ■ Timing Diagram

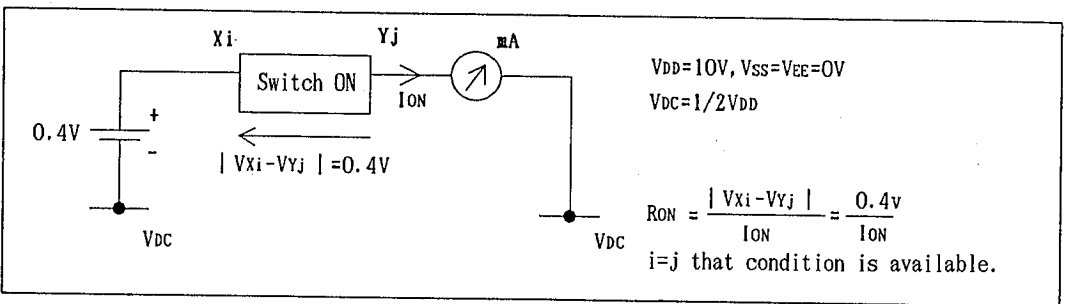


■ MEASUREMENT CIRCUITS

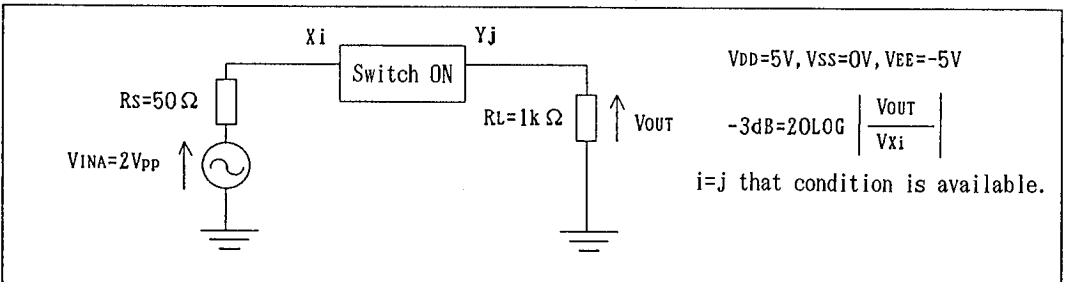
(1) OFF LEAKAGE ( $I_{OFF}$ ) MEASUREMENT CIRCUIT



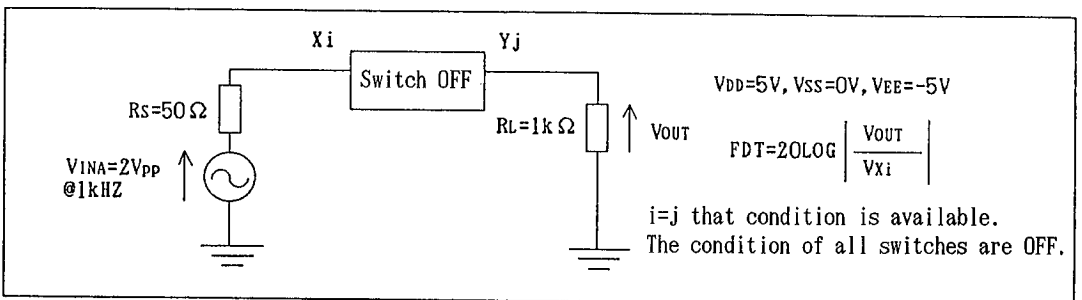
(2)  $R_{ON}/\Delta R_{ON}$  MEASUREMENT CIRCUIT



