


SANYO Semiconductors

DATA SHEET

LA6537 — Monolithic Linear IC For CD and CD-ROMs 4-Channel Bridge Driver

Overview

The LA6537 is a 4-channel bridge (BTL) driver which was developed for compact discs and CD-ROMs.

Features

- 4-channel bridge (BTL) power amplifier.
- I_O max 700mA.
- With mute circuit (Amp 3, Amp 4).

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		14	V
Maximum input voltage	V_{INB}		13	V
Mute pin voltage	V_{MUTE}		13	V
Allowable power dissipation	$P_d \text{ max}$	Mounted on the specified board *	2.5	W
Operating temperature	T_{opr}		-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

* Specified board : 114.3mm × 76.1mm × 1.6mm, glass epoxy board

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

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		4 to 13	V

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LA6537

Electrical Characteristics at $T_a = 25^{\circ}\text{C}$, $V_{CC} = 7.5\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
No-load current drain	I_{CC1}	Note 1	20	40	60	mA
	I_{CC2}	Note 2		26	60	mA
Output offset voltage	V_{OF1}	Note 3 : amplifiers 1 to 2, 7 to 8	-50		+50	mV
	V_{OF2}	Note 3 : amplifiers 3 to 4, 5 to 6	-50		+50	mV
Input bias current	I_B			100	500	nA
Buffer input voltage range	V_{BIN}		1.5		$V_{CC}-1.5$	V
Input voltage range	V_{IN}		1.0		$V_{CC}-1.5$	V
Output source voltage	V_{O1}	Note 4 : $R_L = 8.0\Omega$	5.0	5.6		V
Output sink voltage	V_{O2}	Note 5 : $R_L = 8.0\Omega$		1.8	2.4	V
Closed-circuit voltage gain	V_G	Bridge amplifier		12		dB
Slew rate	SR			0.15		V/ μs
Mute on voltage	V_{MUTE}			2		V
Mute pin inflow current	I_{MUTE}			60		μA

Note : 1. Mute off and buffer in assume 0.5V.

2. Mute off and buffer in assume $1/2 V_{CC}$ V.

3. Represents the interoutput difference.

4. Voltage relative to ground (source) when an 8Ω load is connected between bridge amplifier outputs.

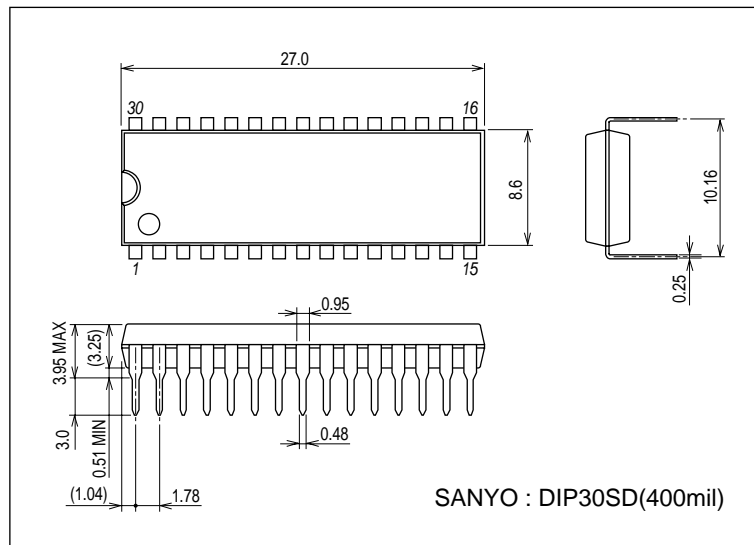
5. Voltage relative to ground (sink) when an 8Ω load is connected between bridge amplifier outputs.

Thus, muting is activated when high, and the amplifier outputs 5 and 6 are off.

Package Dimensions

unit : mm (typ)

