Ordering number: EN 5226

Monolithic Linear IC

LA6530M

2-channel Bridge Driver for CD and CD-ROMs

Overview

The LA6530M is a 2-channel bridge (BTL) driver which was developed for compact discs and CD-ROMs.

Features

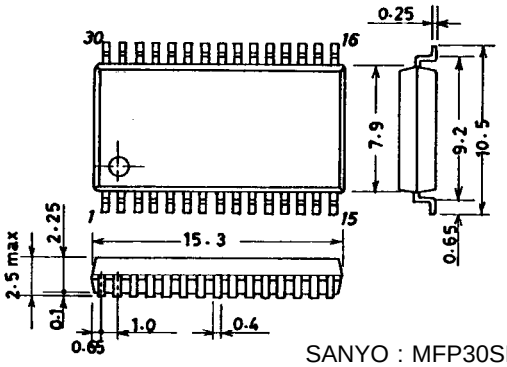
- High output current (I_O max = 0.7 A).
- Wide operating voltage range (4 to 15 V).
- Small input bias current.

Package Dimensions

unit : mm

3073A-MFP30SLF

[LA6530M]



SANYO : MFP30SLF

Specifications

Maximum Ratings at Ta = 25 °C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		16	V
Differential input voltage	V_{ID}	Amplifier 2, amplifier 3	15	V
Common-mode input voltage	V_{ICM}	Amplifier 2, amplifier 3	15	V
Maximum input voltage	V_{INB}	Buffer amplifier	15	V
Mute pin maximum inflow current	I_M max		1.0	mA
Maximum output current	I_O max		0.7	A
Allowable power dissipation	Pd max		0.9	W
Operating temperature	Topr		–20 to +75	°C
Storage temperature	Tstg		–55 to +150	°C

Operating Conditions at Ta = 25 °C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		5.0	V
Operating voltage range	V_{CC} op		4.0 to 15.0	V
Recommended load resistance	R_L	Pin 11 to 20, pin 5 to 26	8.0	Ω

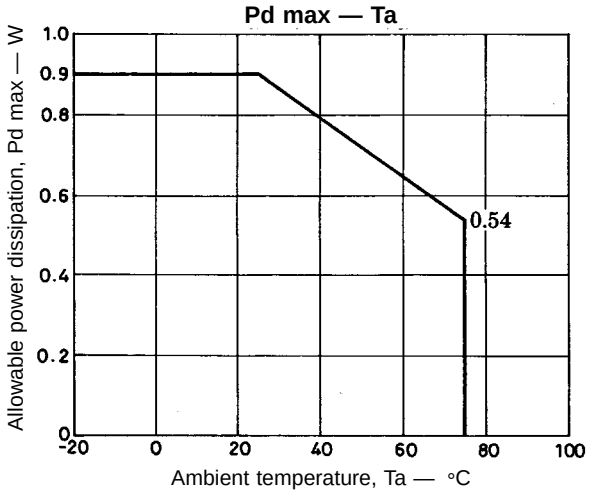
Electrical Characteristics at Ta = 25 °C, V_{CC} = 5.0 V

Parameter	Symbol	Conditions	min	typ	max	Unit
No-load current drain	$I_{CC}1$	Mute off pins 7, 22 and 24 connected to GND	5	10	20	mA
	$I_{CC}2$	Mute on pins 7, 22 and 24 connected to GND	3	7	15	mA
	$I_{CC}3$	Mute off pins 7, 22 and 24 connected to 1/2 V_{CC}	10	20	30	mA
	$I_{CC}4$	Mute on pins 7, 22 and 24 connected to 1/2 V_{CC}	4	8	16	mA
Output offset voltage	$V_{OF}1$	OUT1-OUT2	–50		+50	mV
	$V_{OF}2$	OUT4-OUT3	–50		+50	mV
Input-output voltage difference	V_{BIO}	Buffer amplifier	–30		+30	mV
Input voltage range	V_{BICM}	Buffer amplifier	1.5	V_{CC}–1.5		V
Common-mode input voltage range	V_{ICM}	Amplifier 2, amplifier 3	1.0	V_{CC}–1.5		V
Input bias current	I_B			50	300	nA
Output voltage	V_O	8 Ω load between pins 11 — 20, 5 — 26	2.8	3.3		V
Bridge output voltage difference	V_{OD}	8 Ω load between pins 11 — 20, 5 — 26	1.8	2.2		V
Closed-circuit voltage gain	VG	Specified Test Circuit, f = 1 kHz	30	38		dB
Mute on voltage	V_M			0.7		V
Mute pin inflow current	I_M			3.0		μA

