


**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 <sub>CC</sub> max		6.0	V
Allowable power dissipation	P <sub>d</sub> max	Ta≤75°C, Mounted on a circuit board*	780	mW
Operating temperature	T <sub>opr</sub>		-20 to +75	°C
Storage temperature	T <sub>stg</sub>		-40 to +150	°C

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

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# LA73062V

## Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V <sub>CC</sub>		5.0	V
Operating supply voltage range	V <sub>CCopg</sub>		4.75 to 5.25	V
Input pin voltage application range	V <sub>IN</sub>		-0.3 to V <sub>CCopg</sub> +0.3	V

## Electrical Characteristics at Ta=25°C, V<sub>CC</sub>=5.0V

Parameter	Input signal				Out Point	Test Condition	Ratings			unit
	Point	Signal	Level [Vpp]	Freq [Hz]			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
<b>Internal reference regulator</b>										
REG3V					T30		2.8	3.0	3.2	V
<b>Video driver part</b>										
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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# LA73062V

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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 <sub>IN</sub> =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 <sub>IN</sub> =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

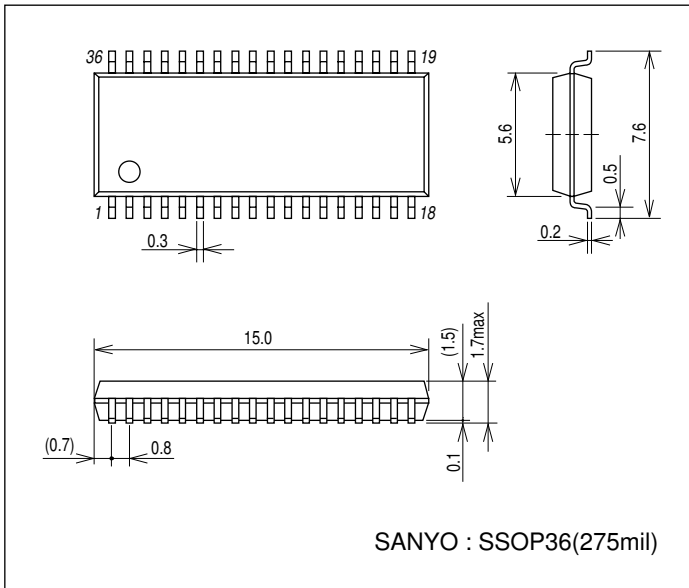
## Pin Control Table

SW No.	IN_Pin No.	OUT_Pin No.	SW function name	Control voltage		
				High (2.3V to V <sub>CC</sub> )	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 <sub>CC</sub> )	Midd (1.8 to 2.4V)	Low (0 to 0.5V)
D_L1	Pin8	Pin29	D_LINE1	High (4.0V to V <sub>CC</sub> )	Midd (1.8 to 2.4V)	Low (0 to 0.5V)
D_L2	Pin9	Pin28	D_LINE2	High (4.0V to V <sub>CC</sub> )		Low (0 to 0.5V)
D_L3	Pin10	Pin27	D_LINE3	High (4.0V to V <sub>CC</sub> )	Midd (1.8 to 2.4V)	Low (0 to 0.5V)