3196A



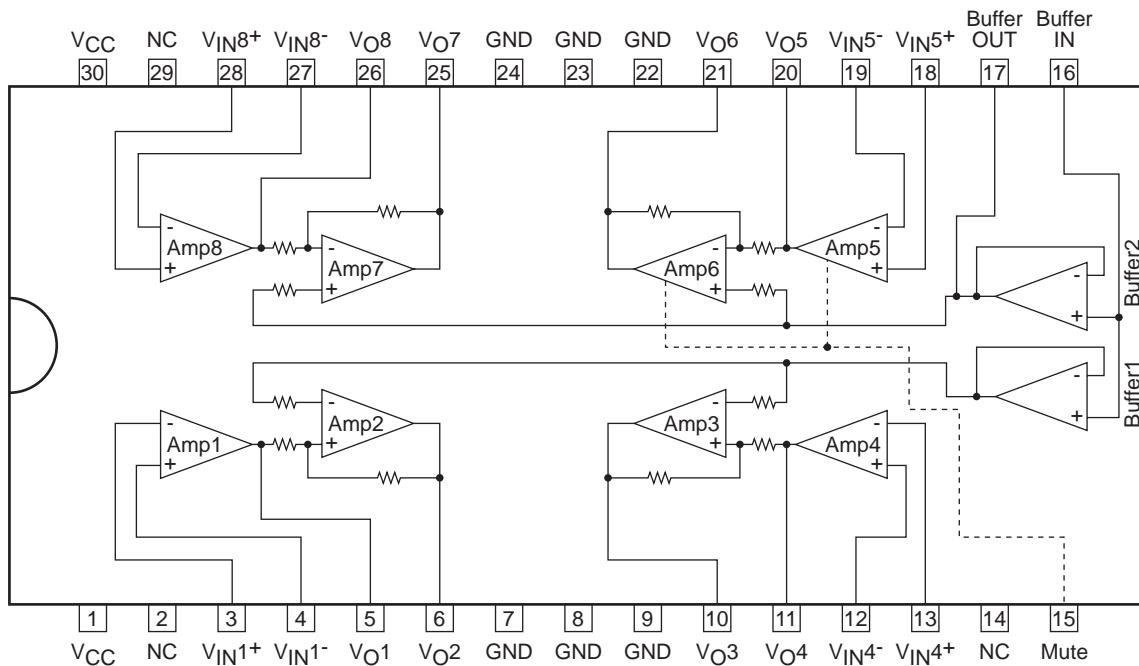
Test Method

SW No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Item														
I _{CC1}	a	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
I _{CC2}	a	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	a	OFF	OFF
V _{OF1, 2}	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
I _B	b	OFF	OFF	ON	OFF	a	a	ON	OFF	OFF	OFF	b	OFF	OFF
V _{O1}	b	OFF	ON	OFF	ON	b	a	OFF	OFF	OFF	ON	b	OFF	OFF
V _{O2}	b	OFF	OFF	OFF	OFF	a	b	OFF	ON	ON	ON	b	OFF	OFF
V _{MUTE}	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
I _{MUTE}	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
V _G	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	ON	ON

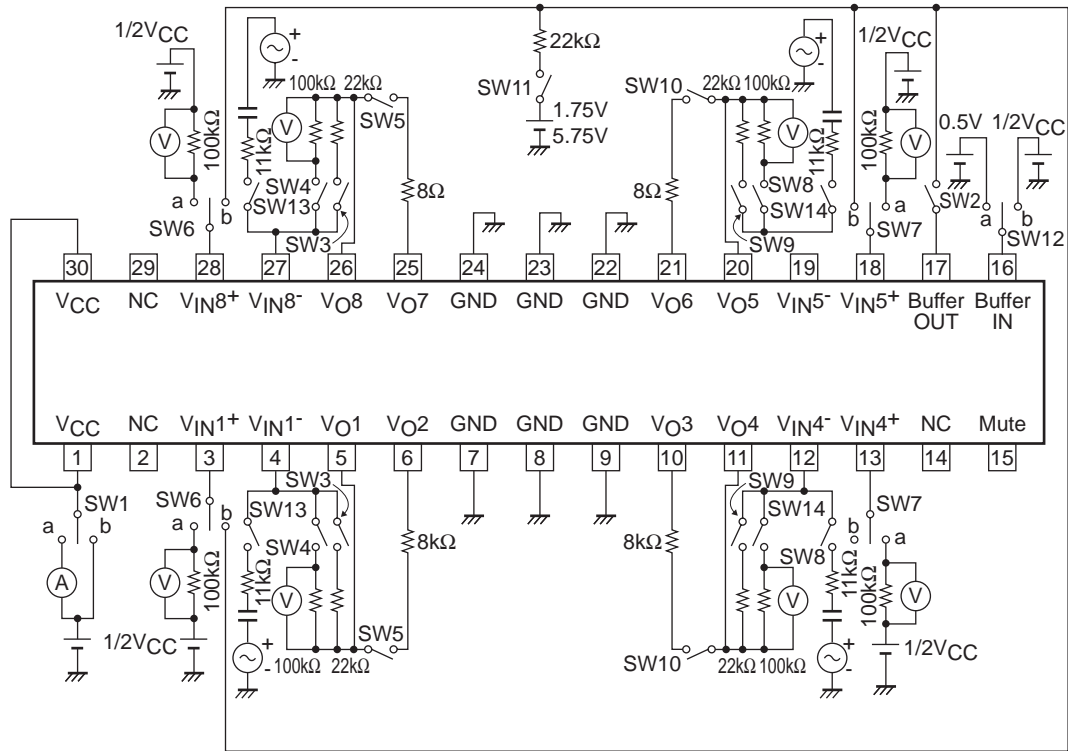
1. For I_{CC1} and 2, measure the inflow current on the V_{CC} pin.
2. For V_{OF1} and 2, measure the voltage between pins 5 and 6 (amplifiers 1 and 2), pins 25 and 26 (amplifiers 7 and 8), pins 10 and 11 (amplifiers 3 and 4), and pins 20 and 21 (amplifiers 5 and 6).
3. For I_B, measure the voltage across the 100kΩ resistor (I_B = V/100kΩ).
4. For V_{O1} and 2, measure each output voltage at input voltages 1.75V and 5.75V, respectively.
5. V_{MUTE} is the mute pin (pin 15) voltage when the output goes off.
6. I_{MUTE} is the mute pin (pin 15) inflow current when the output goes off.
7. For V_G, measure the voltage between pins 5 and 6 (amplifiers 1 and 2), pins 25 and 26 (amplifiers 7 and 8), pins 10 and 11 (amplifiers 3 and 4), and pins 20 and 21 (amplifiers 5 and 6) at f = 1kHz, and use the following formula :

