

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.

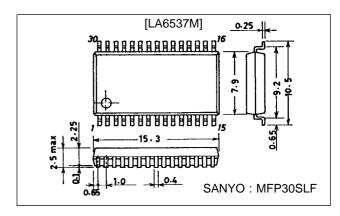
Features and Functions

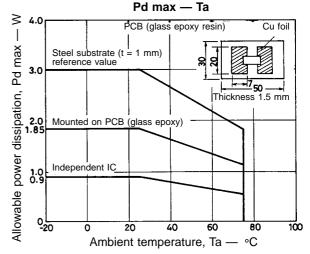
- 4-channel bridge (BTL) power amplifier.
- IO max 700 mA.
- With mute circuit (Amp 3, Amp 4).

Package Dimensions

unit: mm

3073A-MFP30SLF





Specifications

Maximum Ratings at $Ta = 25 \,^{\circ}C$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V _{CC} max		14	V
Maximum input voltage	V _{INB}		13	V
Mute pin voltage	V _M		13	V
Allowable power dissipation	Pd max	* Mounted on PCB shown below	0.9	W
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-55 to +150	°C

^{*} PCB ($20 \times 30 \times 1.5$ mm glass epoxy resin)

Operating Conditions at $Ta = 25 \,^{\circ}C$

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

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

Parameter	Symbol	Conditions	min	typ	max	Unit
No-load current drain	I _{CC} 1	Note 1	20	40	60	mA
No-load current drain	I _{CC} 2	Note 2		26	60	mA
Output offset voltage	V _{OF} 1	Note 3, amplifiers 1 — 2, 7 — 8	-50		+50	mV
Output onset voltage	V _{OF} 2	Note 3, ampifiers 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 _O 1	Note 4, $R_L = 8.0 \Omega$	5.0	5.6		V
Output sink voltage	V _O 2	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/µs
Mute on voltage	V _M	Note 6		2		V
Mute pin inflow current	I _M	Note 6		60		μA

Notes:

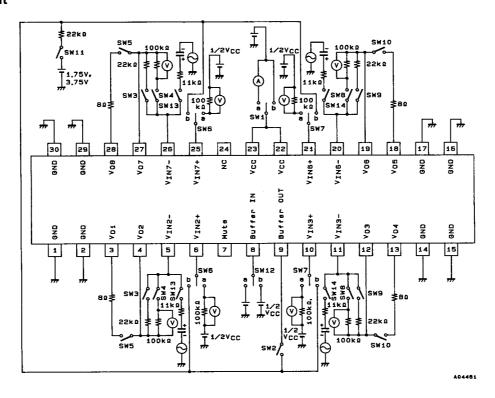
- 1. Mute off and buffer in assume 1/2 V_{CC} V.
- 2. Mute off and buffer in assume 0.5 V.
- 3. Represents the interoutput difference.
- 4. Voltage relative to ground (source) when an 8 Ω load is connected between bridge amplifier outputs.
- 5. Voltage relative to ground (sink) when an 8 Ω load is connected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

Test Method

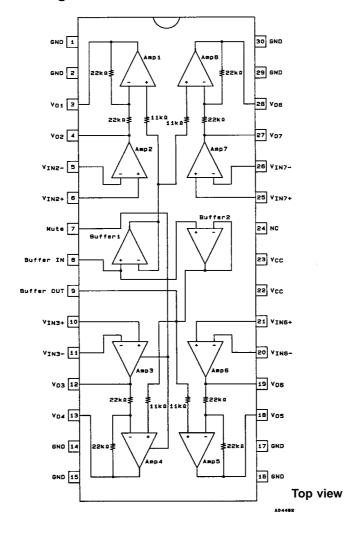
SW No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Item														
I _{CC} 1	а	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
I _{CC} 2	а	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	а	OFF	OFF
∨ _{OF} 1,2	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
lΒ	b	OFF	OFF	ON	OFF	а	а	ON	OFF	OFF	OFF	b	OFF	OFF
V _O 1	b	OFF	ON	OFF	ON	b	а	OFF	OFF	OFF	ON	b	OFF	OFF
V _O 2	b	OFF	OFF	OFF	OFF	а	b	OFF	ON	ON	ON	b	OFF	OFF
V_{M}	b	ON	ON	OFF	OFF	b	b	OFF	ON	OFF	OFF	b	OFF	OFF
IM	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 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 $k\Omega$ resistor (I_B = V/100 $k\Omega).$
- 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 VG, 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 kHz, and use the following formula: $VG = 20 \log V_O/V_1 dB$.

Test Circuit

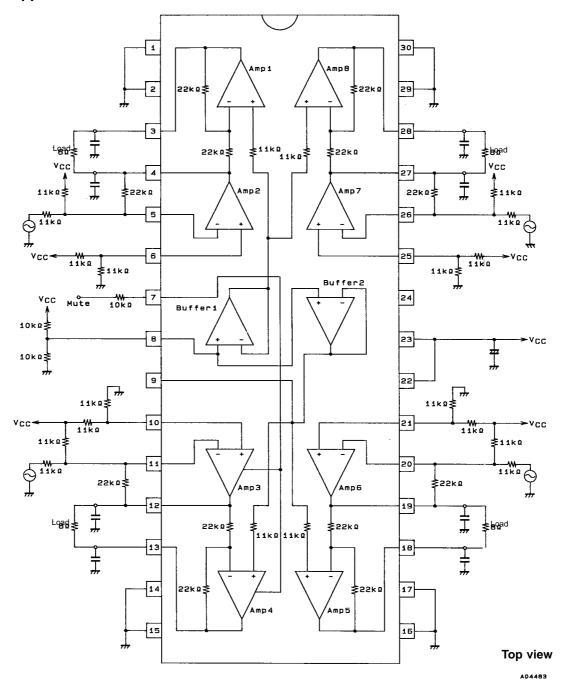


Block Diagram and Pin Assignment



Do not use the NC pin.

Sample Application Circuit



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