



LA6537M

4-channel Bridge Driver for CD and CD-ROMs

Overview

The LA6537M is a 4-channel bridge (BTL) driver which was developed for compact discs and CD-ROMs.

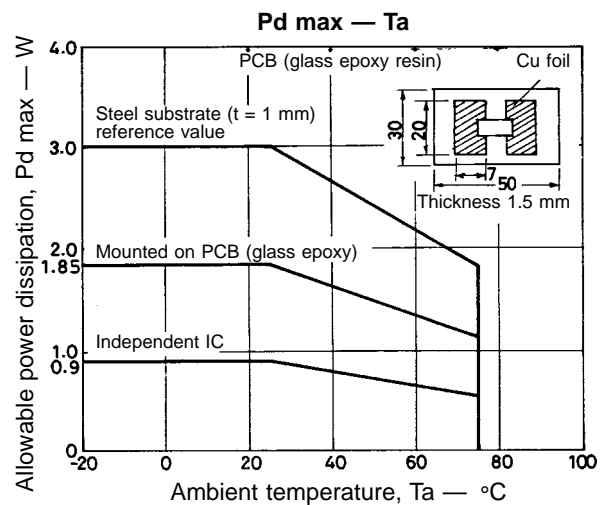
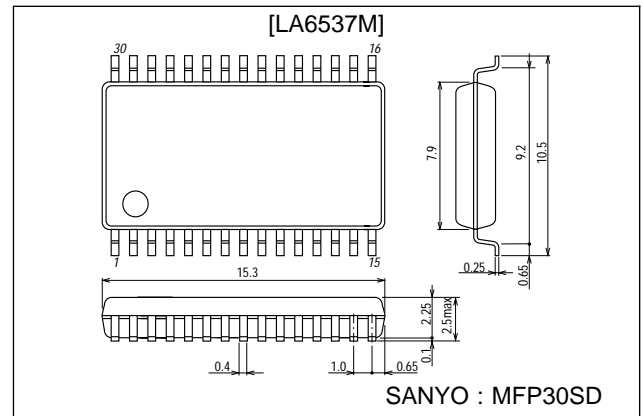
Features and Functions

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

Package Dimensions

unit : mm

3073A-MFP30SD



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		14	V
Maximum input voltage	V_{INB}		13	V

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LA6537M

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Parameter	Symbol	Conditions	Ratings	Unit
Mute pin voltage	V_M		13	V
Allowable power dissipation	$P_d \text{ max}$	* Mounted on PCB shown below	0.9	W
Operating temperature	T_{opr}		-20 to +75	°C
Storage temperature	T_{stg}		-55 to +150	°C

* PCB (20 × 30 × 1.5 mm glass epoxy resin)

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

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

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

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 — 2, 7 — 8	-50		+50	mV
	V_{OF2}	Note 3, amplifiers 3 — 4, 5 — 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_M	Note 6		2		V
Mute pin inflow current	I_M	Note 6		60		μA

Notes:

