

**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.

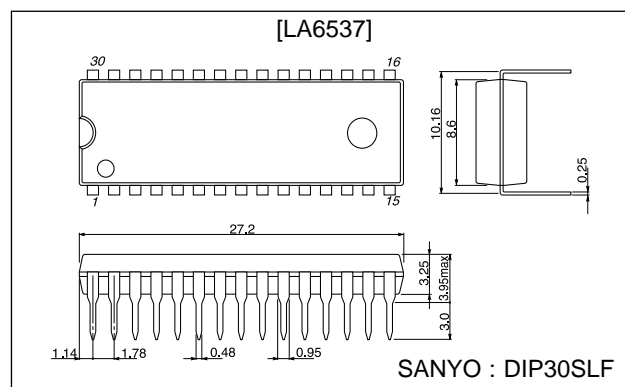
Features and Functions

- 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 |

LA6537

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:

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.

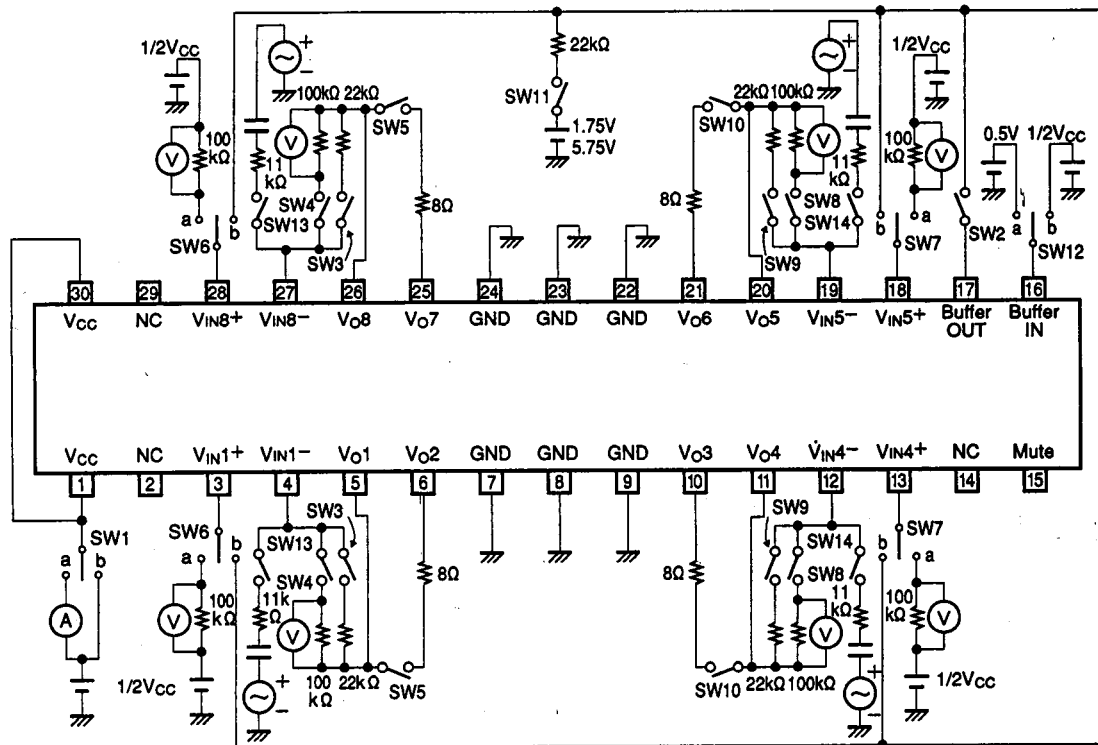
Test Method

| SW No. | 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 |

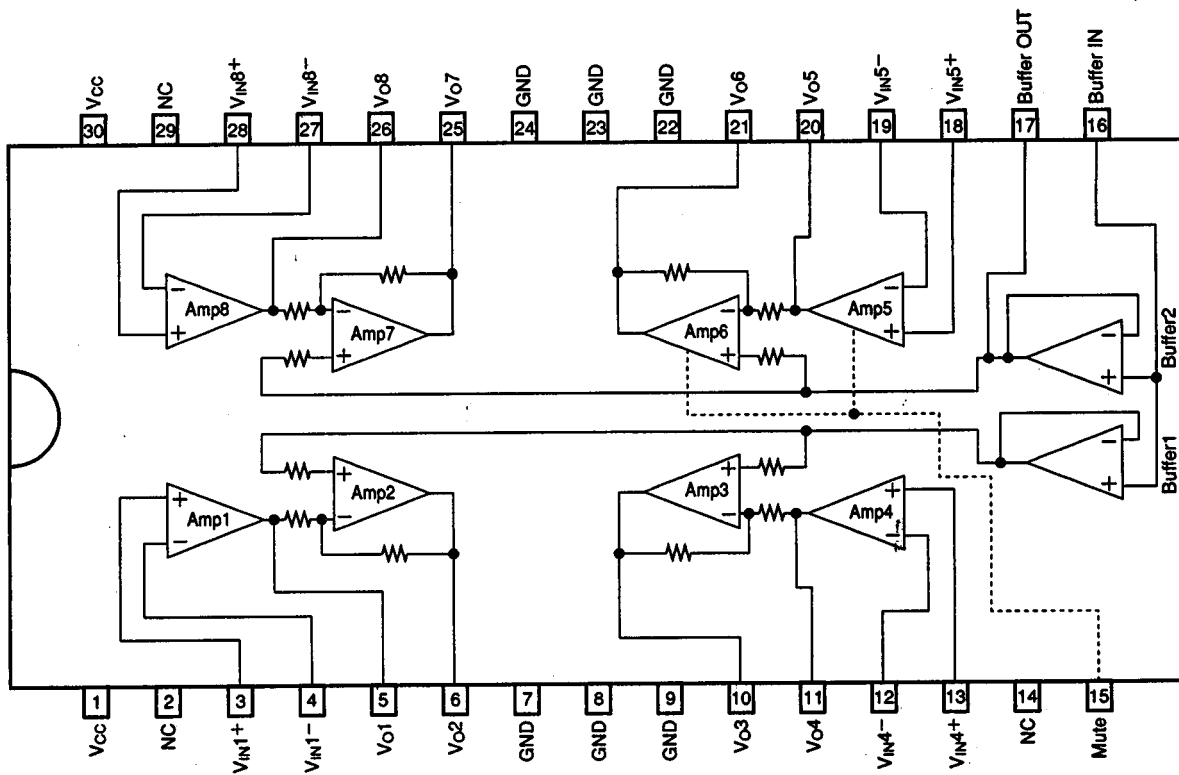
1. For I_{CC1} and 2, measure the inflow current on the V_{CC} pin.
2. For V_{OF1} and 2, measure the voltage between pins 5 and 6 (amplifiers 1 and 2), pins 25 and 26 (amplifiers 7 and 8), pins 10 and 11 (amplifiers 3 and 4), and pins 20 and 21 (amplifiers 5 and 6).
3. For I_B , measure the voltage across the 100 k Ω resistor ($I_B = V/100\text{ k}\Omega$).
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 $f = 1\text{ kHz}$, and use the following formula:

