

**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.

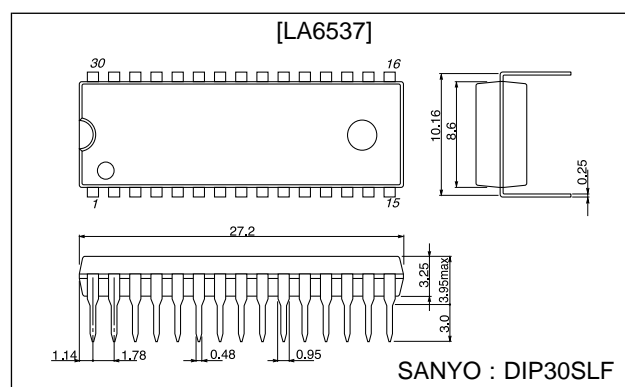
### Features and Functions

- 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/ $\mu$ s
Mute on voltage	$V_{MUTE}$			2		V
Mute on current	$I_{MUTE}$			60		$\mu$ 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  $\Omega$  load is connected between bridge amplifier outputs.
- Voltage relative to ground (sink) when an 8  $\Omega$  load is connected between bridge amplifier outputs.  
Thus, muting is activated when high, and the amplifier outputs 5 and 6 are off.

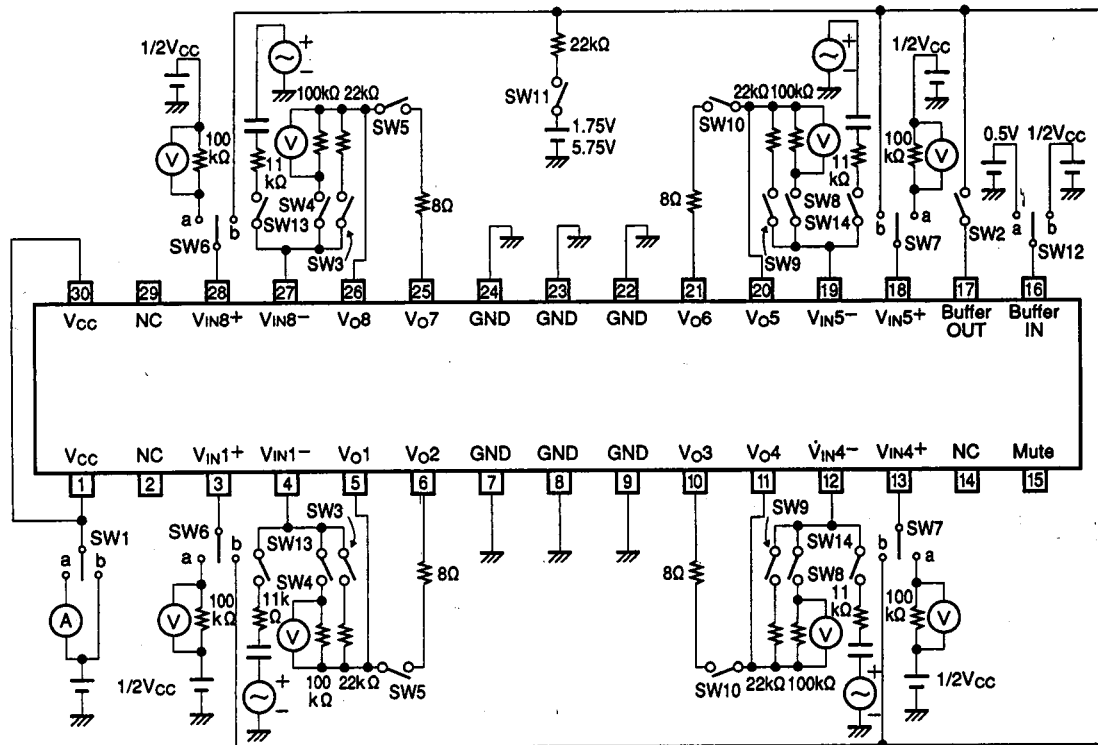
