



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 <sub>CC</sub> max		6.0	V
Allowable power dissipation	Pd max	Ta ≤ 75°C *	500	mW
Operating temperature	T <sub>opr</sub>		-20 to +75	°C
Storage temperature	T <sub>stg</sub>		-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 <sub>CC</sub>		5.0	V
Operating supply voltage range	V <sub>CC</sub> opg		4.75 to 5.25	V
Input pin voltage application range	V <sub>IN</sub>		-0.3 to V <sub>CC</sub> opg+0.3	

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**SANYO Semiconductor Co., Ltd.**

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# LA73065VA

## 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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# LA73065VA

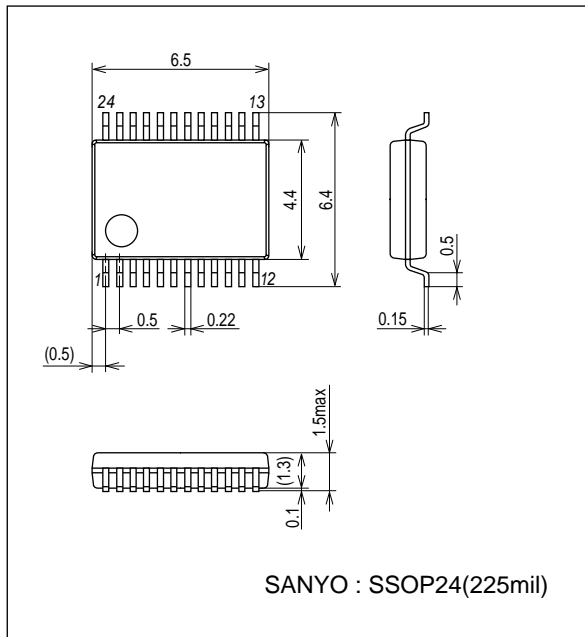
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Parameter	Input signal				Out	Conditions	min	typ	max	unit
	Point	Signal	Level [Vp-p]	Freq [Hz]	Point					
Crosstalk between channels 2 Pr, Pb	T7A T11A	SIG3	0.7	4M				-60	-50	dB
Video S/N Py, R, G, B	T9A T7A T9A T11A	SIG2	0.65		T16 T18 T16 T14	V <sub>IN</sub> = 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

