Ordering number: EN 5822

Monolithic Linear IC

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.

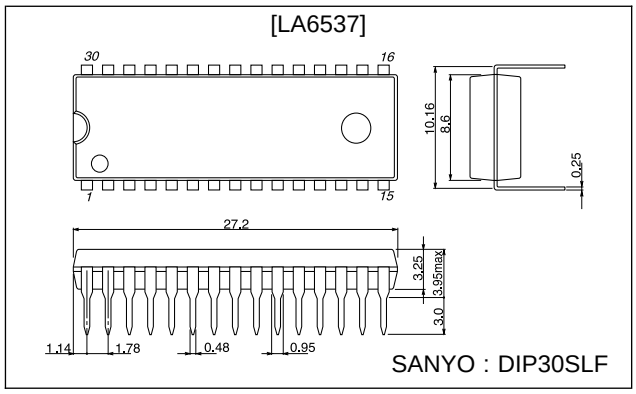
Features and Functions

- 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 Ta = 25 °C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		14	V
Allowable power dissipation	Pd 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	Topr		–20 to +75	°C
Storage temperature	Tstg		–55 to +150	°C

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

Recommended Operating Conditions at Ta = 25 °C

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

Electrical Characteristics at Ta = 25 °C, V_{CC} = 7.5 V

Parameter	Symbol	Conditions	min	typ	max	Unit
No-load current drain	$I_{CC}1$	Note 1	20	40	60	mA
	$I_{CC}2$	Note 2		26	60	mA
Output offset voltage	$V_{OF}1$	Note 3, amplifiers 1 to 2, 7 to 8	–50		+50	mV
	$V_{OF}2$	Note 3, ampifiers 3 ro 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 Ω	5.0	5.6		V
Output sink voltage	V_O2	Note 5, R_L = 8.0 Ω		1.8	2.4	V
Closed-circuit voltage gain	VG	Bridge amplifier		12		dB
Slew rate	SR			0.15		V/µs
Mute on voltage	V_{MUTE}			2		V
Mute on current	I_{MUTE}			60		µA

Notes:

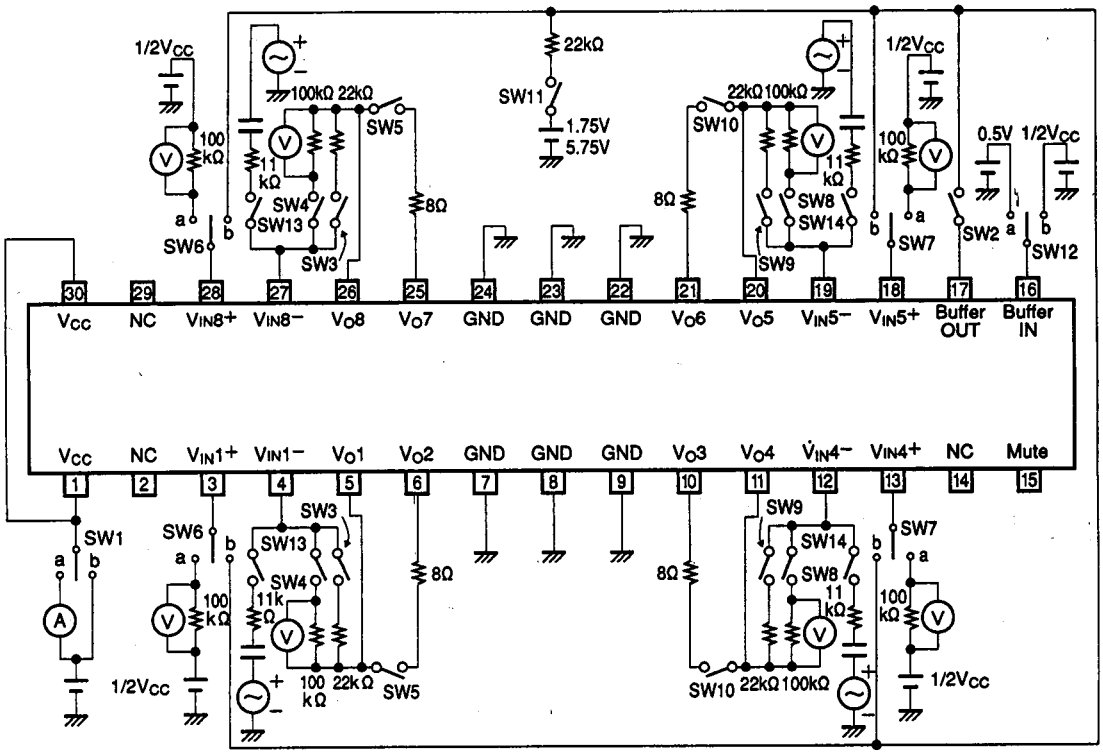
1. Mute off and buffer in assume 0.5 V.
2. Mute off and buffer in assume 1/2 V_{CC} V.
3. Represents the interoutput difference.
4. Voltage relative to ground (source) when an 8 Ω load is connected between bridge amplifier outputs.
5. Voltage relative to ground (sink) when an 8 Ω load is connected between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

