Ordering number : EN8218

SANYO Semiconductors
DATA SHEET

Monolithic Linear IC

LA73053 — 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 114.3×76.1×1.6mm^3 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 Ta = 25°C, V_{CC} = ±5V, The mode with DC offset.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current dissipation	$I_{CC}1$	No signal	58.3	68.5	75.3	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, 2, 3ch	-1.0	0	1.0	dB
Frequency characteristics 2	VF2	V_{IN} = 1Vp-p, f = 100k/10MHz 4, 5, 6ch	-1.0	0	1.0	dB
Frequency characteristics 3	VF3	V_{IN} = 1Vp-p, f = 100k/27MHz 1, 2, 3ch		-25	-20	dB
Frequency characteristics 4	VF4	V_{IN} = 1Vp-p, f = 100k/54MHz 4, 5, 6ch		-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	$V_{cnt}H$	Pins 7, 16 input voltage	2.5		V_{CC}	V
Control voltage L level	$V_{cnt}L$	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} = 1Vp-p, RAMP signal			1.0	%
Differential Phase	DP	V_{IN} = 1Vp-p, RAMP signal			1.0	deg.
Mute attenuation	V_{MUTEV}	V_{IN} = 1Vp-p, f = 4.43MHz		-60	-55	dB
Cross-talk between channel	V_{CTKV}	V_{IN} = 1Vp-p, f = 4.43MHz		-60	-55	dB

