Ordering number : ENA0909

SANYO Semiconductors
DATA SHEET

LA73062V — Monolithic Linear IC
Video Driver for Wideband

Overview

The LA73062V is a wideband video output interface. It is ideal as a driver for Composite, S, YPbPr, and RGB analog video signal outputs.
Incorporating low pass filters (6/12/30MHz), the LA73062V can also serve as a digital clock noise rejection filter.

Functions

- Six channel output
- 6MHz low pass filter (SD) / 12MHz or 30MHz low pass filter (HD)
- 6dB amplifier
- Output mute
- Y/C_MIX
- S_DC_Output
- D_DC_Output
- Standby mode

Specifications

Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		6.0	V
Allowable power dissipation	Pd max	Ta≤75°C, Mounted on a circuit board*	780	mW
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-40 to +150	°C

* Mounted on a specified board: 114.3mm×76.1mm×1.6mm, glass epoxy.

SANYO Semiconductor Co., Ltd.
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		5.0	V
Operating supply voltage range	V_{CC}opg		4.75 to 5.25	V
Input pin voltage application range	V_{IN}		-0.3 to Vccopg+0.3	V

Electrical Characteristics at Ta=25°C, V_{CC}=5.0V

Parameter	Input signal				Out	Test Condition	Ratings			unit
	Point	Signal	Level [Vpp]	Freq [Hz]	Point		min	typ	max	
Current consumption 1						At a no signal.	68	86	104	mA
Current consumption 2						Standby mode. At a no signal.	0.0	0.5	1.0	mA
Internal reference regulator										
REG3V					T30		2.8	3.0	3.2	V
Video driver part										
Voltage gain 1 CV,Y,Py,R,G,B	T2A T2A T15A T13A T15A T17A	SIG1	0.3	100k	T36 T34 T22 T24 T22 T20	Output gain	5.5	6.0	6.5	dB
Voltage gain 2 C,Pr,Pb	T4A T13A T17A	SIG3	0.3	100k	T32 T24 T20	Output gain	5.5	6.0	6.5	dB
Frequency response 1(SD) CV,Y	T2A T2A	SIG1	0.3	6M	T36 T34	6MHzLPF is selected. f=6MHz/100kHz	-3.0	0.0	3.0	dB
Frequency response 2(SD) C	T4A	SIG3	0.3	6M	T32	6MHzLPF is selected. f=6MHz/100kHz	-3.0	0.0	3.0	dB
Frequency response 3(SD) CV,Y	T2A T2A	SIG1	0.3	27M	T36 T34	6MHzLPF is selected. f=27MHz/100kHz		-40	-30	dB
Frequency response 4(SD) C	T4A	SIG3	0.3	27M	T32	6MHzLPF is selected. f=27MHz/100kHz		-40	-30	dB
Frequency response 5(HD) Py,R,G,B	T15A T13A T15A T17A	SIG1	0.3	12M	T22 T24 T22 T20	12MHzLPF is selected. f=12MHz/100kHz	-3.0	0.0	3.0	dB
Frequency response 6(HD) Pr,Pb	T13A T17A	SIG3	0.3	12M	T24 T20	12MHzLPF is selected. f=12MHz/100kHz	-3.0	0.0	3.0	dB
Frequency response 7(HD) Py,R,G,B	T15A T13A T15A T17A	SIG1	0.3	75M	T22 T24 T22 T20	12MHzLPF is selected. f=75MHz/100kHz		-40	-30	dB
Frequency response 8(HD) Pr,Pb	T13A T17A	SIG3	0.3	75M	T24 T20	12MHzLPF is selected. f=75MHz/100kHz		-40	-30	dB
Frequency response 9(HD) Py,R,G,B	T15A T13A T15A T17A	SIG1	0.3	20M	T22 T34 T22 T20	30MHzLPF is selected. f=20MHz/100kHz	-1.0	0.0	1.0	dB
Frequency response 10(HD) Pr,Pb	T13A T17A	SIG3	0.3	20M	T24 T20	30MHzLPF is selected. f=20MHz/100kHz	-1.0	0.0	1.0	dB
Frequency response 11(HD) Py,R,G,B	T15A T13A T15A T17A	SIG1	0.3	30M	T22 T34 T22 T20	30MHzLPF is selected. f=30MHz/100kHz	-4.0	-1.5	1.0	dB
Frequency response 12(HD) Pr,Pb	T13A T17A	SIG3	0.3	30M	T24 T20	30MHzLPF is selected. f=30MHz/100kHz	-4.0	-1.5	1.0	dB
Frequency response 13(HD) Py,R,G,B	T15A T13A T15A T17A	SIG1	0.3	75M	T22 T34 T22 T20	30MHzLPF is selected. f=75MHz/100kHz		-40	-30	dB

