

**LA6537**

4-channel Bridge Driver for CD and CD-ROMs

Overview

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

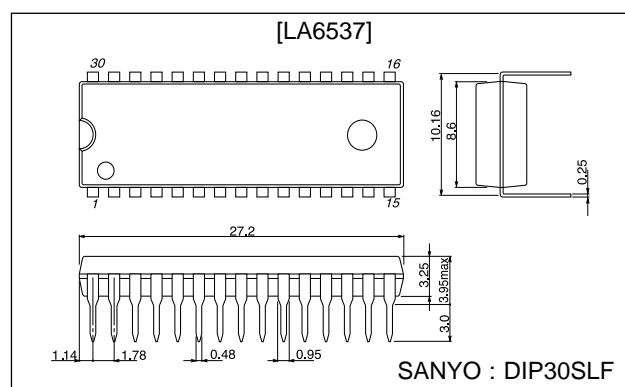
Features and Functions

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

Package Dimensions

unit : mm

3196-DIP30SLF



Specifications

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

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

* PCB (114.3 × 76.2 × 1.5 mm glass epoxy resin)

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

Parameter	Symbol	Conditions	min	typ	max	Unit
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	VG	Bridge amplifier		12		dB
Slew rate	SR			0.15		V/ μ s
Mute on voltage	V_{MUTE}			2		V
Mute on current	I_{MUTE}			60		μ A

Notes:

- Mute off and buffer in assume 0.5 V.
- Mute off and buffer in assume 1/2 V_{CC} V.
- Represents the interoutput difference.
- Voltage relative to ground (source) when an 8 Ω load is connected between bridge amplifier outputs.
- Voltage relative to ground (sink) when an 8 Ω load is connected between bridge amplifier outputs.
Thus, muting is activated when high, and the amplifier outputs 5 and 6 are off.

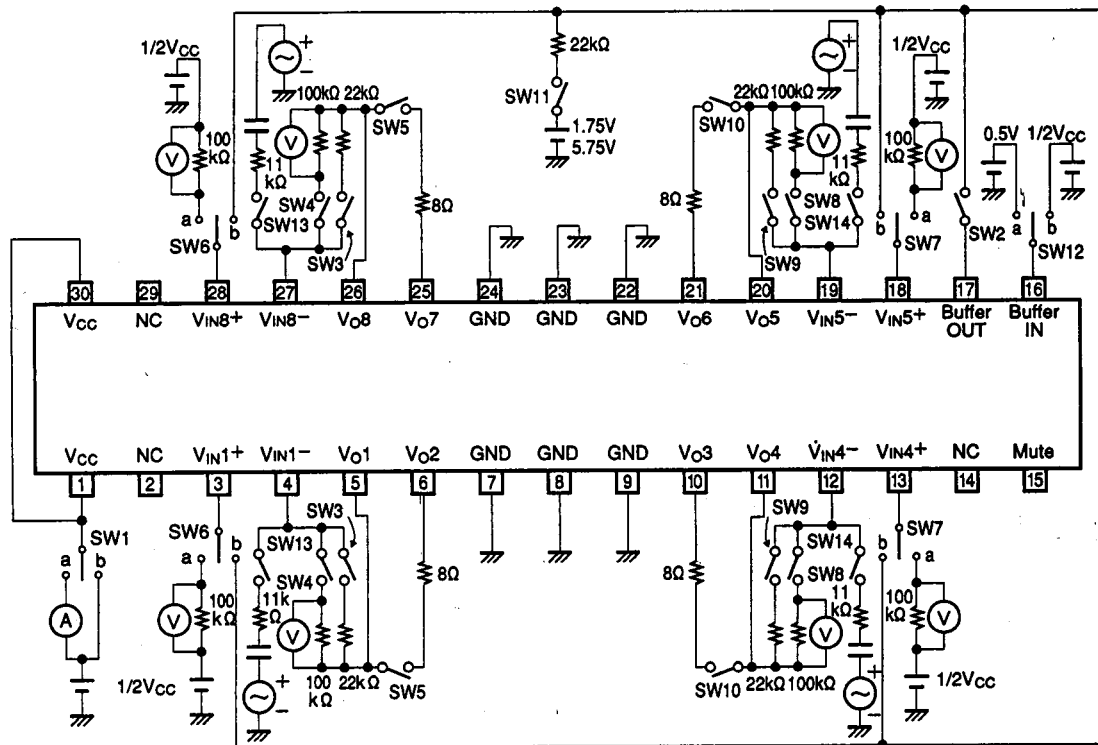
Test Method

SW No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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
VG	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	ON	ON