Test Method

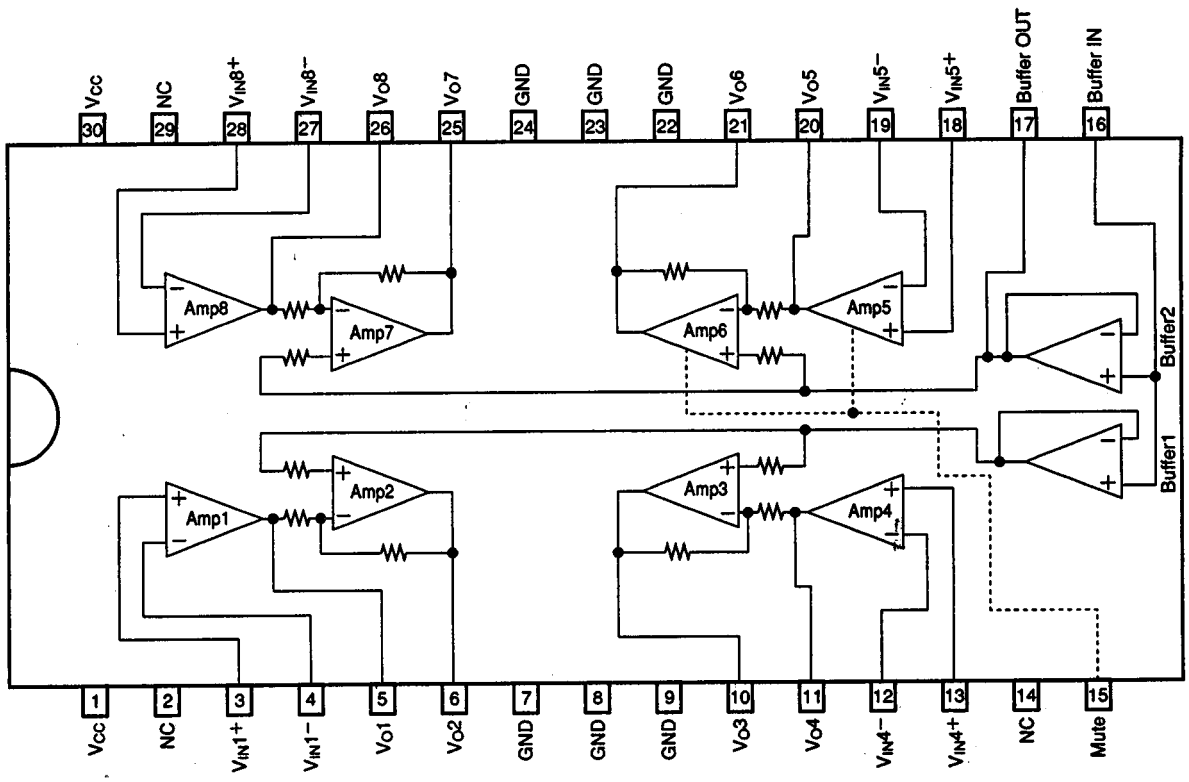
SW No. / Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14
$I_{CC}1$	a	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
$I_{CC}2$	a	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	a	OFF	OFF
$V_{OF}1,2$	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
I_B	b	OFF	OFF	ON	OFF	a	a	ON	OFF	OFF	OFF	b	OFF	OFF
V_O1	b	OFF	ON	OFF	ON	b	a	OFF	OFF	OFF	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

1. For $I_{CC}1$ and 2, measure the inflow current on the V_{CC} pin.
2. For $V_{OF}1$ 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 100 kΩ resistor (I_B = V/100 kΩ).
4. For V_O1 and 2, measure each output voltage at input voltages 1.75 V and 5.75 V, 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 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 kHz, and use the following formula:
   VG = 20 log V_O/V_{IN} dB.

Test Circuit



Pin Assignment



Do not use the NC pin.

Top view

Sample Application Circuit