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Parameter	Input signal				Out	Test Condition	Ratings			unit
	Point	Signal	Level [Vpp]	Freq [Hz]	Point		min	typ	max	
Frequency response 14(HD) Pr,Pb	T13A T17A	SIG3	0.3	75M	T24 T20	30MHzLPF is selected. f=75MHz/100kHz		-40	-30	dB
2nd order distortion 1(SD) CV,Y,Py,R,G,B	T2A T2A T15A T13A T15A T17A	SIG1	0.7	4M	T36A T34A T22A T24A T22A T20A	6MHzLPF, 12MHzLPF is selected.		-40	-30	dB
2nd order distortion 2(SD) C,Pr,Pb	T4A T13A T17A	SIG3	0.7	4M	T32A T24A T20A	6MHzLPF, 12MHzLPF is selected.		-40	-30	dB
2nd order distortion 3(HD) Py,R,G,B	T15A T13A T15A T17A	SIG1	0.7	10M	T22A T24A T22A T20A	30MHzLPF is selected.		-40	-30	dB
2nd order distortion 4(HD) Pr,Pb	T13A T17A	SIG3	0.7	10M	T24A T20A	30MHzLPF is selected.		-40	-30	dB
Amount of mute attenuation 1 CV,Y,Py,R,G,B	T2A T2A T15A T13A T15A T17A	SIG1	0.7	4M	T36 T34 T22 T24 T22 T20			-60	-50	dB
Amount of mute attenuation 2 C,Pr,Pb	T4A T13A T17A	SIG3	0.7	4M	T32 T24 T20			-60	-50	dB
Crosstalk between channels 1 CV,Y,Py,R,G,B	T2A T2A T15A T13A T15A T17A	SIG1	0.7	4M				-60	-50	dB
Crosstalk between channels 2 C,Pr,Pb	T4A T13A T17A	SIG3	0.7	4M				-60	-50	dB
Video S/N 1(SD) CV,Y	T2A T2A	SIG2	0.65		T36 T34	V_{IN}=Video (50%White) 6MHzLPF is selected. The band is between 100kHz and 4.2MHz.		-70	-60	dB
Video S/N 2(HD) Py,R,G,B	T15A T13A T15A T17A	SIG2	0.65		T22A T24A T22A T20A	V_{IN}=Video (50%White) 30MHzLPF is selected. The band is between 100kHz and 30MHz.		-60	-50	dB
G.D.1(SD) CV,Y	T2A T2A	SIG1	0.3	6M	T36 T34	6MHzLPF is selected. f=6MHz/100kHz		20	40	ns
G.D.2(SD) C	T4A	SIG3	0.3	6M	T32	6MHzLPF is selected. f=6MHz/100kHz		20	40	ns
G.D.3(HD) Py,R,G,B	T15A T13A T15A T17A	SIG1	0.3	12M	T22 T24 T22 T20	12MHzLPF is selected. f=12MHz/100kHz		10	20	ns
G.D.4(HD) Pr,Pb	T13A T17A	SIG3	0.3	12M	T24 T20	12MHzLPF is selected. f=12MHz/100kHz		10	20	ns
G.D.5(HD) Py,R,G,B	T15A T13A T15A T17A	SIG1	0.3	30M	T22A T24A T22A T20A	30MHzLPF is selected. f=30MHz/100kHz		10	20	ns
G.D.6(HD) Pr,Pb	T13A T17A	SIG3	0.3	30M	T24 T20	30MHzLPF is selected. f=30MHz/100kHz		10	20	ns