(3) MAXIMUM TRANSMITTING FREQUENCY ( $F_{MAX}$ ) MEASUREMENT CIRCUIT

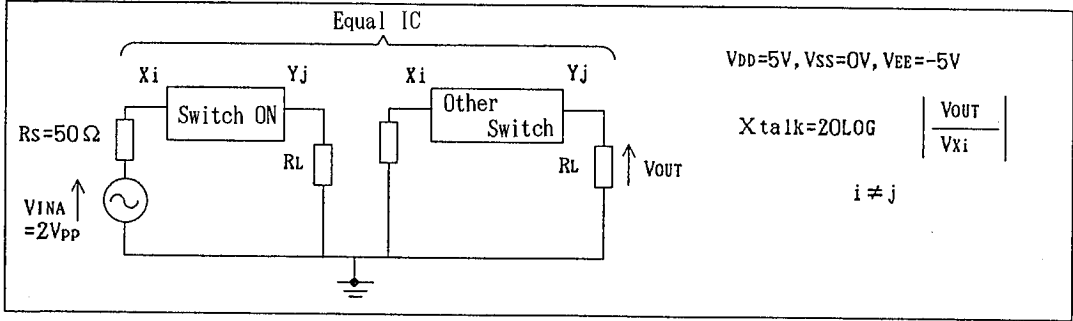
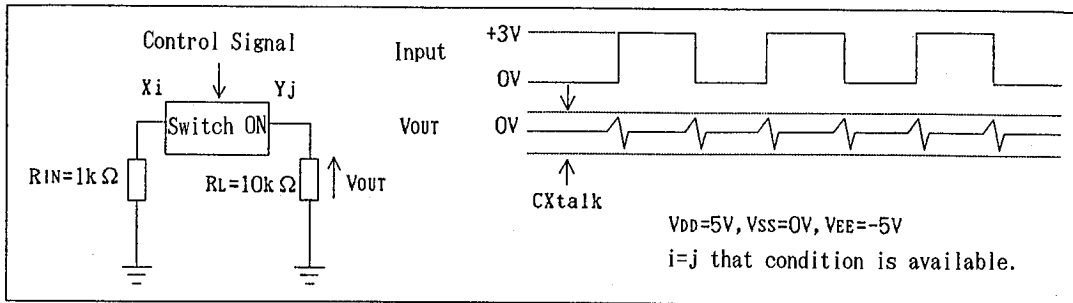


(4) FIELD THREW (FDT) MEASUREMENT CIRCUIT

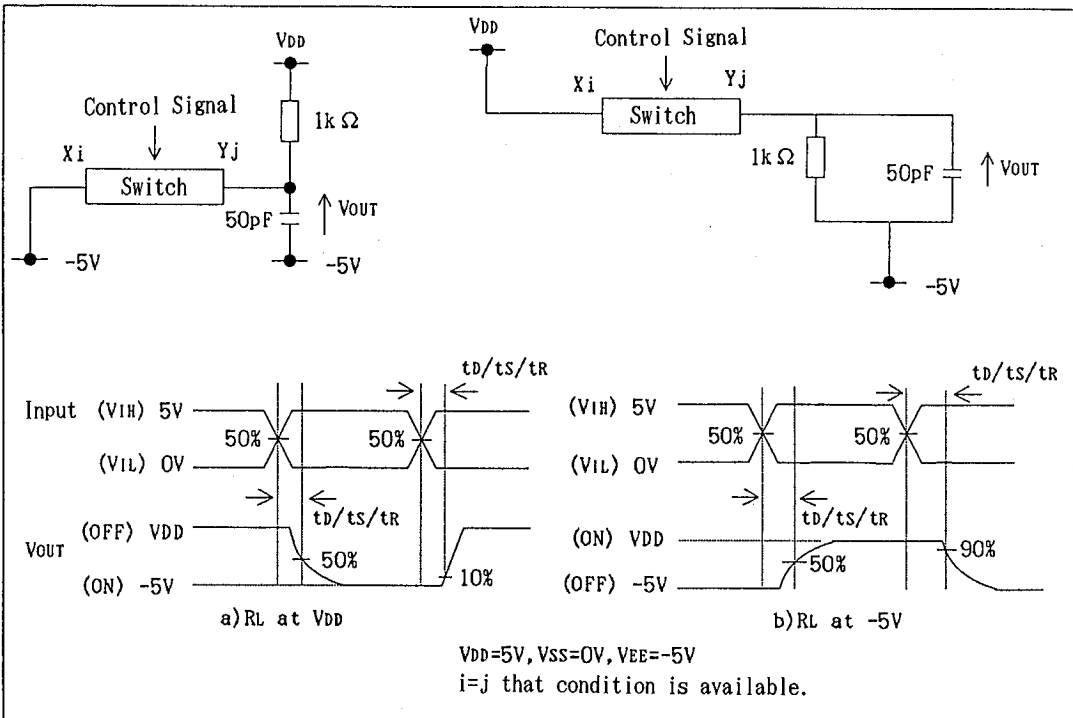


6



(5) CROSS TALK ( $X_{talk}$ ) MEASUREMENT CIRCUIT

 (6) CONTROL INPUT CROSS TALK ( $CX_{talk}$ ) MEASUREMENT CIRCUIT


## (7) CONTROL MEMORY TIMING MEASUREMENT CIRCUIT



## MEMO

**[CAUTION]**

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