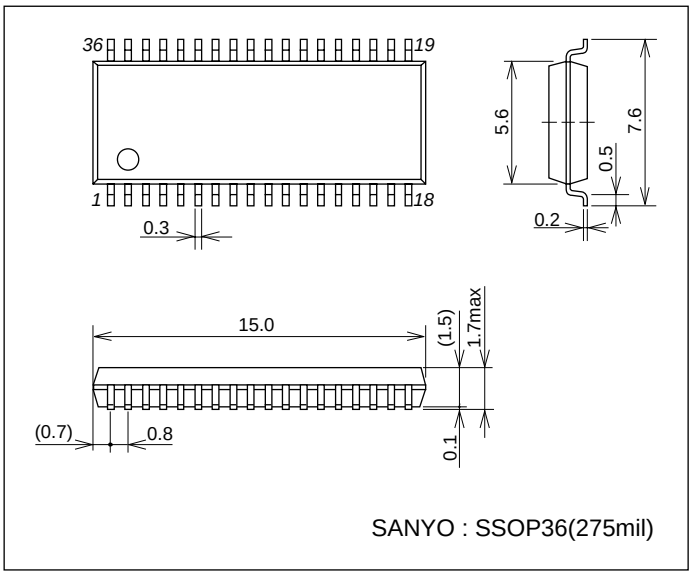
Truth Table

	Pins 7, 16
H	THROUTH
L	MUTE

Package Dimensions

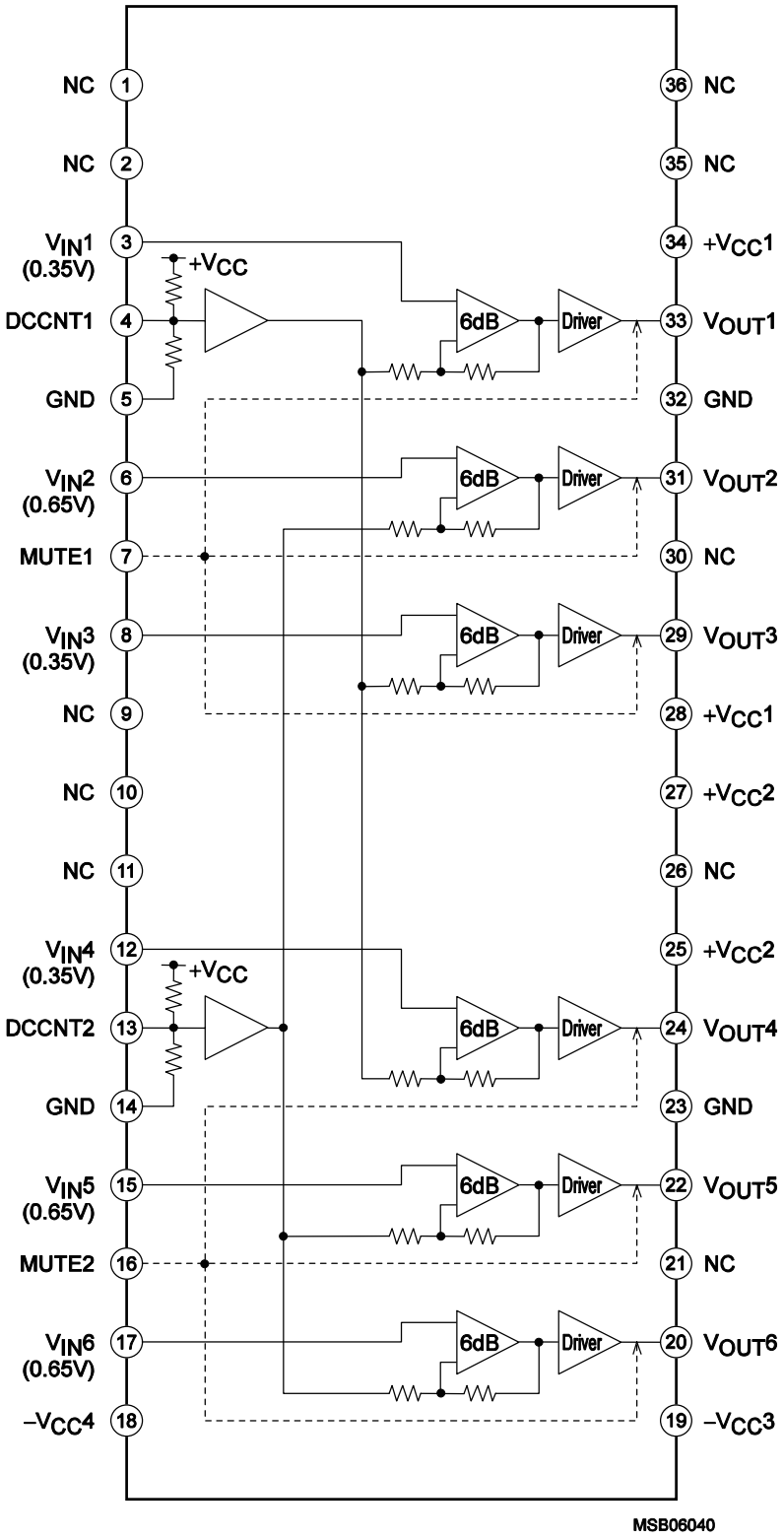
unit : mm

3247A

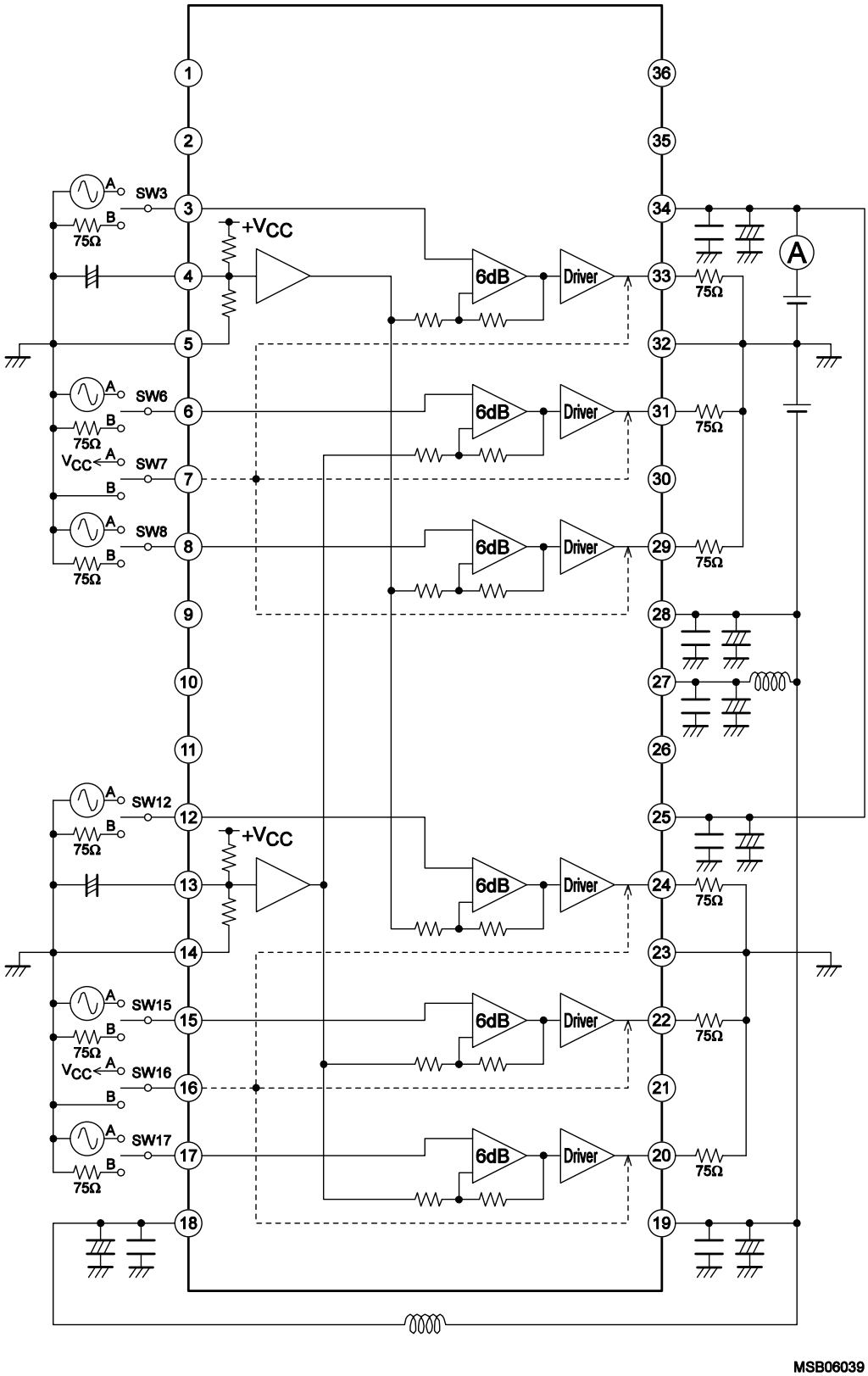


SANYO : SSOP36(275mil)

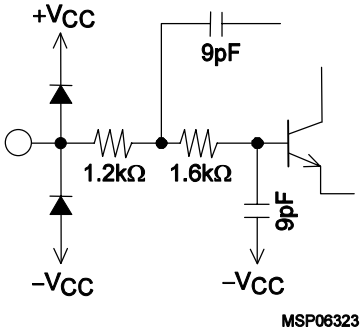
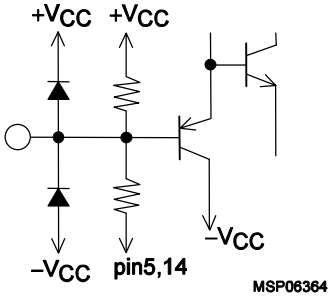
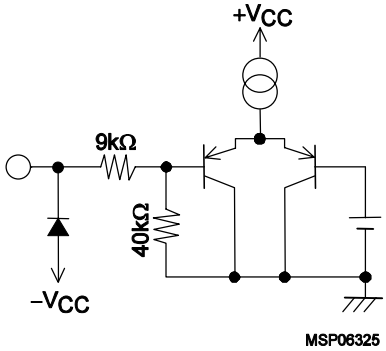
Block Diagram



Test Circuit Diagram (Using ±power supply)



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	$V_{IN}1$ $V_{IN}2$ $V_{IN}3$ $V_{IN}4$ $V_{IN}5$ $V_{IN}6$	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.	
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.	
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.	

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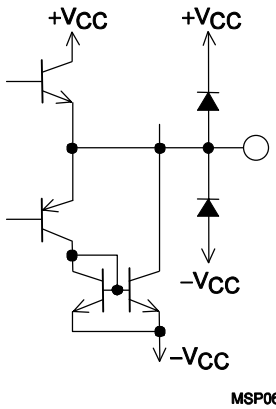
Pin No.	Pin Name	Terminal Explanation	Equivalent Circuit
18 19 27 28	$-V_{CC}$	$-V_{CC}$ of using ±power supply. Using +power supply, it is GND.	
20 22 24 29 31 33	$V_{OUT}6$ $V_{OUT}5$ $V_{OUT}4$ $V_{OUT}3$ $V_{OUT}2$ $V_{OUT}1$	Output terminal. Using ±power supply, in case of the mode with DC offset, 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 ±power supply and +power supply are $+V_{CC}$.	

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