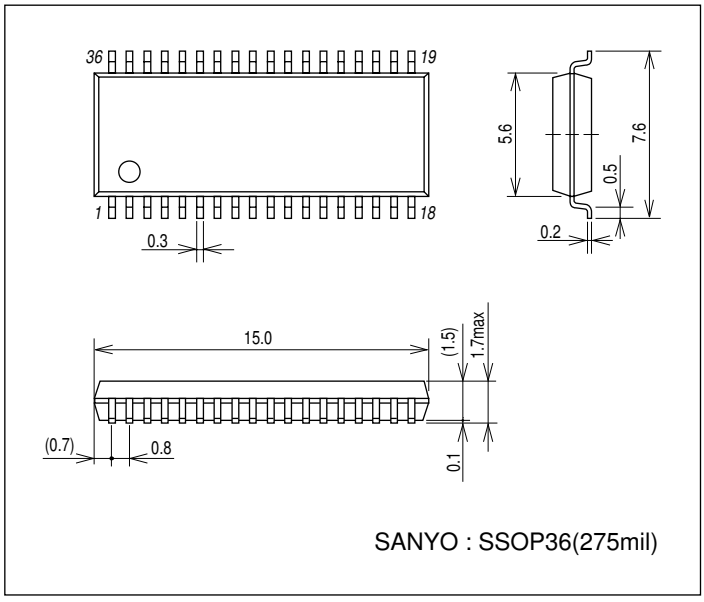
Pin Control Table

SW No.	IN_Pin No.	OUT_Pin No.	SW function name	Control voltage		
				High (2.3V to V_{CC})	Open	Low (0 to 0.7V)
SW1	Pin3		SD_MUTE_CTL	SD_MUTE_OFF		SD_MUTE_ON
SW2	Pin7		Power_Save_CTL	Power_Save_OFF		Power_Save_ON
SW3	Pin11		Input_CTL	CLAMP_ON (RGB_Mode)		BIAS_ON (Component_Mode)
SW4	Pin14		Filter_CTL	12MHz_LPF_ON		30MHz_LPF_ON
SW5	Pin16		HD_MUTE_CTL	HD_MUTE_OFF		HD_MUTE_ON
S_DC	Pin6	Pin31	S_DET	High (4.0V to V_{CC})	Midd (1.8 to 2.4V)	Low (0 to 0.5V)
D_L1	Pin8	Pin29	D_LINE1	High (4.0V to V_{CC})	Midd (1.8 to 2.4V)	Low (0 to 0.5V)
D_L2	Pin9	Pin28	D_LINE2	High (4.0V to V_{CC})		Low (0 to 0.5V)
D_L3	Pin10	Pin27	D_LINE3	High (4.0V to V_{CC})	Midd (1.8 to 2.4V)	Low (0 to 0.5V)

