



SANYO Semiconductors

DATA SHEET

LA73053 — Monolithic Linear IC 6ch 75Ω Video Driver

Overview

This LA73053 is a 6ch 75Ω Video Driver IC. The LA73053 is ideal for use the video output driver such as VCR and DVD-player equipment.

Functions

- 6dB AMP+driver (6ch)

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V _{CC} max		±7, +14	V
Allowable power dissipation	Pd max	Ta ≤ 80°C *	780	mW
Operating temperature	Topr		-20 to +80	°C
Storage temperature	Tstg		-55 to +150	°C

* When mounted on a 114.3×76.1×1.6mm³ glass epoxy board.

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommending operation voltage	V _{CC}		±5, +9	V
Operating voltage range	V _{CC} op		±4.0 to ±5.5 +8 to +10	V

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Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = \pm 5\text{V}$, The mode with DC offset.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current dissipation	I_{CC1}	No signal	58.3	68.5	75.3	mA
Voltage gain	VG	$V_{IN} = 1\text{Vp-p}$, $f = 4.43\text{MHz}$	5.7	6.2	6.7	dB
Frequency characteristics 1	VF1	$V_{IN} = 1\text{Vp-p}$, $f = 100\text{k}/5\text{MHz}$ 1, 2, 3ch	-1.0	0	1.0	dB
Frequency characteristics 2	VF2	$V_{IN} = 1\text{Vp-p}$, $f = 100\text{k}/10\text{MHz}$ 4, 5, 6ch	-1.0	0	1.0	dB
Frequency characteristics 3	VF3	$V_{IN} = 1\text{Vp-p}$, $f = 100\text{k}/27\text{MHz}$ 1, 2, 3ch		-25	-20	dB
Frequency characteristics 4	VF4	$V_{IN} = 1\text{Vp-p}$, $f = 100\text{k}/54\text{MHz}$ 4, 5, 6ch		-25	-20	dB
Group delay	GD	$f = 100\text{k}/4.43\text{MHz}$		± 10	± 15	ns
Maximum output level	$V_O \text{ max}$	$f = 1\text{kHz}$, THD = 1%	3.0	4.0		Vp-p
Control voltage H level	V_{cntH}	Pins 7, 16 input voltage	2.5		V_{CC}	V
Control voltage L level	V_{cntL}	Pins 7, 16 input voltage	0		1.0	V

Design guarantee items

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Video S/N	VG_{1V}			-75	-70	dB
Differential Gain	DG	$V_{IN} = 1\text{Vp-p}$, RAMP signal			1.0	%
Differential Phase	DP	$V_{IN} = 1\text{Vp-p}$, RAMP signal			1.0	deg.
Mute attenuation	V_{MUTEV}	$V_{IN} = 1\text{Vp-p}$, $f = 4.43\text{MHz}$		-60	-55	dB
Cross-talk between channel	V_{CTKV}	$V_{IN} = 1\text{Vp-p}$, $f = 4.43\text{MHz}$		-60	-55	dB