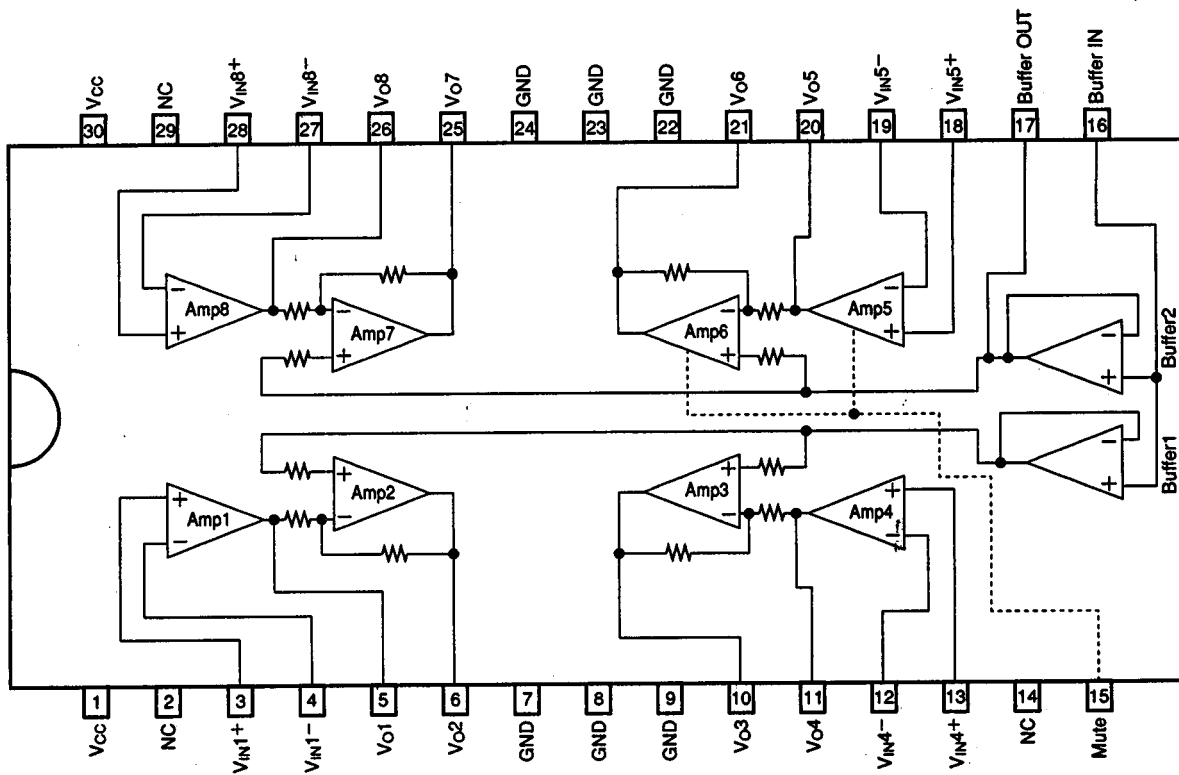
- For I_{CC1} and 2, measure the inflow current on the V_{CC} pin.
- For V_{OF1} and 2, measure the voltage between pins 5 and 6 (amplifiers 1 and 2), pins 25 and 26 (amplifiers 7 and 8), pins 10 and 11 (amplifiers 3 and 4), and pins 20 and 21 (amplifiers 5 and 6).
- For I_B , measure the voltage across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