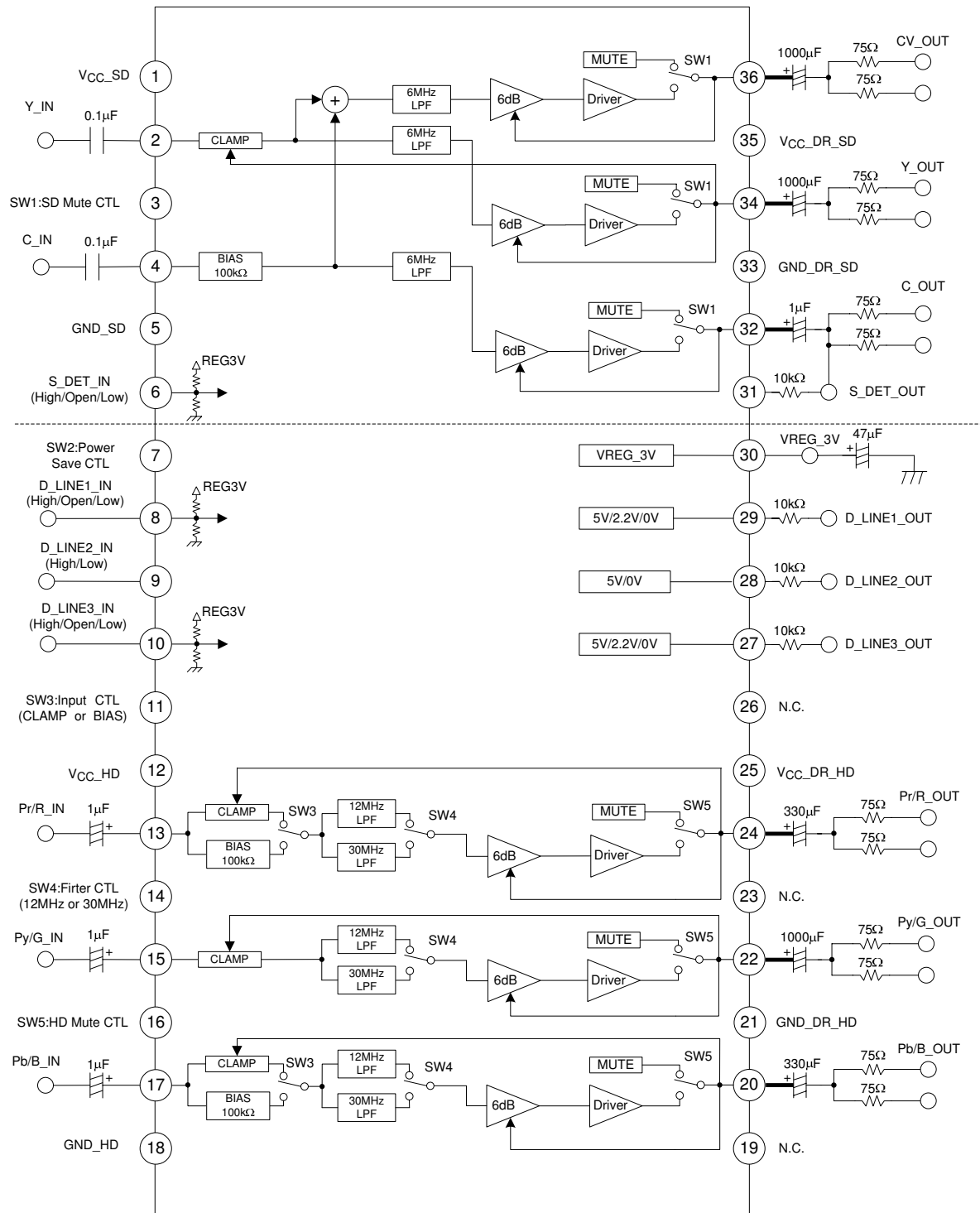
## Package Dimensions

unit : mm (typ)

