

SANYO Semiconductors **DATA SHEET**

LA73052 —

Monolithic Linear IC

4ch 75 Ω Video Driver

Overview

This LA73052 is a 4ch 75Ω Video Driver IC. The LA73052 is ideal for use the video output driver such as VCR and DVD-player equipment.

Functions

- 6dB AMP+driver (2ch)
- 2input-1output SW+6dB AMP+driver (2ch)

Specifications

Maximum Ratings at $Ta = 25^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V _{CC} max		±7, +14	V
Allowable power dissipation	Pd max	Ta ≤ 80°C *	700	mW
Operating temperature	Topr		-20 to +80	°C
Storage temperature	Tstg		-55 to +150	°C

 $[\]ast$ When mounted on a 114.3×76.1×1.6mm³ glass epoxy board.

Recommended Operating Conditions at $Ta = 25^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Recommending operation voltage	Vcс		±5	V
			+9	
Operating voltage range	VCC ob		±4.0 to ±5.5	V
			+8 to +10	

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Electrical Characteristics at Ta = 25°C, $V_{CC} = \pm 5V$

Demonstra	O. mah ad	O and this area		Ratings		11-2
Parameter	Symbol	Conditions	min	typ	max	Unit
Current dissipation	I _{CC} 1	No signal	46.8	55	63.2	mA
Voltage gain	VG	V _{IN} = 1Vp-p, f = 4.43MHz	5.7	6.2	6.7	dB
Frequency characteristics 1	VF1	V _{IN} = 1Vp-p, f = 100k/5MHz	-1.0	0	1.0	dB
Frequency characteristics 2	VF2	V _{IN} = 1Vp-p, f = 100k/27MHz		-25	-20	dB
Group delay	GD	f = 100k/4.43MHz		±10	±15	ns
Maximum output level	V _O max	f = 1kHz, THD = 1%	3.0	4.0		Vp-p
Control voltage H level	VcntH	Pins 12, 24, 28, 30, 33 input voltage	2.5		Vcc	V
Control voltage L level	VcntL	Pins 12, 24, 28, 30, 33 input voltage	0		1.0	V

Design guarantee items

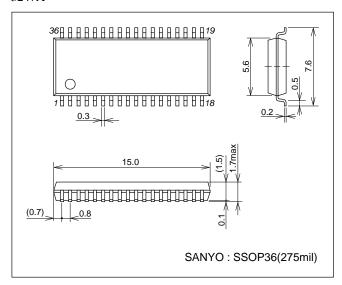
Description	0	Our Hillians	Ratings		1.1-2	
Parameter	Symbol	Symbol Conditions	min	typ	max	Unit
Video S/N	VG _{1V}			-75	-70	dB
Differential Gain	DG	V _{IN} = 1Vp-p, RAMP signal			1.0	%
Differential Phase	DP	V _{IN} = 1Vp-p, RAMP signal			1.0	deg.
Mute attenuation	VMUTEV	V _{IN} = 1Vp-p, f = 4.43MHz		-60	-55	dB
Cross-talk between	VCTKV	V _{IN} = 1Vp-p, f = 4.43MHz		-60	-55	dB
channel						

Truth Table

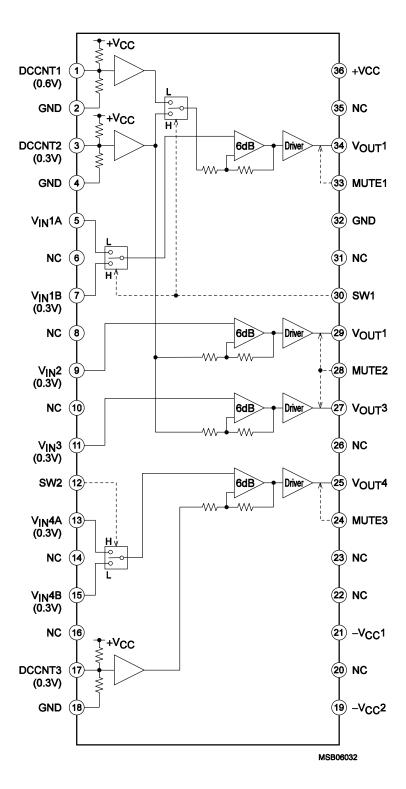
	Pin 12	Pin 30	Pins 24, 28, 33
Н	V _{IN} 4A	V _{IN} 1B	THROUTH
L	V _{IN} 4B	V _{IN} 1A	MUTE