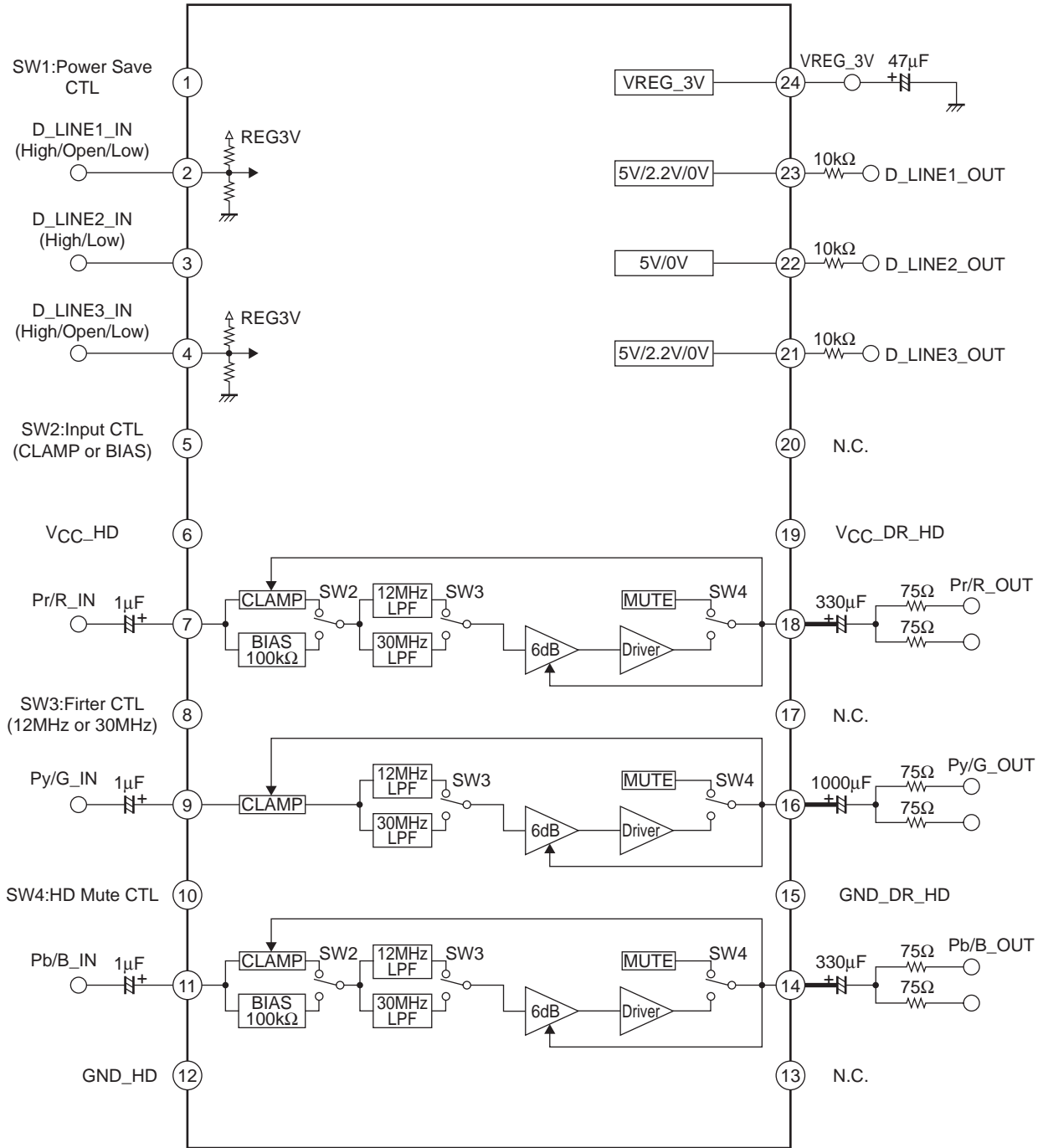
## Package Dimensions

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 <sub>CC</sub> )	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 <sub>CC</sub> )	Midd (1.8 to 2.4V)	Low (0 to 0.5V)
D_L2	Pin3	Pin22	D_LINE2	High (4.0V to V <sub>CC</sub> )		Low (0 to 0.5V)
D_L3	Pin4	Pin21	D_LINE3	High (4.0V to V <sub>CC</sub> )	Midd (1.8 to 2.4V)	Low (0 to 0.5V)

# LA73065VA

## 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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# LA73065VA

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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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# LA73065VA

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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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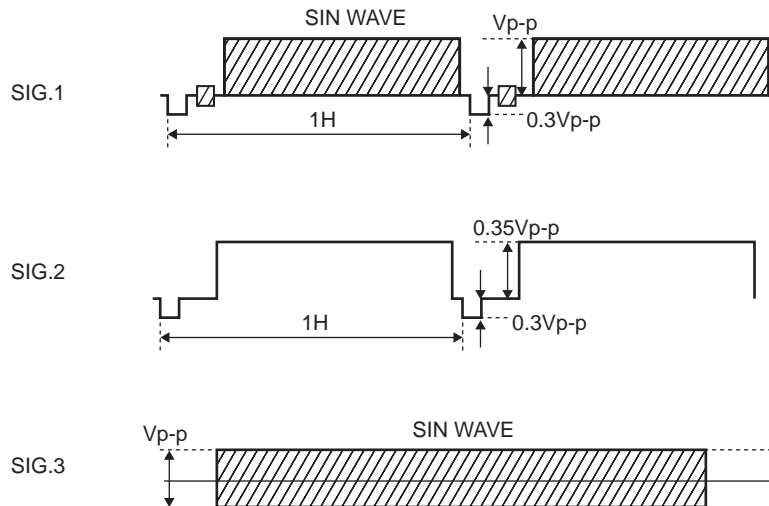
# LA73065VA

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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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