Package Dimensions

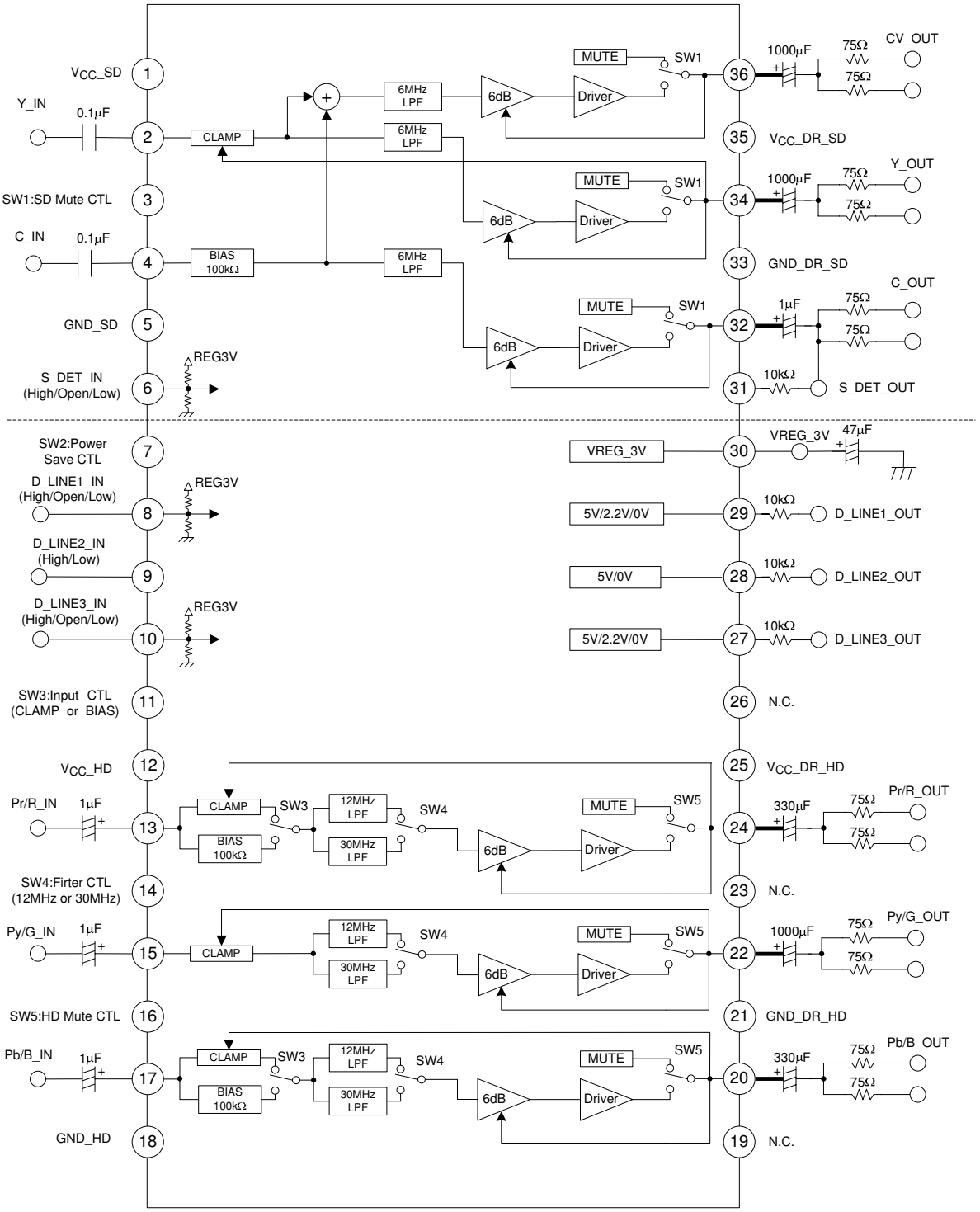
unit : mm (typ)