Package Dimensions

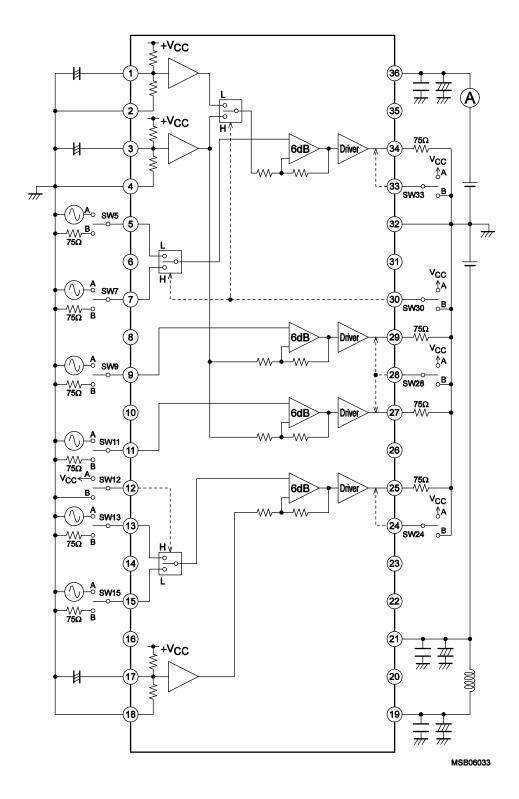
unit : mm 3247A



Block Diagram



Test Circuit Diagram (Using ±power supply)