3247A

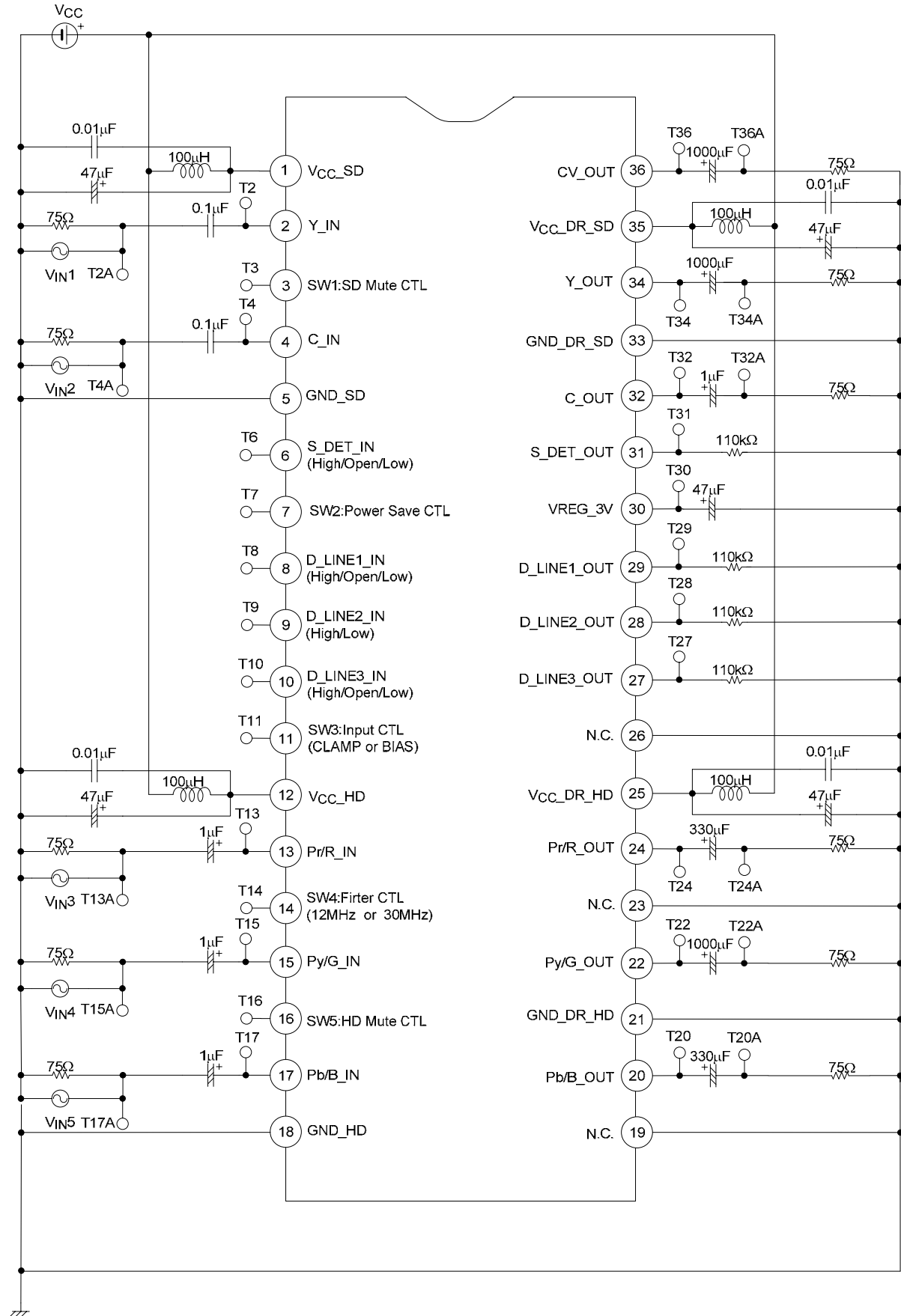


## Block Diagram

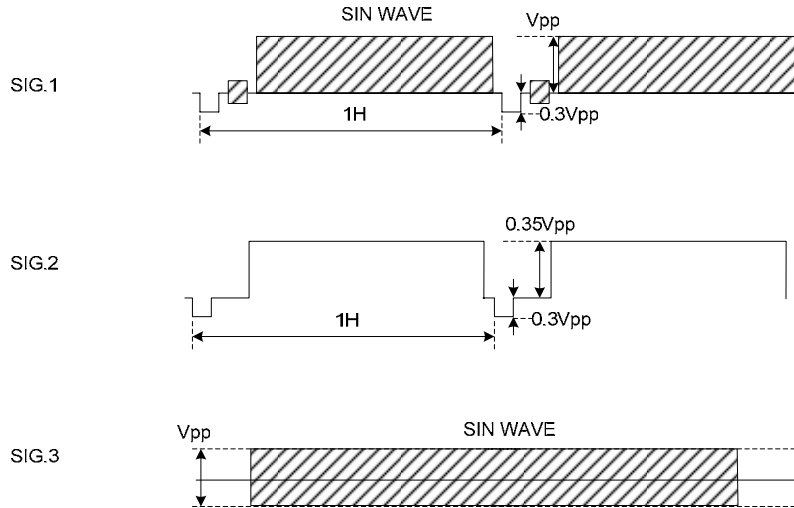


Please shorten the distance of the bold line to prevent oscillation.

## Sample Application Circuit



## Test Input Signal



## Pin Function

Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P1	V <sub>CC-SD</sub>			
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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# LA73062V

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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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# LA73062V

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Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P12	V <sub>CC</sub> _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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# LA73062V

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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	VCC_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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# LA73062V

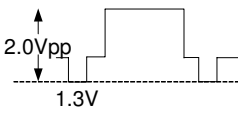
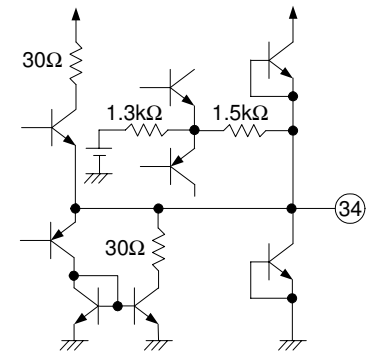
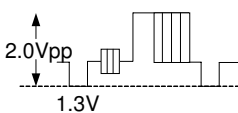
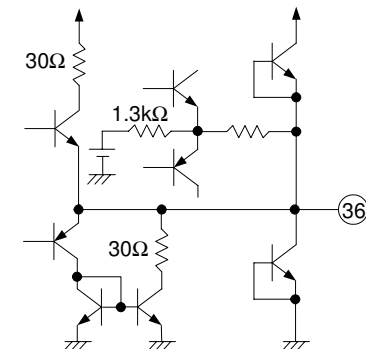
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Pin No.	Pin name	DC voltage	Signal wave form	In put / Out put form
P28	D_LINE2_OUT	5V: 59.94p/60i 0V: 59.94i/60i		
P29	D_LINE1_OUT	5V: 1125 (1080) 2.2V: 750 (720) 0V: 525 (480)		
P30	REG3V	3.0V		
P31	S_DET_OUT	5V: 16:9 2.2V: 4:3 Lerrer Box 0V: 4:3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

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# LA73062V

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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 <sub>CC</sub> _DR_SD			
P36	CV_OUT	1.3V		

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