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

Test Method

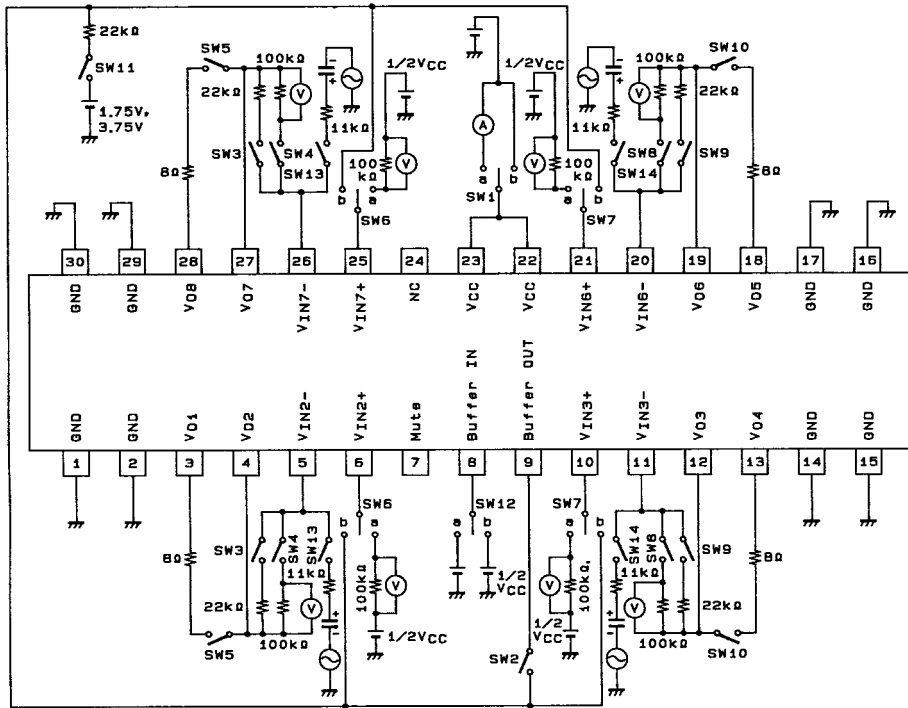
SW No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I_{CC1}	a	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
I_{CC2}	a	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	a	OFF	OFF
$V_{OF1,2}$	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
I_B	b	OFF	OFF	ON	OFF	a	a	ON	OFF	OFF	OFF	b	OFF	OFF
V_{O1}	b	OFF	ON	OFF	ON	b	a	OFF	OFF	OFF	ON	b	OFF	OFF
V_{O2}	b	OFF	OFF	OFF	OFF	a	b	OFF	ON	ON	ON	b	OFF	OFF
V_M	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
I_M	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 3 and 4 (amplifiers 1 and 2), pins 27 and 28 (amplifiers 7 and 8), pins 12 and 13 (amplifiers 3 and 4), and pins 18 and 19 (amplifiers 5 and 6).
3. For I_B , measure the voltage across the $100\ \text{k}\Omega$ 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_M is the mute pin (pin 7) voltage when the output goes off.
6. I_M is the mute pin (pin 7) inflow current when the output goes off.
7. For V_G , measure the voltage between pins 3 and 4 (amplifiers 1 and 2), pins 27 and 28 (amplifiers 7 and 8), pins 12 and 13 (amplifiers 3 and 4), and pins 18 and 19 (amplifiers 5 and 6) at $f = 1\ \text{kHz}$, and use the following formula:

$$V_G = 20 \log V_O/V_1\ \text{dB}.$$

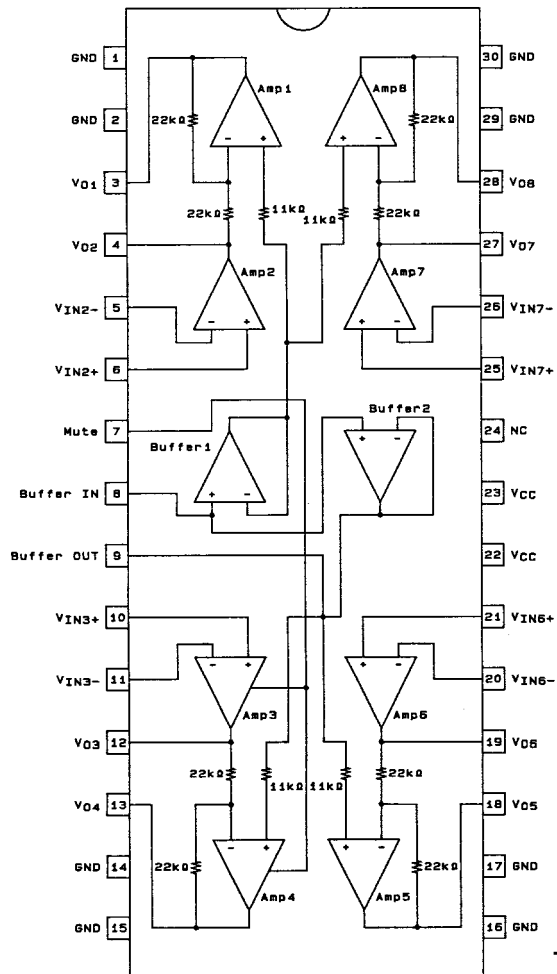
LA6537M

Test Circuit



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Block Diagram and Pin Assignment