### Test Method

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

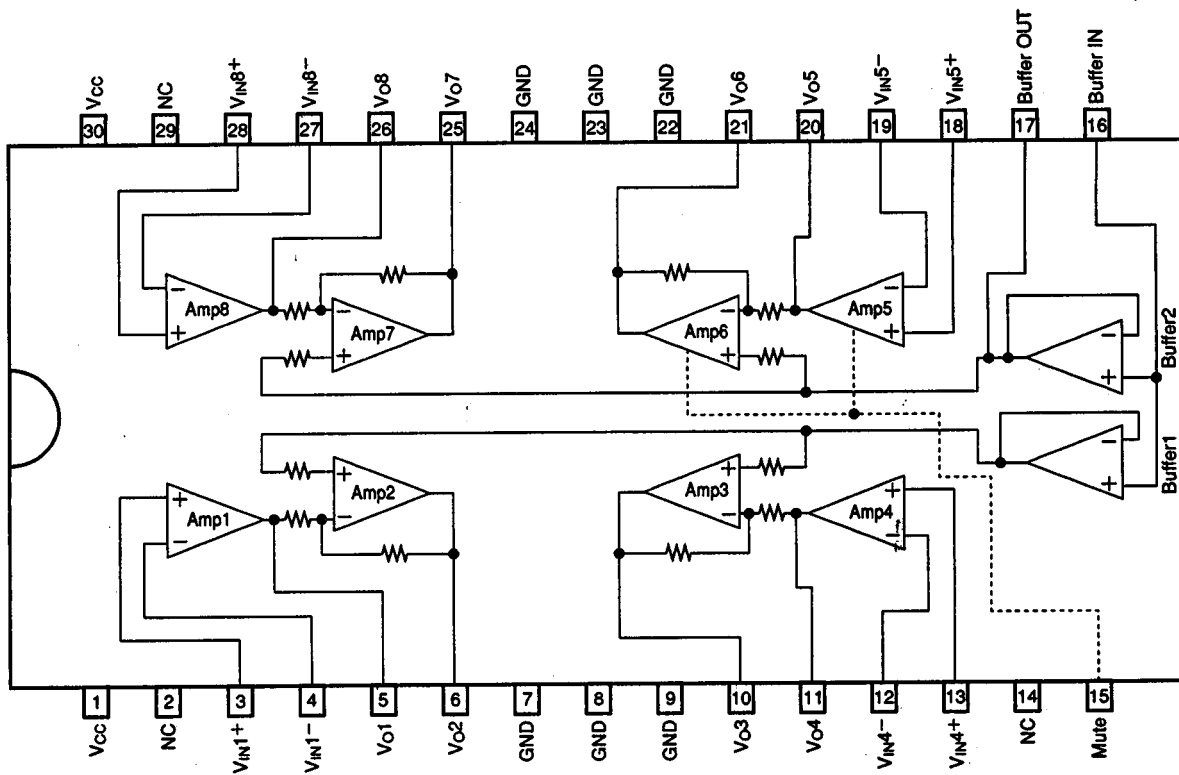
- For  $I_{CC1}$  and 2, measure the inflow current on the  $V_{CC}$  pin.
- For  $V_{OF1}$  and 2, measure the voltage between pins 5 and 6 (amplifiers 1 and 2), pins 25 and 26 (amplifiers 7 and 8), pins 10 and 11 (amplifiers 3 and 4), and pins 20 and 21 (amplifiers 5 and 6).
- For  $I_B$ , measure the voltage across the 100 k $\Omega$  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



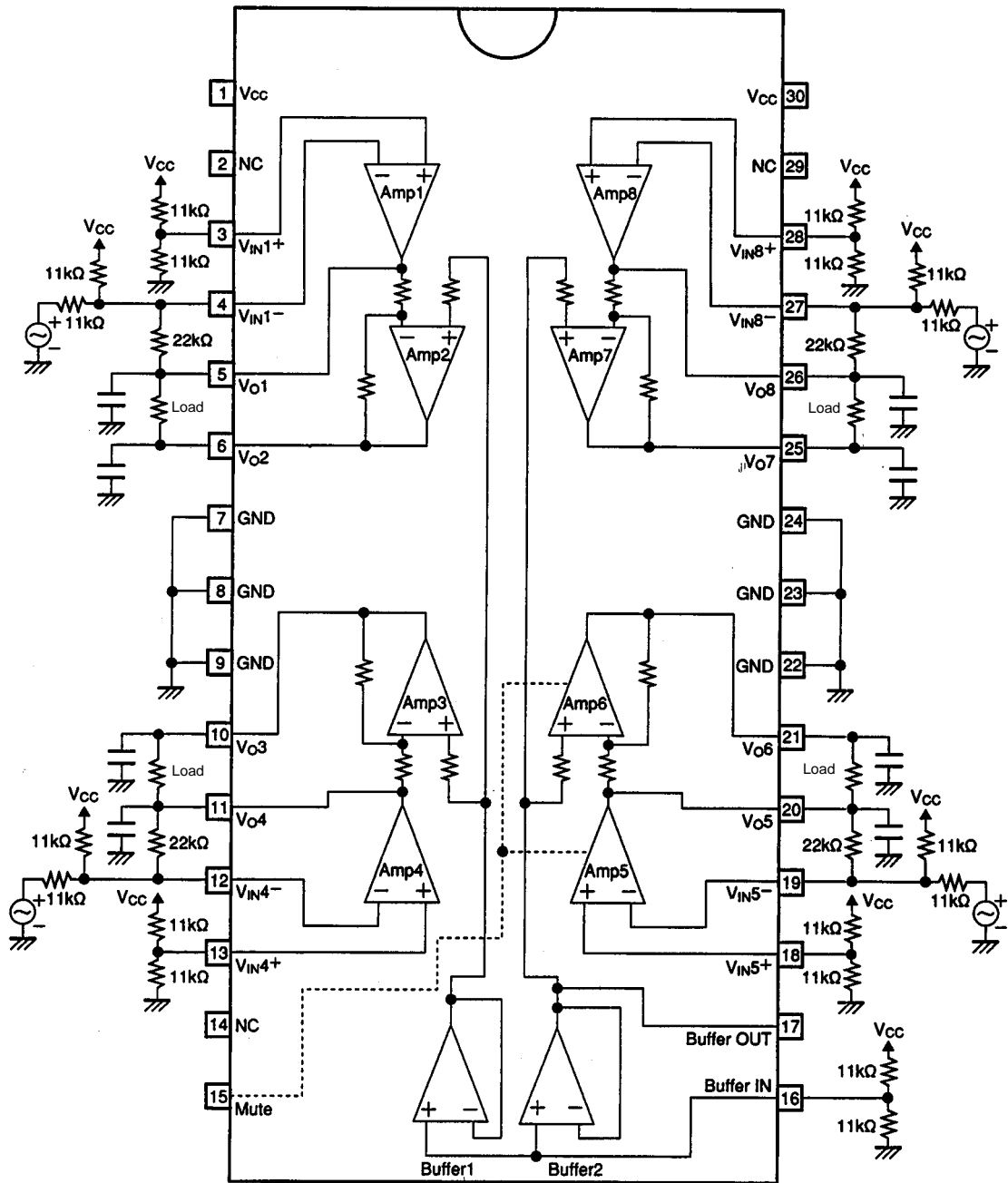
## Pin Assignment



Do not use the NC pin.

Top view

Sample Application Circuit



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