LA73052

Pin Functions

DCCNT2 DCCNT3 DCCNT2 DC offset mode change seminal between input and output. When a condenser is input at the position between input and output of 1.0 DC offset between input and output of 2.0 DC offset between input and output of 4.0 DC offset between input and output	Pin No.	Pin Name	Terminal Explanation	Equivalent Circuit
3 DCCNT2 DCCNT3			·	Equivalent Circuit
DCCNT1 and GND, the operation of IC becomes the mode with Col VD Colfest between input and output of 1ch (pins 5 and 34).				
with 0.6 VD.C offset between input and output of 1ch (pins 5 and 34). Similarly when a condenser is input at the position between pin 3 (DCCNT2) and GND, it becomes the mode with 0.3 VD. offset between input and output of 1, 2.3 chi (pins 1 and 34). inspect of 1 and 27), and when a condenser is input at the position between pin 1 (DCCNT3) and GND, it becomes the mode with 0.3 VD. offset between input and output of 4.2 chips 1 and 1 a				
Similarly when a condensers is input at the position between pin 3 (DCCNT2) and GND, it becomes the mode with 0.3V DC offset between input and output of 1, 2, 3ch (pins 7 and 34, pins 9 and 28, pins 11 and 27, and when a condensers is input at the position between pin 1 ft (DCCNT3) and GND, it becomes the mode with 0.3V DC offset between input and output of 4ch (pins 13 or 15, and pin 31). And when pins 1, 3, 17 and GND is shorted, it becomes the mode with 0.3V DC offset between input and output. QND	17	DCCNT3		+Vcc +Vcc
Similarly when a condenser is input at the position between pin 3 (DCCNT2) and DSD, it becomes the mode with 0.3 V DC offset between input and output of 1, 2, 3ch (pins 7 and 34, pins 9 and 29, pins 11 and 27), and when a condenser is input at the position between pin 17 (DCCNT3) and CSND, it becomes the mode with 0.3 V DC offset between input and output of 4ch (pins 13 or 15, and pin 31). And when pins 1, 3, 17 and GND is shorted, it becomes the mode without DC offset between input and output. 2 GND Both ±power supply and +power supply are GND. 1 Input terminal. Non-bias. It is possible to use with being directly connected with the coupling. 1 Input terminal. Non-bias. It is possible to use with being directly connected with the coupling. 1 Vin/14 1 Vin/18 1 Vin/14 1 Vin/18 1 Vin/14 1 Vin/18 1 Vin/14 1 Vin/18 2 Vin/14 1 Vin/18 2 Vin/14 1 Vin/18 2 Vin/14 1 Vin/19 2 Vin/14 2 Vin/14 2 Vin/14 3 Vin/15 2 Vin/14 3 Vin/15 Vin/16 2 Vin/16 3 Vin/16 4 Vin/16 4 Vin/17 4 Vin/18 5 Vin/14 5 Vin/16 5 Vin/16 6 Vin/16 6 Vin/16 6 Vin/17 6 Vin/16				↑ ↑ ↑
pin 3 (DCCNT2) and GND, it becomes the mode with 0.3V DC offset between input and output of 1, 2, 3ch (pins 7 and 34, pins 1 and 27), and when a condenser is input at the position between pin 17 (DCCNT3) and GND, it becomes the mode with 0.3V DC offset between input and output of 4ch (pins 13 or 15, and pin 31). And when pins 1, 3. 17 and GND is shorted, it becomes the mode without DC offset between input and output of 4ch (pins 13 or 15, and pin 31). Both apower supply and +power supply are GND. Solvent and the pins 1, 3. 17 and GND is shorted, it becomes the mode without DC offset between input and output. Both apower supply and +power supply are GND. Input terminal. Non-bias. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. Non-bias. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. Charpsover terminal of Mute or input Switch Vinta or input Switch Size Switch When the Mute terminal is Low, it is Mute. Charpsover terminal of Mute or input Switch Swi				
offset between input and output of 1, 2, 3nh (pins 7 and 34, pins 9 and 29, pins 11 and 27), and when a condenser is input at the position between pin 17 (DCCNT3) and GND, it becomes the mode with 0.3 V DC offset between input and output of 4ch (pins 13 or 15, and pin 31). And when pins 1, 3, 17 and GND is shorted, it becomes the mode without DC offset between input and output of 4ch (pins 13 or 15, and pin 31). And when pins 1, 3, 17 and GND is shorted, it becomes the mode without DC offset between input and output. Both ±power supply and +power supply are GND. Input terminal. Non-blas. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. When DC. When DC. When DC. Coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. When DC. Coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. When DC. Coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. When DC. Coupling, it is necessary to add bias after the coupling. Non-blas. It is possible to use with being directly connected with DC. Coupling, it is necessary to add bias after the coupling. Non-blas. It is non-blas. It is non-blas. It is non-blas. It				→ ≥ ' -