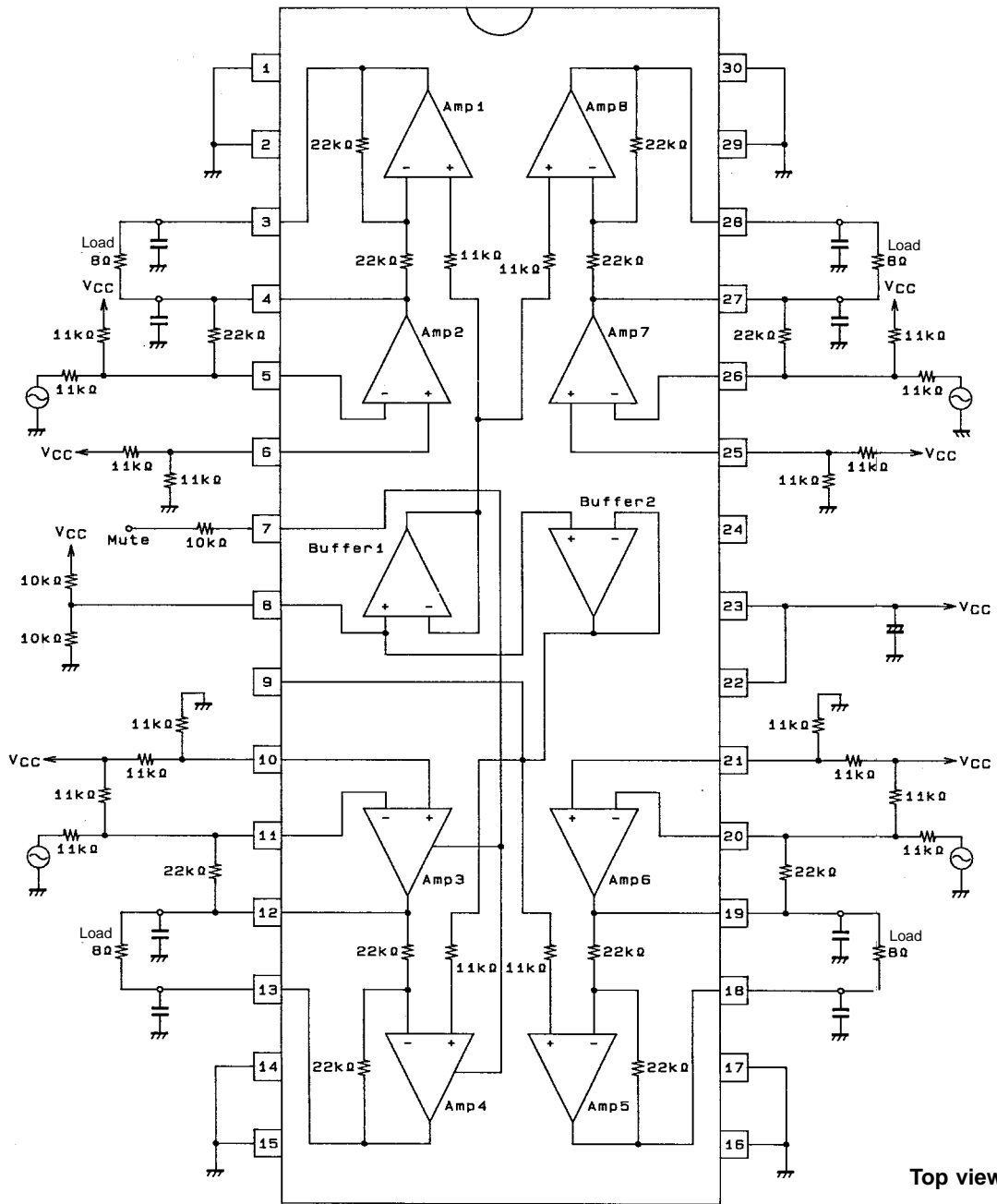
Top view

Do not use the NC pin.

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LA6537M

Sample Application Circuit



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