3247A



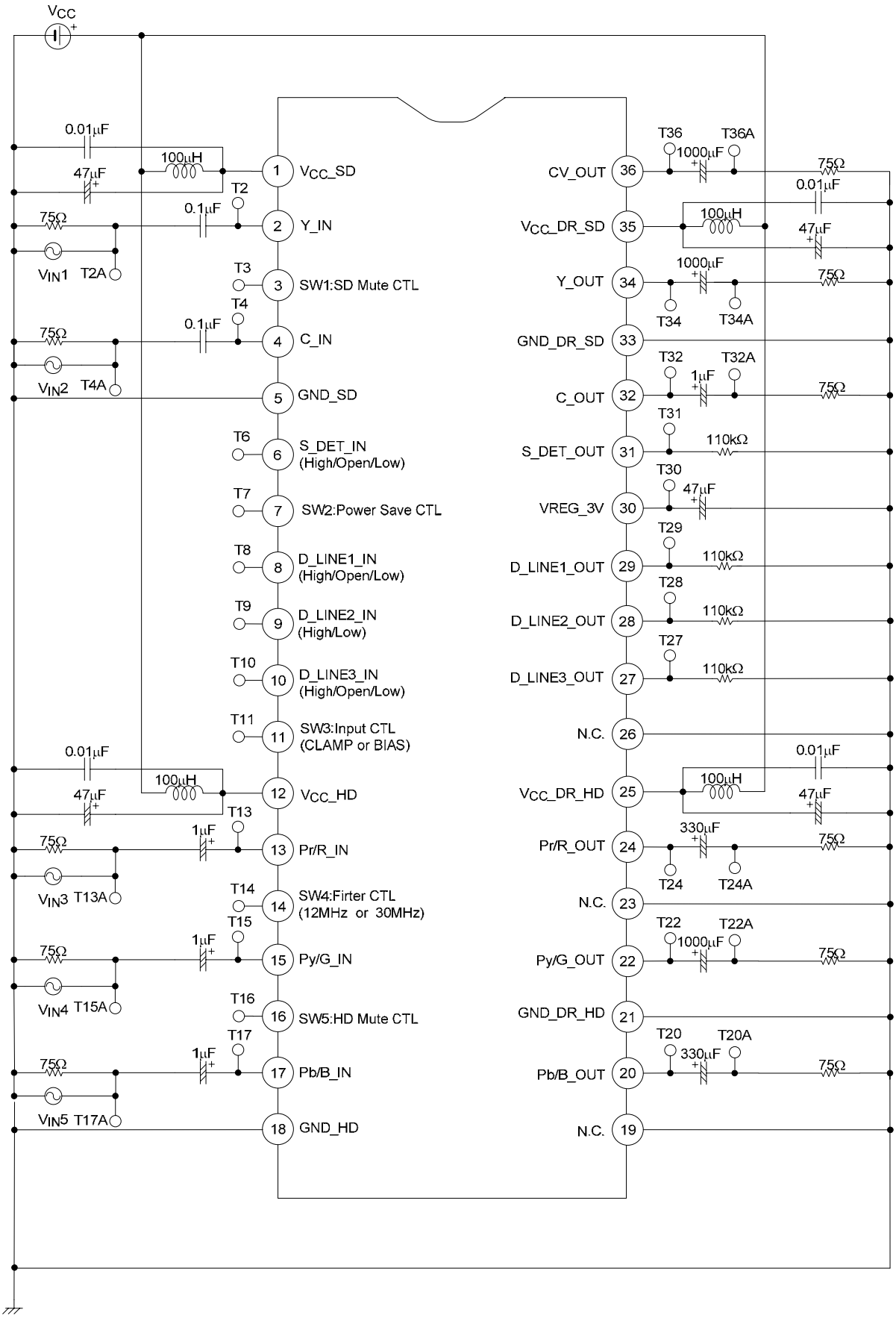
SANYO : SSOP36(275mil)

Block Diagram

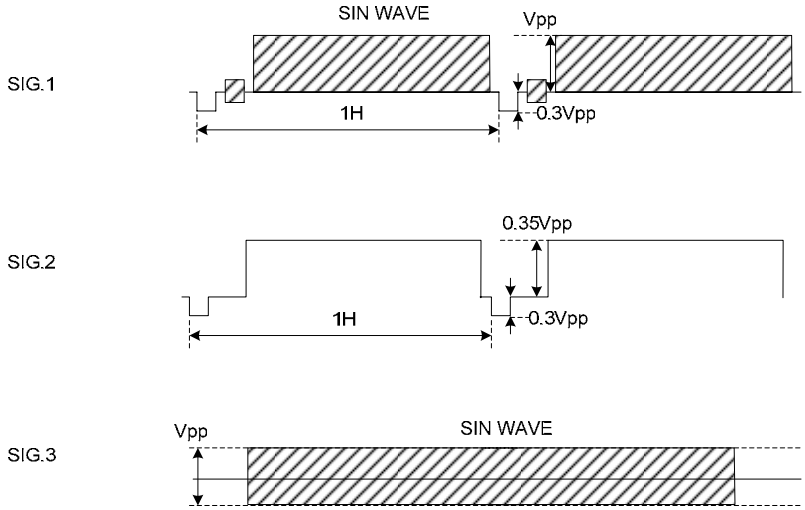


Please shorten the distance of the bold line to prevent oscillation.