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position between pin 17 (DCCNT3) and GND, it becomes the mode with 0.3V DC offset between input and output of 4ch (pins 13 or 15, and pin 31). And when pins 1, 3, 17 and GND is shorted, it becomes the mode without DC offset between input and output. 2 GND Both apower supply and +power supply are GND. 5 V _{IN} 1A 7 V _{IN} 1B 9 V _{IN} 2 911 V _{IN} 3 13 V _{IN} 4A 15 V _{IN} 4B 15 V _{IN} 4B 15 V _{IN} 4B 16 C. When DC coupling, it is necessary to add bias after the coupling. 6 NC 8				
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(pins 13 or 15, and pin 31). And when pins 1, 3, 17 and GND is shorted, it becomes the mode without Dc Offset between input and output. 2 GND Both spower supply and +power supply are GND. 5 V _{IN} 1A 7 V _{IN} 2 11 V _{IN} 3 13 V _{IN} 4A 15 V _{IN} 4B 6 NC 8 10 14 16 20 22 23 3 26 31 35 12 SW2 24 MUTE3 28 MUTE2 28 MUTE3 30 SW1 33 MUTE1 Changeover terminal of Mute or Input Switch When the Mute terminal is Low, it is Mute. Changeover of Input Switch is: SW2 High: V _{IN} 4A Low: V _{IN} 4B When the terminal is Open, it is Low.			position between pin 17 (DCCNT3) and GND, it becomes the	↑
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And when pins 1, 3, 17 and GND is shorted, it becomes the mode without DC offset between input and output. 2 GND Both spower supply and +power supply are GND. 5 V _{IN} 1A V _{IN} 1B V _{IN} 2 Non-bias. It is possible to use with being directly connected with DC. When DC coupling, it is necessary to add bias after the coupling. 13 V _{IN} 4A V _{IN} 4B V _{IN} 4A V _{IN} 4B 6 NC 8 NC			(pins 13 or 15, and pin 31).	-V _{CC} pin2,4,18
Solution of the coupling of th			And when pins 1, 3, 17 and GND is shorted, it becomes the	
A 18 32			mode without DC offset between input and output.	
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9			· ·	
11	7		Non-bias. It is possible to use with being directly connected	
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15 V _{IN} 4B 10			the coupling.	9pF
1.2kΩ 1.6kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2kΩ 1.2				<u> </u>
1.2kΩ 1.6kΩ 1.2k	15	V _{IN} 4B		↑
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6				-Vcc -Vcc
8				MSP06323
8		NO		
10 14 16 20 22 23 26 31 35 12		NC		
14 16 20 22 23 26 31 35 12 SW2 MUTE3 MUTE3 MUTE2 30 SW1 33 MUTE1 SW1 High: V _{IN} 1B Low: V _{IN} 1A SW2 High: V _{IN} 4A Low: V _{IN} 4B When the terminal is Open, it is Low.				
16 20 22 23 26 31 35 12 SW2 Changeover terminal of Mute or Input Switch When the Mute terminal is Low, it is Mute. 24 MUTE3 MUTE2 28 MUTE2 30 SW1 High: VIN1B Low: VIN1A SW2 High: VIN4A Low: VIN4B When the terminal is Open, it is Low.				
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31 35 12 SW2 Changeover terminal of Mute or Input Switch When the Mute terminal is Low, it is Mute. Changeover of Input Switch is: SW1 High: V _{IN} 1B Low: V _{IN} 1A SW2 High: V _{IN} 4A Low: V _{IN} 4B When the terminal is Open, it is Low.				
12 SW2 Changeover terminal of Mute or Input Switch 24 MUTE3 When the Mute terminal is Low, it is Mute. 28 MUTE2 Changeover of Input Switch is: 30 SW1 SW1 High: V _{IN} 1B 33 MUTE1 SW2 High: V _{IN} 4A Low: V _{IN} 4A Low: V _{IN} 4B When the terminal is Open, it is Low.				
12 SW2 Changeover terminal of Mute or Input Switch When the Mute terminal is Low, it is Mute. 28 MUTE2 Changeover of Input Switch is: 30 SW1 SW1 High: V _{IN} 1B Low: V _{IN} 1A SW2 High: V _{IN} 4A Low: V _{IN} 4B When the terminal is Open, it is Low.				
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Low: V _{IN} 4B When the terminal is Open, it is Low.				gko -
When the terminal is Open, it is Low.				
-Vcc				
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Pin No.	Pin Name	Terminal Explanation	Equivalent Circuit
19	-V _{CC} .	-V _{CC} of using ±power supply. Using +power supply, it is GND.	
21			
25	V _{OUT} 4	Output terminal	
27	V _{OUT} 3	Using ±power supply, in case of the mode with DC offset, it is	+Vcc +Vcc
29	V _{OUT} 2	possible to use without capacitor of output by setting	↑
34	V _{OUT} 1	pin 5 to 0.6V-bias and by setting pins 7, 9, 11, 13, 15 to	
		0.3V-bias. And in case of the mode without DC offset, it is	*
		possible to use without capacitor of output by setting each input	
		to zero-bias. When using +power supply, both of the modes	
		needs coupling capacitor.	-Vcc
			-vcc
			MSP06326
36	+VCC	Both ±power supply and +power supply are +V _{CC} .	

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