$$VG = 20 \log V_O / V_{IN} \text{ dB.}$$

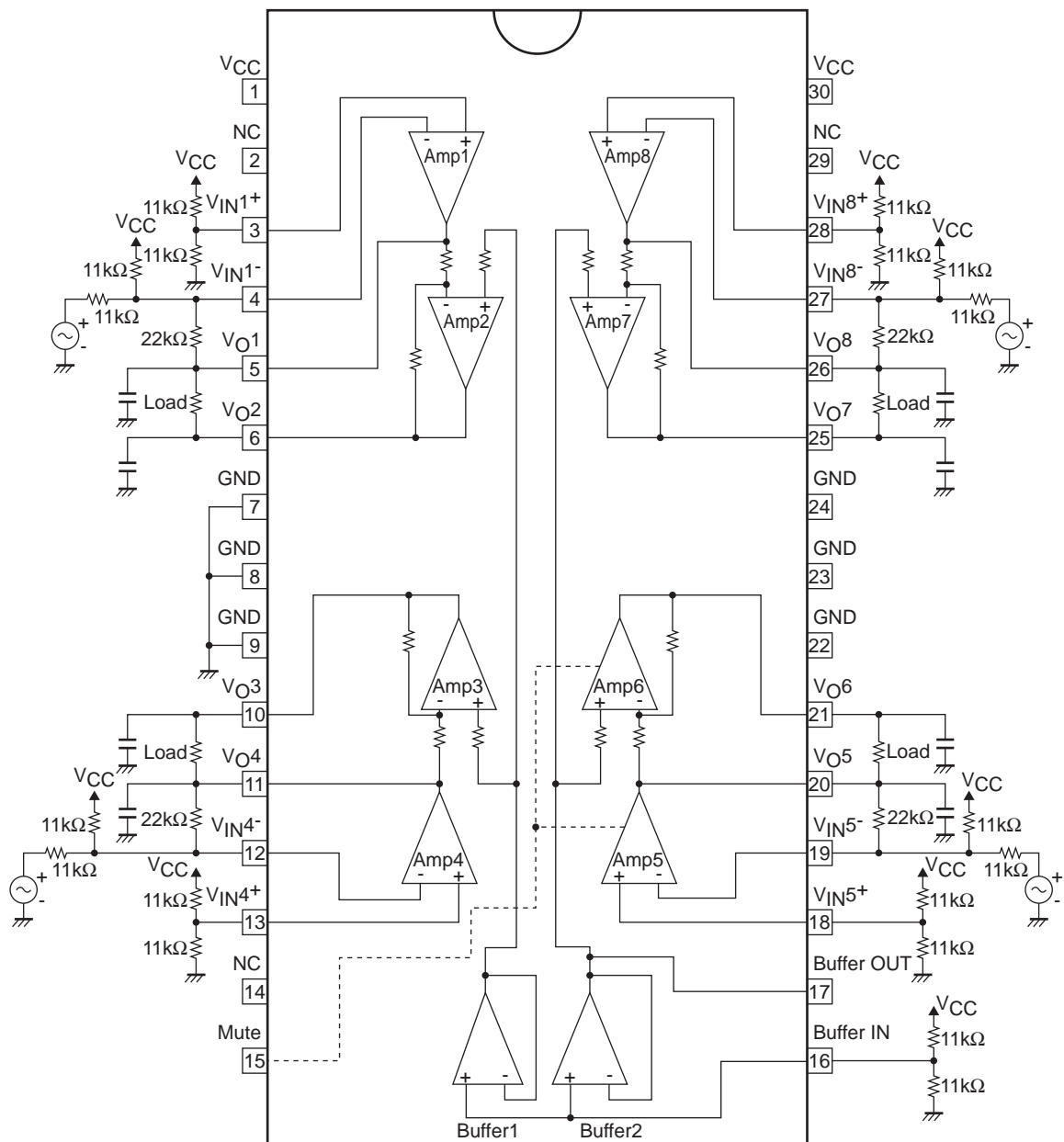
Pin Assignment and Block Diagram



Test Circuit



Sample Application Circuit



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