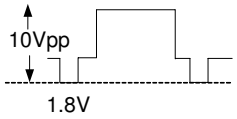
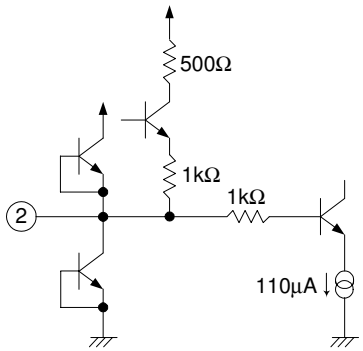
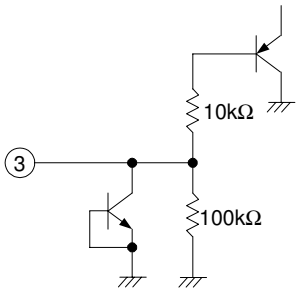
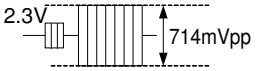
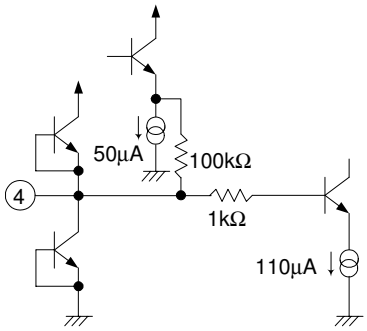
Sample Application Circuit



Test Input Signal



Pin Function

Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P1	V_{CC}_SD			
P2	Y_IN	1.8V		
P3	SD_MUTE_CTL	5V: SD_MUTE_OFF 0V: SD_MUTE_ON		
P4	C_IN	2.3V		

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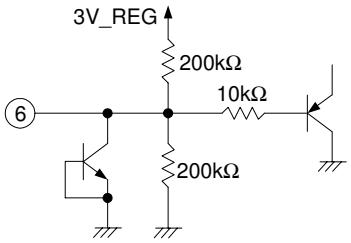
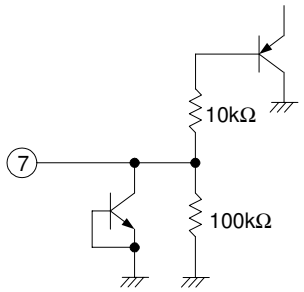
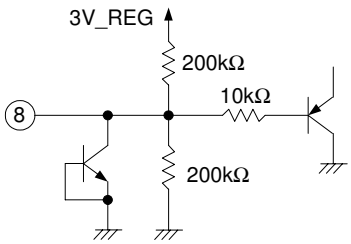
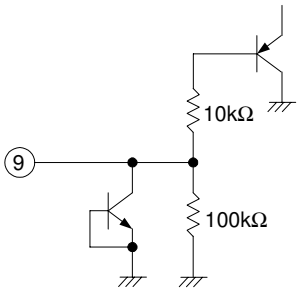
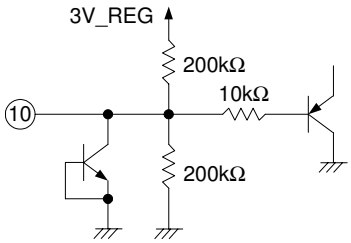
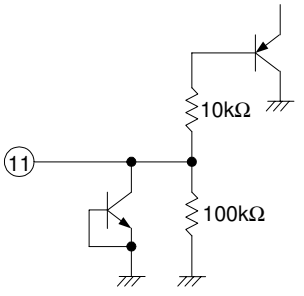
Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P5	GND_SD			
P6	S_DET_IN	5V: 16:9 OPEN: 4.3 Letter Box 0V: 4:3		
P7	Power_Save_CTL	5V: Power_Save_OFF 0V: Power_Save_ON		
P8	D_LINE1_IN	5V: 1125 (1080) OPEN: 750 (720) 0V: 525 (480)		
P9	D_LINE2_IN	5V: 59.94p/60p 0V: 59.94i/60i		
P10	D_LINE3_IN	5V: 16:9 OPEN: 4:3 Letter Box 0V: 4:3		
P11	INPUT_CTL	5V: Clamp 0V: Bias		

