



SANYO Semiconductors

DATA SHEET

LA73065VA

Monolithic Linear IC
For wideband
75Ω Video Driver

Overview

This LA73065VA is HD video driver. This IC output Component and RGB. It built in the 12MHz/30MHz-LPF. It is the best for the filter to remove the digital clock noise of the Component or RGB Analog video signal.

Functions

- Three channel output
- 12MHz or 30MHz low pass filter
- 6dB amplifier
- Output mute
- 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 *	500	mW
Operating temperature	T _{opr}		-20 to +75	°C
Storage temperature	T _{stg}		-40 to +150	°C

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

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 V _{CC} opg+0.3	

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Electrical Characteristics at Ta = 25°C, VCC = 5.0V

Parameter	Input signal				Out	Conditions	min	typ	max	unit
	Point	Signal	Level [Vp-p]	Freq [Hz]	Point					
Current consumption 1	-	-	-	-	-	At no signal.	36	45	54	mA
Current consumption 2	-	-	-	-	-	At no signal. Standby mode.	0.0	0.5	1.0	mA
Internal reference regulator										
REG3V	-	-	-	-	T24		2.8	3.0	3.2	V
Video Driver part										
Voltage gain 1 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.3	100k	T16 T18 T16 T14	Output gain	5.5	6.0	6.5	dB
Voltage gain 2 Pr, Pb	T7A T11A	SIG3	0.3	100k	T18 T14	Output gain	5.5	6.0	6.5	dB
Frequency response 1 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.3	12M	T16 T18 T16 T14	12MHz LPF is selected. f = 12MHz/100kHz	-3	0.0	3	dB
Frequency response 2 Pr, Pb	T7A T11A	SIG3	0.3	12M	T18 T14	12MHz LPF is selected. f = 12MHz/100kHz	-3	0.0	3	dB
Frequency response 3 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.3	75M	T16 T18 T16 T14	12MHz LPF is selected. f = 75MHz/100kHz		-40	-30	dB
Frequency response 4 Pr, Pb	T7A T11A	SIG3	0.3	75M	T18 T14	12MHz LPF is selected. f = 75MHz/100kHz		-40	-30	dB
Frequency response 5 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.3	20M	T16 T16 T16 T14	30MHz LPF is selected. f = 20MHz/100kHz	-1	0.0	1	dB
Frequency response 6 Pr, Pb	T7A T11A	SIG3	0.3	20M	T18 T14	30MHz LPF is selected. f = 20MHz/100kHz	-1	0.0	1	dB
Frequency response 7 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.3	30M	T16 T16 T16 T14	30MHz LPF is selected. f = 30MHz/100kHz	-3.5	-1.0	1.5	dB
Frequency response 8 Pr, Pb	T7A T11A	SIG3	0.3	30M	T18 T14	30MHz LPF is selected. f = 30MHz/100kHz	-3.5	-1.0	1.5	dB
Frequency response 9 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.3	75M	T16 T16 T16 T14	30MHz LPF is selected. f = 75MHz/100kHz		-40	-30	dB
Frequency response 10 Pr, Pb	T7A T11A	SIG3	0.3	75M	T18 T14	30MHz LPF is selected. f = 75MHz/100kHz		-40	-30	dB
2nd order distortion 1 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.7	10M	T16 T18 T16 T14	30MHz LPF is selected.		-40	-30	dB
2nd order distortion 2 (HD) Pr, Pb	T7A T11A	SIG3	0.7	10M	T18 T14	30MHz LPF is selected.		-40	-30	dB
Amount of mute attenuation 1 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.7	4M	T16 T18 T16 T14			-60	-50	dB
Amount of mute attenuation 2 Pr, Pb	T7A T11A	SIG3	0.7	4M	T18 T14			-60	-50	dB
Crosstalk between channels 1 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.7	4M				-60	-50	dB