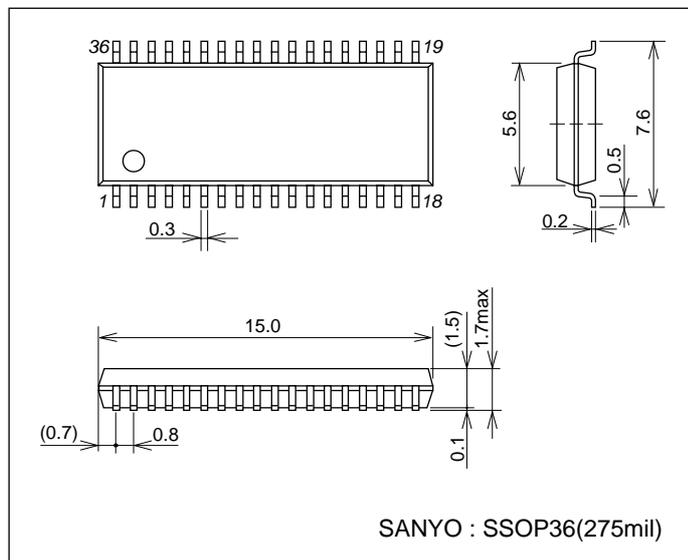
Truth Table

	Pins 7, 16
H	THROUGH
L	MUTE

Package Dimensions

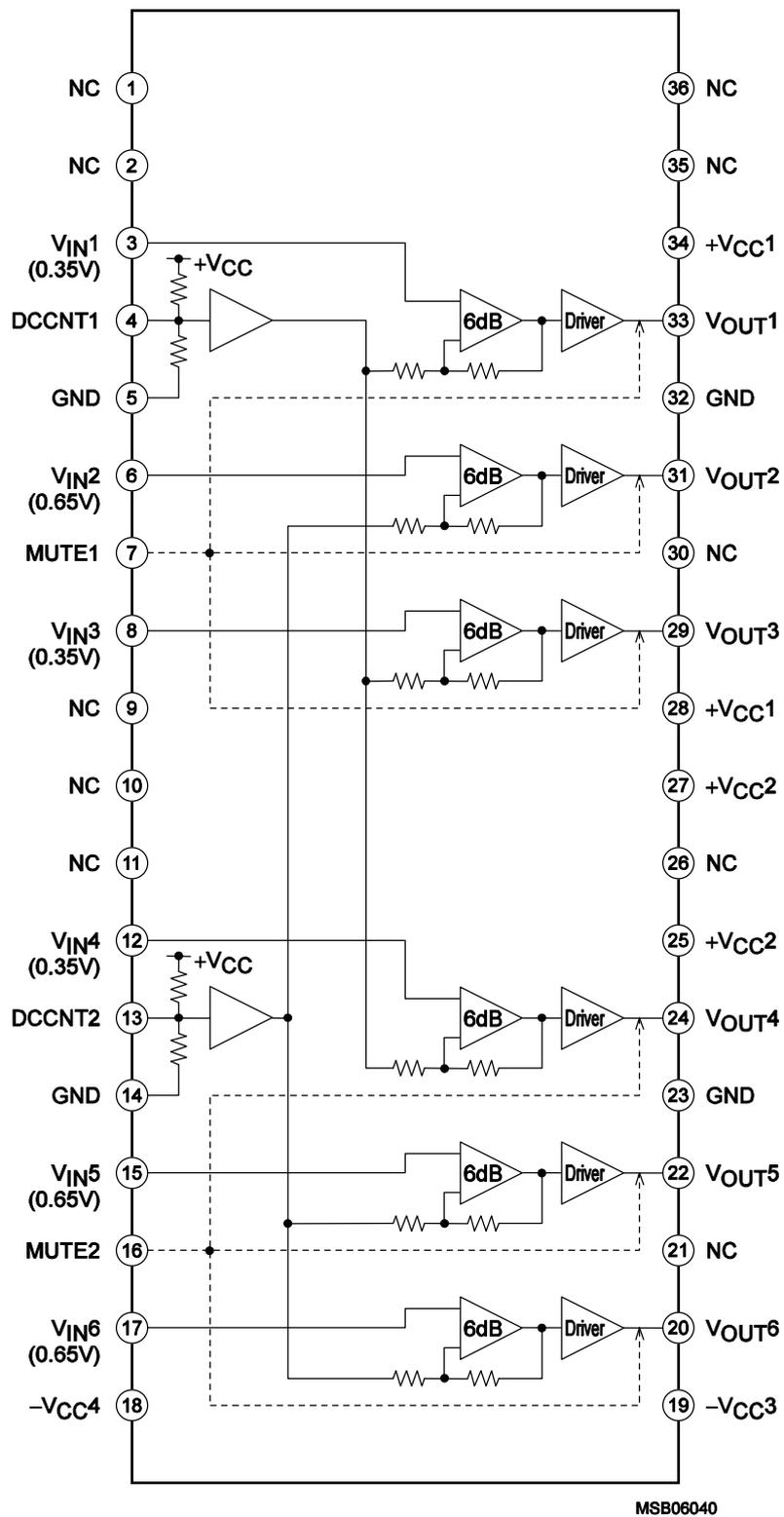
unit : mm

3247A



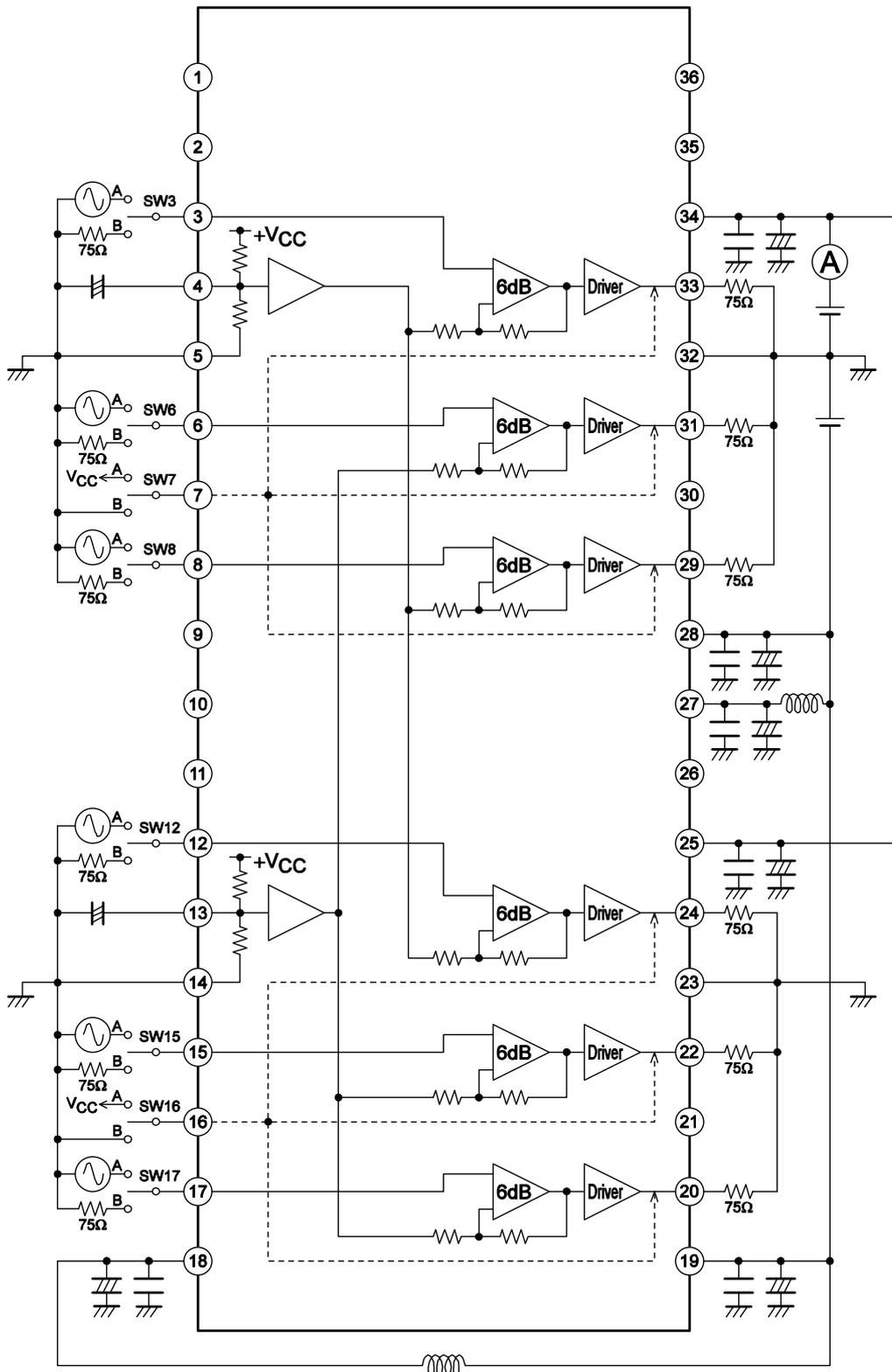
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Block Diagram



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Test Circuit Diagram (Using \pm power supply)



MSB06039

Pin Functions

Pin No.	Pin Name	Terminal Explanation	Equivalent Circuit
1 2 9 10 11 21 26 30 35 36	NC		
3 6 8 12 15 17	V _{IN1} V _{IN2} V _{IN3} V _{IN4} V _{IN5} V _{IN6}	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.	<p>MSP06323</p>
4 13	DCCNT1 DCCNT2	DC offset mode charge terminal between input and output When a condenser is input at the position between pin 4 (DCCNT1) and GND, the operation of IC becomes the mode with 0.35V DC offset between input and output of 1, 3, 4ch (pins 3 and 33, pins 8 and 29, pins 12 and 14). Similarly when a condenser is input at the position between pin 13 (DCCNT2) and GND, it becomes the mode with 0.65V DC offset between input and output of 2, 5, 6ch (pins 6 and 31, pins 15 and 22, pins 17 and 20). And when pins 4, 13 and GND is shorted, it becomes the mode without DC offset between input and output.	<p>MSP06364</p>
5 14 23 32	GND	Both ±power supply and +power supply are GND.	
7 16	MUTE1 MUTE2	Changeover terminal of Mute. When the Mute terminal is Low, it is Mute. When the terminal is Open, it is Low.	<p>MSP06325</p>

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Pin No.	Pin Name	Terminal Explanation	Equivalent Circuit
18 19 27 28	-V _{CC}	-V _{CC} of using \pm power supply. Using +power supply, it is GND.	
20 22 24 29 31 33	V _{OUT6} V _{OUT5} V _{OUT4} V _{OUT3} V _{OUT2} V _{OUT1}	Output terminal. Using \pm power supply, in case of the mode with DC offset, it is possible to use without capacitor of output by setting pins 3, 8, 12 to 0.35V-bias and by setting pins 6, 15, 17 to 0.65V-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.	
25 34	+V _{CC}	Both \pm power supply and +power supply are +V _{CC} .	

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