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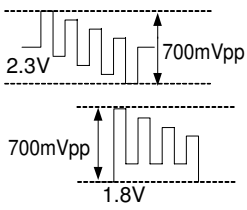
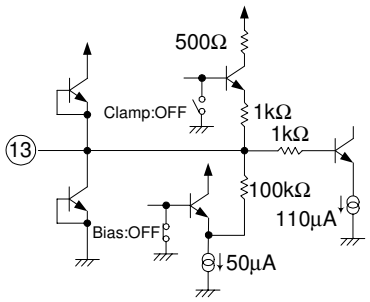
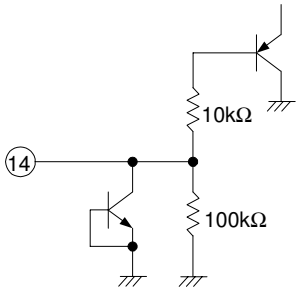
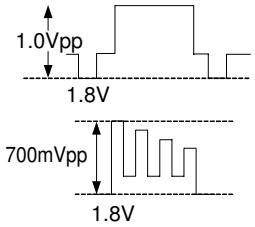
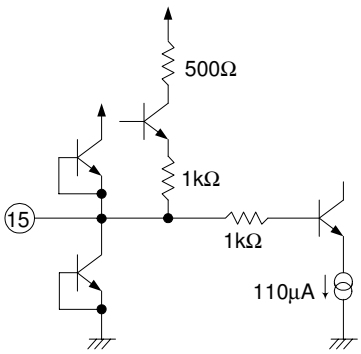
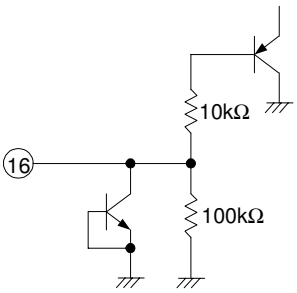
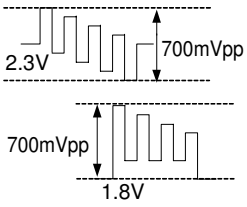
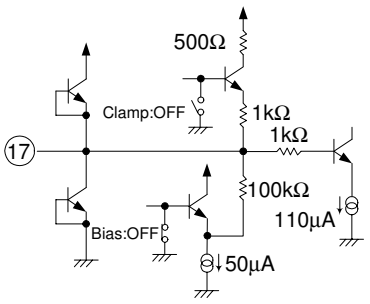
Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P12	V_{CC}_HD			
P13	Pr/R_IN	Component: 2.3V (Bias) RGB: 1.8V (Clamp)		
P14	FIL_CTL	5V: 12MHz_LPF 0V: 30MHz_LPF		
P15	Py/G_IN	1.8V		
P16	HD_MUTE_CTL	5V: HD_MUTE_OFF 0V: HD_MUTE_ON		
P17	Pb/B_IN	Component: 2.3V (Bias) RGB: 1.8V (Clamp)		

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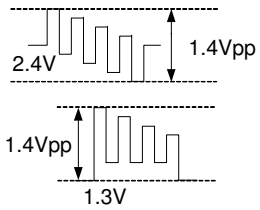
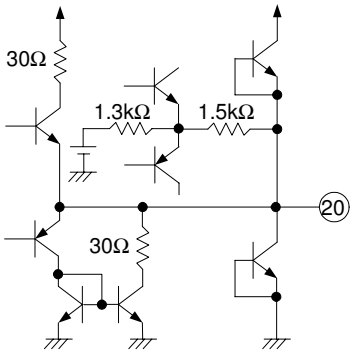
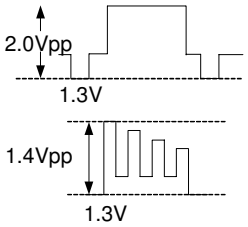
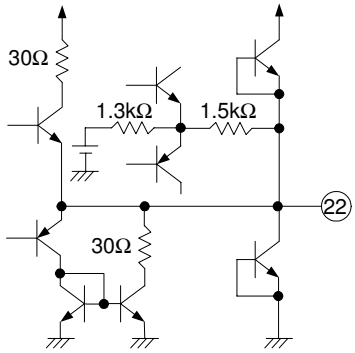
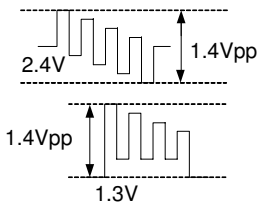
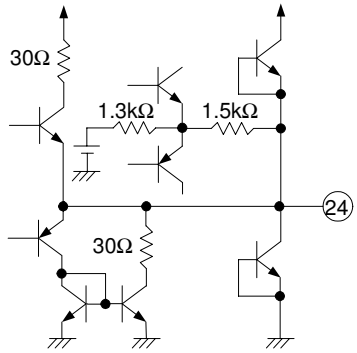
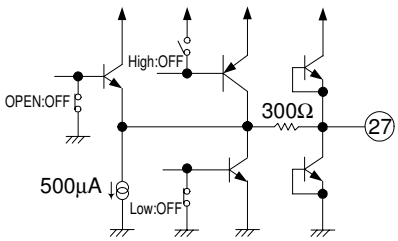
Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P18	GND_HD			
P19	N.C.			
P20	Pb/B_OUT	Component: 2.4V (Bias) RGB: 1.3V (Clamp)		
P21	GND_DR_HD			
P22	Py/G_OUT	1.3V		
P23	N.C.			
P24	Pr/R_OUT	Component: 2.4V (Bias) RGB: 1.3V (Clamp)		
P25	V_{CC}_DR_HD			
P26	N.C.			
P27	D_LINE3_OUT	5V: 16:9 2.2V: 4:3 Letter Box 0V: 4:3		