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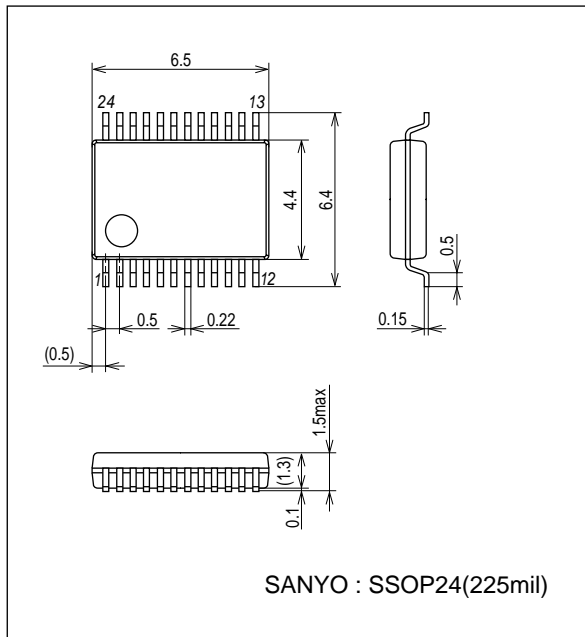
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Parameter	Input signal				Out	Conditions	min	typ	max	unit
	Point	Signal	Level [Vp-p]	Freq [Hz]	Point					
Crosstalk between channels 2 Pr, Pb	T7A T11A	SIG3	0.7	4M				-60	-50	dB
Video S/N Py, R, G, B	T9A T7A T9A T11A	SIG2	0.65		T16 T18 T16 T14	V _{IN} = Video (50% White) 30MHz LPF is selected. The band is between 100kHz and 30MHz.		-60	-50	dB
G.D.1 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.3	12M	T16 T18 T16 T14	12MHz LPF is selected. f = 12MHz/100kHz		10	20	ns
G.D.2 Pr, Pb	T7A T11A	SIG3	0.3	12M	T18 T14	12MHz LPF is selected. f = 12MHz/100kHz		10	20	ns
G.D.3 Py, R, G, B	T9A T7A T9A T11A	SIG1	0.3	30M	T16 T18 T16 T14	30MHz LPF is selected. f = 30MHz/100kHz		10	20	ns
G.D.4 Pr, Pb	T7A T11A	SIG3	0.3	30M	T18 T14	30MHz LPF is selected. f = 30MHz/100kHz		10	20	ns

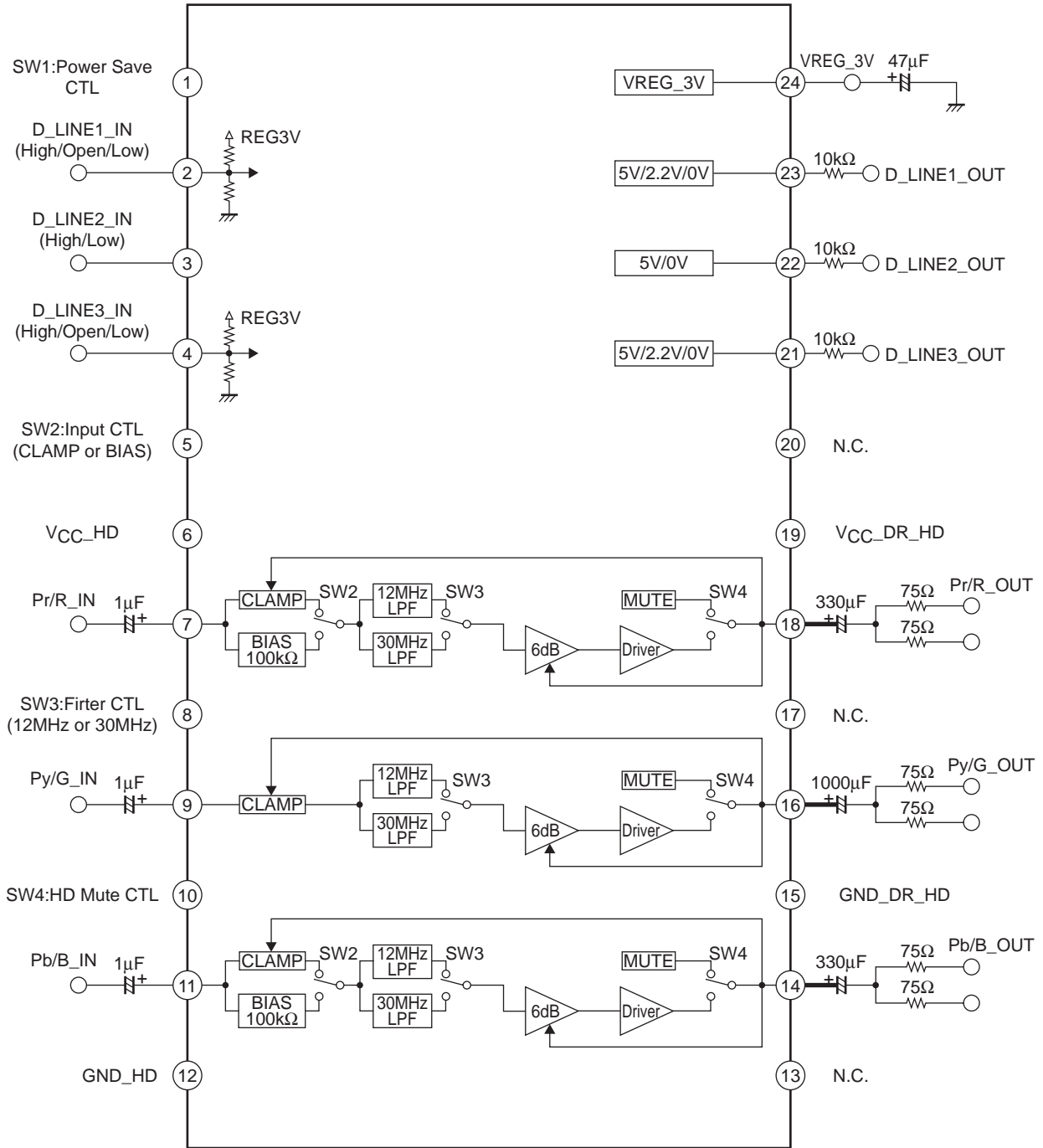
Package Dimensions

unit : mm (typ)