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

Test Circuit



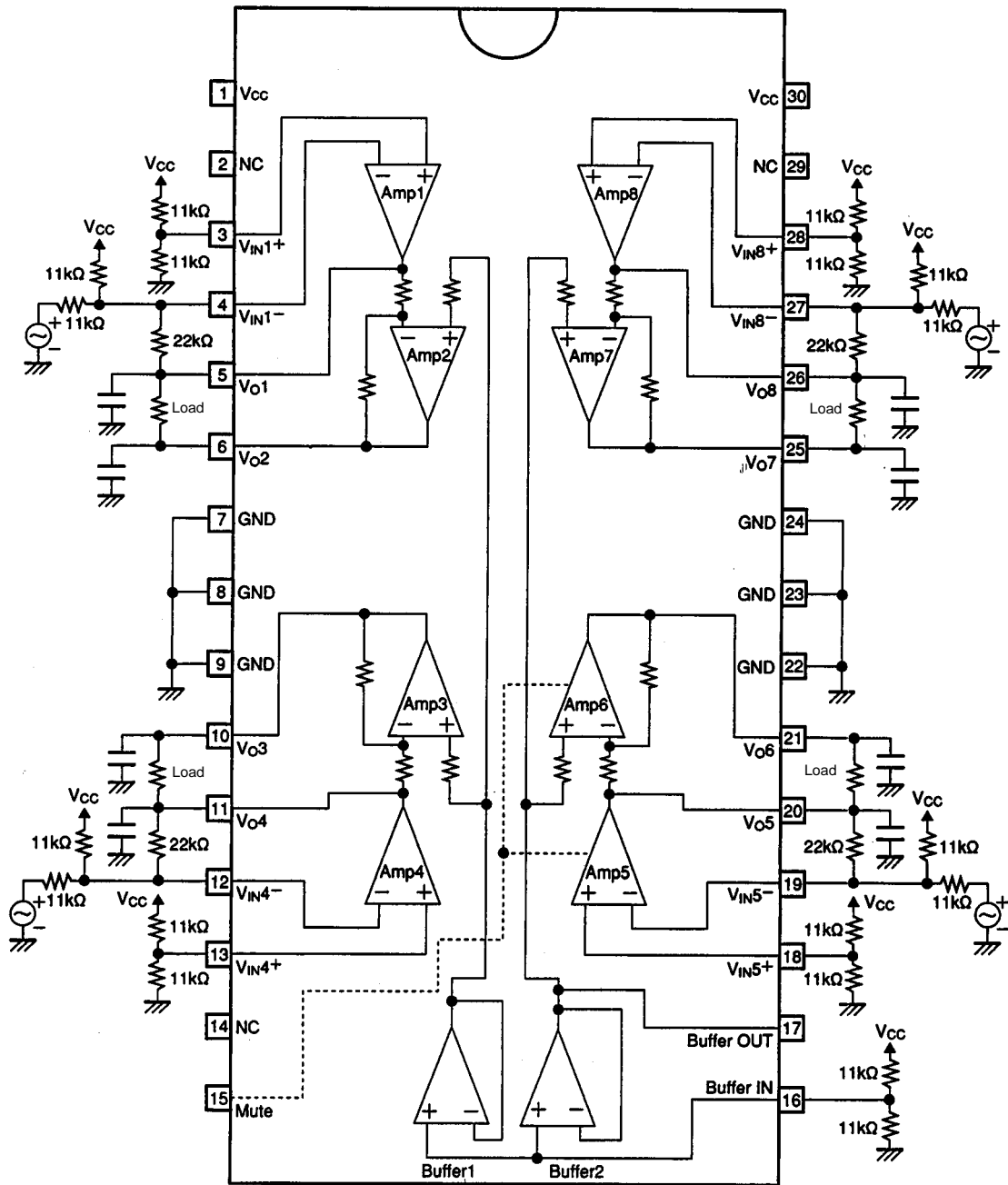
Pin Assignment



Do not use the NC pin.

Top view

Sample Application Circuit



- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of January, 1998. Specifications and information herein are subject to change without notice.