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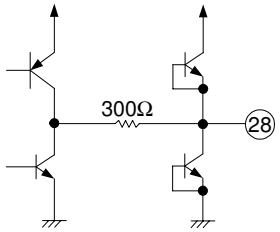
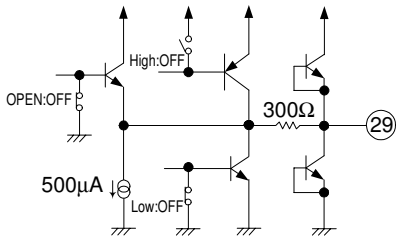
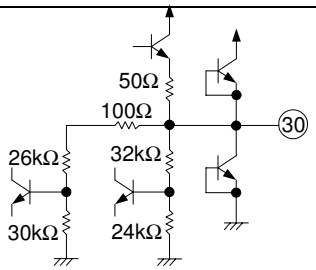
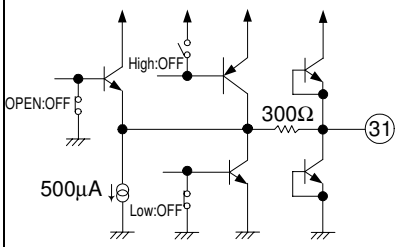
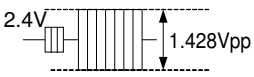
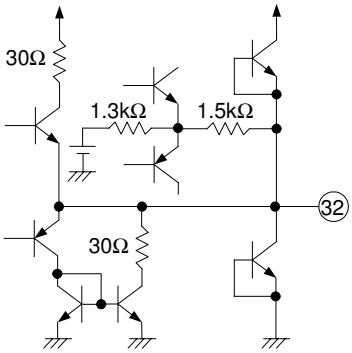
Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P28	D_LINE2_OUT	5V: 59.94p/60i 0V: 59.94i/60i		
P29	D_LINE1_OUT	5V: 1125 (1080) 2.2V: 750 (720) 0V: 525 (480)		
P30	REG3V	3.0V		
P31	S_DET_OUT	5V: 16:9 2.2V: 4:3 Lerrer Box 0V: 4:3		
P32	C_OUT	2.4V		
P33	GND_DR_SD			

Continued on next page.

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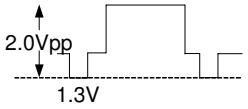
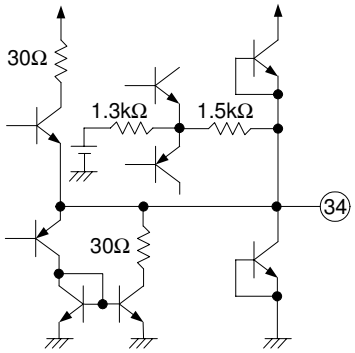
Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P34	Y_OUT	1.3V		
P35	V_{CC}_DR_SD			
P36	CV_OUT	1.3V