3287



Block Diagram



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

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	Pin1		Power_Save_CTL	Power_Save_OFF		Power_Save_ON
SW2	Pin5		Input_CTL	CLAMP_ON (RGB_Mode)		BIAS_ON (Component_Mode)
SW3	Pin8		Filter_CTL	12MHz_LPF_ON		30MHz_LPF_ON
SW4	Pin10		HD_MUTE_CTL	HD_MUTE_OFF		HD_MUTE_ON
D_L1	Pin2	Pin23	D_LINE1	High (4.0V to V _{CC})	Midd (1.8 to 2.4V)	Low (0 to 0.5V)
D_L2	Pin3	Pin22	D_LINE2	High (4.0V to V _{CC})		Low (0 to 0.5V)
D_L3	Pin4	Pin21	D_LINE3	High (4.0V to V _{CC})	Midd (1.8 to 2.4V)	Low (0 to 0.5V)

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Pin Functions

Pin No.	Pin name	DC voltage	Signal wave form	Input/Output form
1	Power_Save_CTL	5V : Power_Save_OFF 0V : Power_Save_ON		
2	D_LINE1_IN	5V : 1125 (1080) OPEN : 750 (720) 0V : 525 (480)		
3	D_LINE2_IN	5V : 59.94p/60p 0V : 59.94i/60i		
4	D_LINE3_IN	5V : 16 : 9 OPEN : 4 : 3 Letter Box 0V : 4 : 3		
5	INPUT_CTL	5V : Clamp 0V : Bias		

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Pin No.	Pin name	DC voltage	Signal wave form	Input/Output form
6	VCC_HD			
7	Pr/R_IN	Component : 2.3V (Bias) RGB : 1.8V (Clamp)		
8	FIL_CTL	5V : 12MHz_LPF 0V : 30MHz_LPF		
9	Py/G_IN	1.8V		
10	HD_MUTE_CTL	5V : HD_MUTE_OFF 0V : HD_MUTE_ON		

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Pin No.	Pin name	DC voltage	Signal wave form	Input/Output form
11	Pb/B_IN	Component : 2.3V (Bias) RGB : 1.8V (Clamp)		
12	GND_HD			
13	N.C.			
14	Pb/B_OUT	Component : 2.4V (Bias) RGB : 1.3V (Clamp)		
15	GND_DR_HD			
16	Py/G_OUT	1.3V		
17	N.C.			

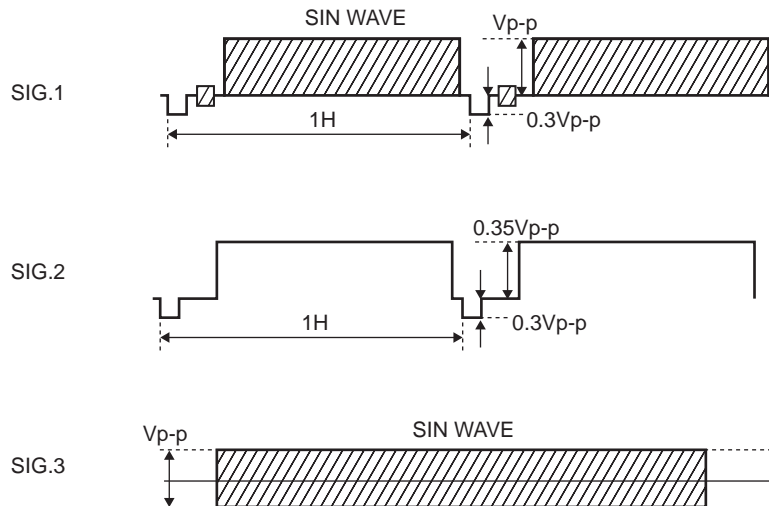
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Pin No.	Pin name	DC voltage	Signal wave form	Input/Output form
18	Pr/R_OUT	Component : 2.4V (Bias) RGB : 1.3V (Clamp)		
19	VCC_DR_HD			
20	N.C.			
21	D_LINE3_OUT	5V : 16 : 9 2.2V : 4 : 3Letter Box 0V : 4 : 3		
22	D_LINE2_OUT	5V : 59.94p/60p 0V : 59.94i/60i		
23	D_LINE1_OUT	5V : 1125 (1080) 2.2V : 750 (720) 0V : 525 (480)		
24	REG3V	3.0V		

Test Input Signal



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