



LA7109

Monolithic Linear IC 6ch 75Ω Video Driver

Overview

This LA7109 is a 6ch 75Ω Video Driver IC.

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 *	700	mW
Operating temperature	T _{opr}		-20 to +80	°C
Storage temperature	T _{stg}		-55 to +150	°C

* Mounted on a board : 114.3×76.1×1.6mm³, glass epoxy board.

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended operating voltage	V _{CC}		±5 +9	V
Operating voltage range	V _{CC}		±4.0 to ±5.5 +8 to +10	V

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Electrical Characteristics at Ta = 25°C, VCC = ±5V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current dissipation 1	I _{CC1}	No signal Pins 22,31 L	51	60	69	mA
Current dissipation 2	I _{CC2}	No signal Pins 22,31 H	37.5	44	50.6	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/7MHz	-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%	5.0	6.0		Vp-p
Control voltage H level	V _{cntH}	Pins 3, 12, 20, 22, 29, 31 input voltage	2.5		V _{CC}	V
Control voltage L level	V _{cntL}	Pins 3, 12, 20, 22, 29, 31 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

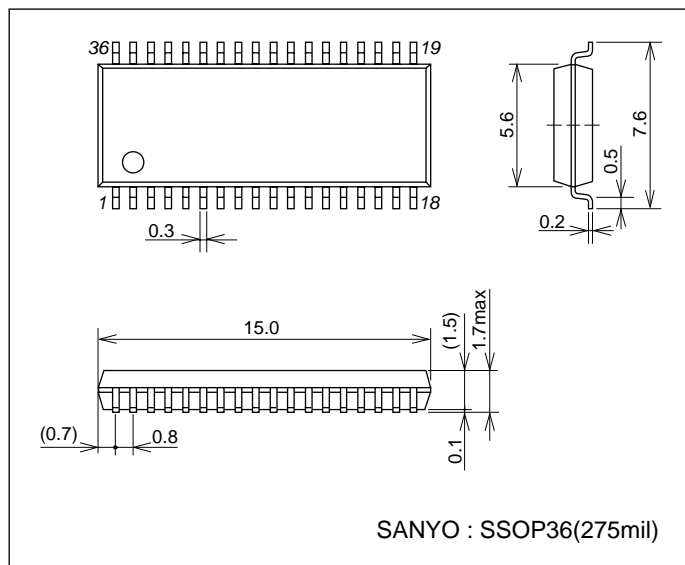
Truth Table

	Pins 3, 12, 20, 29	Pins 22, 31
High	THROUGH	150Ω DRIVE
Low	MUTE	75Ω DRIVE

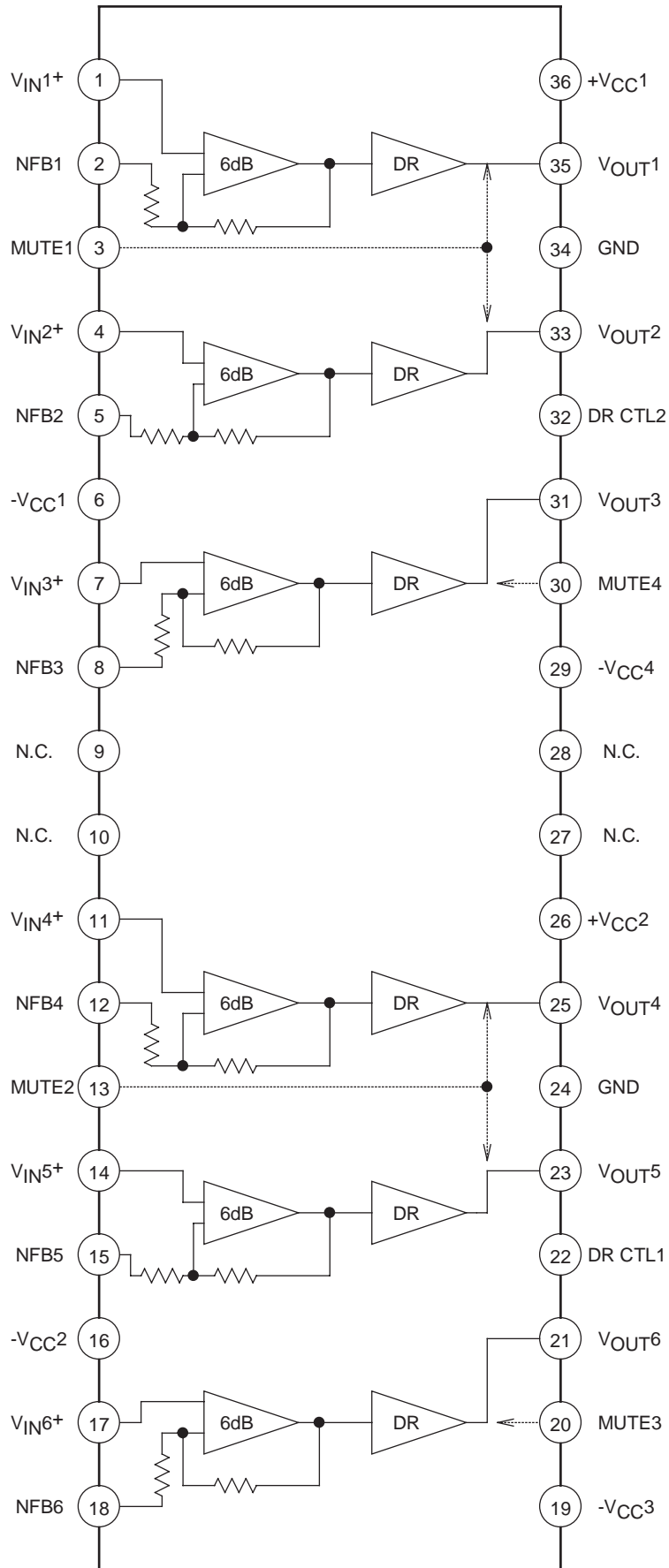
Package Dimensions

unit : mm (typ)

3247A



Block Diagram



Pin Functions

Pin No.	Pin name	Function	Equivalent circuit
1 4 7 11 14 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. Using with +power supply, it is better to set at 1/2 V _{CC} .	
2 5 8 12 15 18	NFB1 NFB2 NFB3 NFB4 NFB5 NFB6	Negative feed-back terminal of amp. When a capacitor is set to GND, it becomes AC Amp.	
3 13 20 22 30 32	MUTE1 MUTE2 MUTE3 DR CTL1 MUTE4 DR CTL2	Changeover terminal of Mute or Drive ability. When the Mute terminal is Low, it is Mute. When the terminal is Open, it is Low. Changeover of Drive ability is : High : 150Ω Drive Low : 75Ω Drive	
6 16 19 29	-V _{CC}	-V _{CC} of using ±power supply. Using +power supply, it is GND.	
21 23 25 31 33 35	V _{OUT6} V _{OUT5} V _{OUT4} V _{OUT3} V _{OUT2} V _{OUT1}	Output terminal. Using ±power supply, it is possible to use without capacitor of output by setting the input to zero-bias. When using +power supply, coupling capacitor is necessary.	

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Pin No.	Pin name	Function	Equivalent circuit
24 34	GND	Both \pm power supply and +power supply are GND.	
26 36	+V _{CC}	Both \pm power supply and +power supply are +V _{CC} .	
9 10 27 28	N. C.	Recommend connecting to -V _{CC} , because of improving radiation.	

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