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Test Circuit



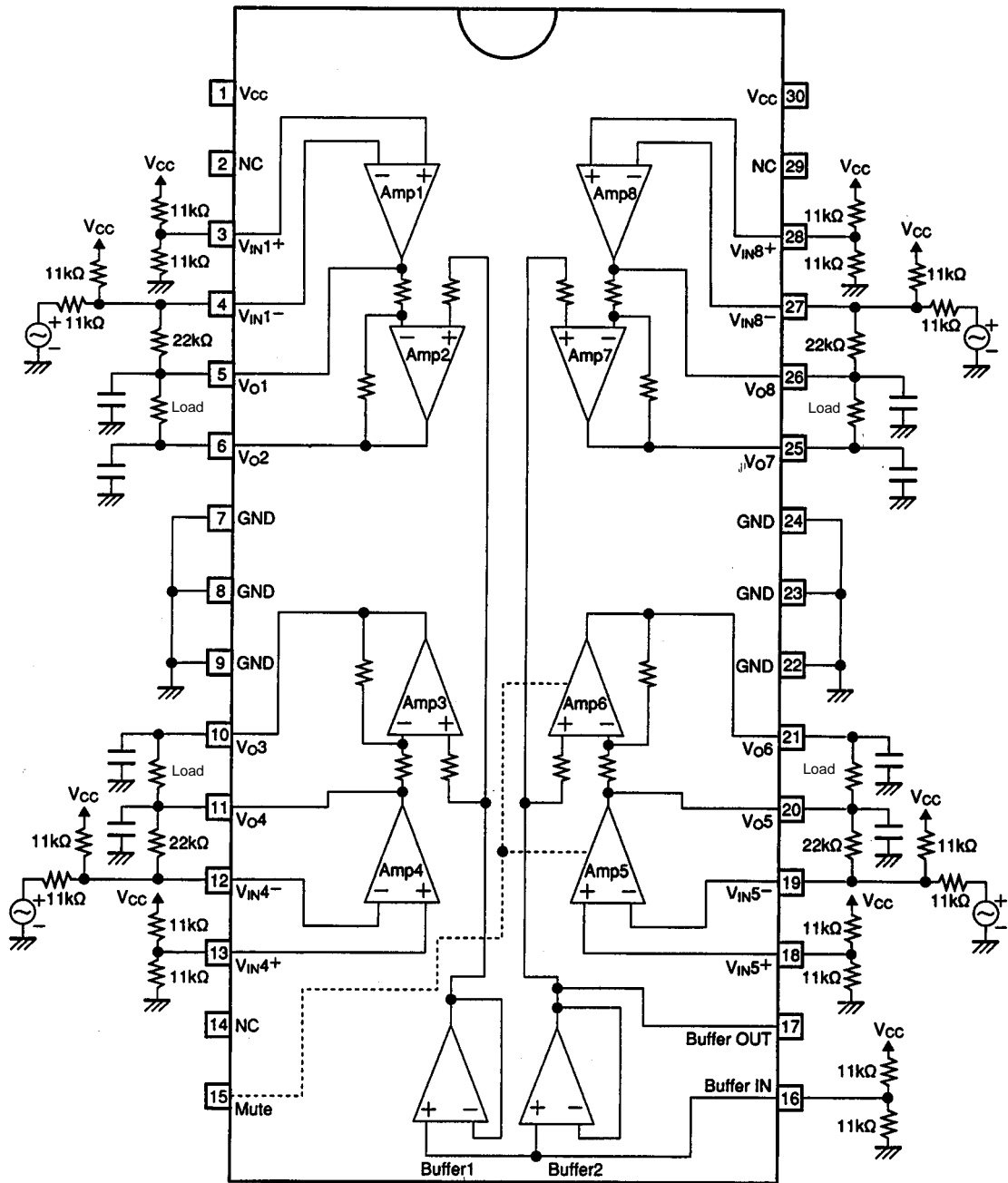
Pin Assignment



Do not use the NC pin.

Top view

Sample Application Circuit



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