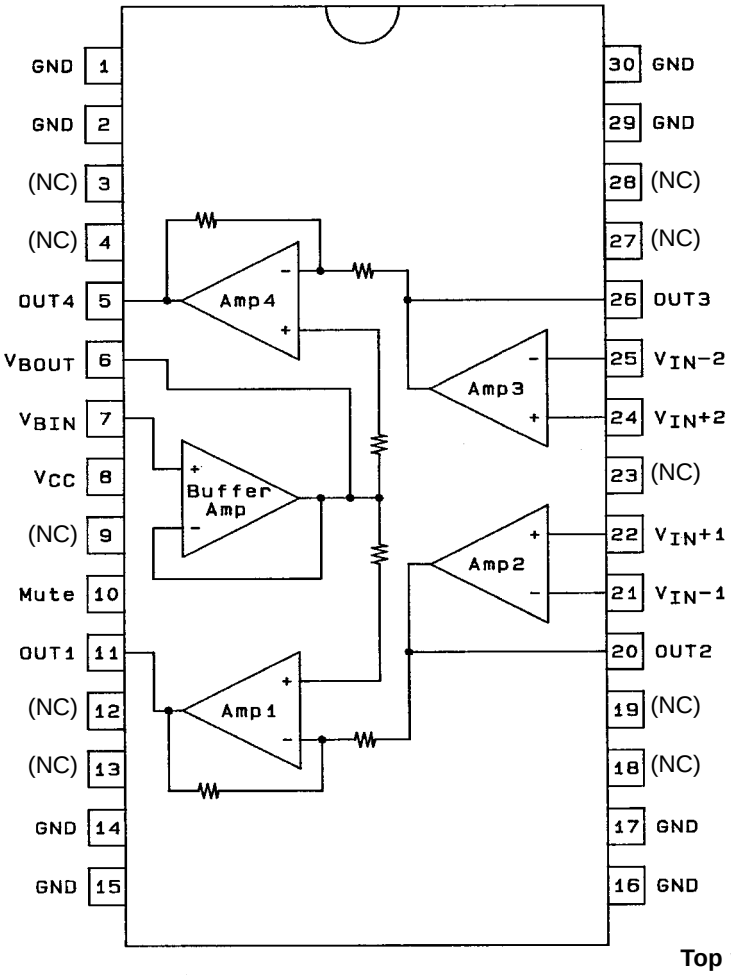
*Thermal shutdown function built in.

Notes:

1. When the muting function is on, the OUT1 to OUT4 outputs are turned off and the buffer output is not turned off.
2. This IC must be handled carefully owing to its susceptibility electrostatic discharge damage.



Block Diagram and Pin Assignment



Do not use the NC pin.

Top view

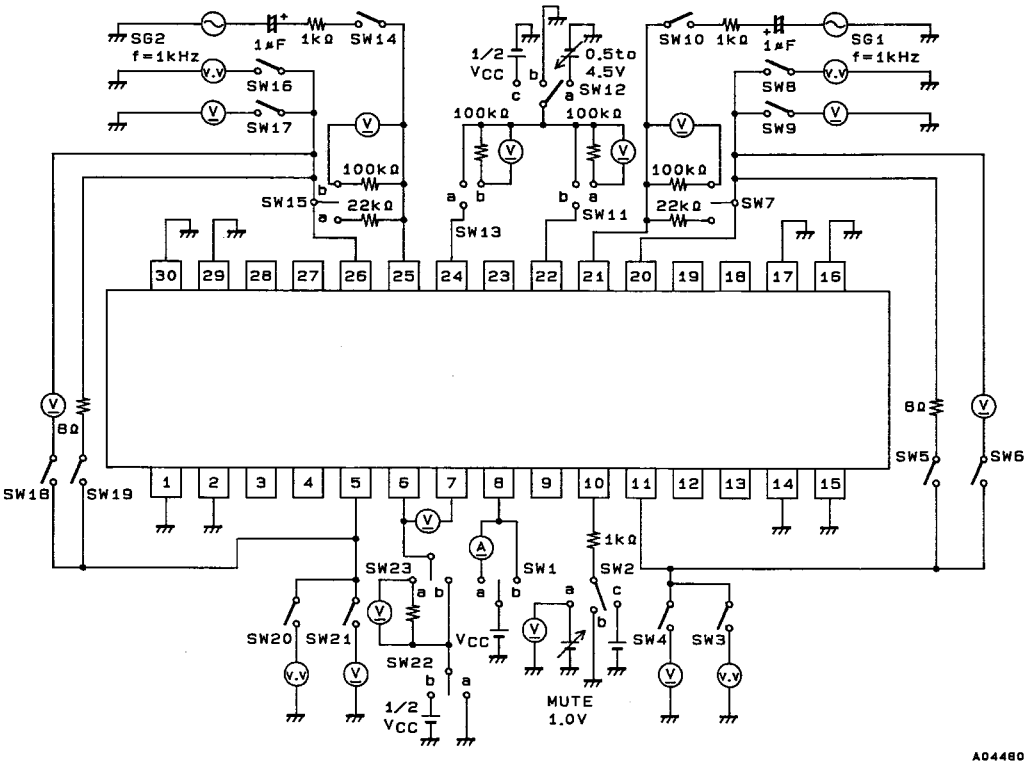
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Test Method

SW No. / Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
$I_{CC}1$	a	b	OFF	OFF	OFF	OFF	b	OFF	OFF	OFF	b	b	a	OFF	a	OFF	OFF	OFF	OFF	OFF	OFF	a	b
$I_{CC}2$	a	c	OFF	OFF	OFF	OFF	b	OFF	OFF	OFF	b	b	a	OFF	a	OFF	OFF	OFF	OFF	OFF	OFF	a	b
$I_{CC}3$	a	b	OFF	OFF	OFF	OFF	b	OFF	OFF	OFF	b	c	a	OFF	a	OFF	OFF	OFF	OFF	OFF	OFF	b	b
$I_{CC}4$	a	c	OFF	OFF	OFF	OFF	b	OFF	OFF	OFF	b	c	a	OFF	a	OFF	OFF	OFF	OFF	OFF	OFF	b	b
$V_{OF}1,2$	b	b	OFF	OFF	OFF	ON	b	OFF	OFF	OFF	b	c	a	OFF	a	OFF	OFF	ON	OFF	OFF	OFF	b	b
V_{BIO}	b	b	OFF	OFF	OFF	ON	b	OFF	OFF	OFF	b	c	a	OFF	a	OFF	OFF	ON	OFF	OFF	OFF	b	b
I_B	b	b	OFF	OFF	OFF	OFF	a	OFF	OFF	OFF	a	c	b	OFF	b	OFF	OFF	OFF	OFF	OFF	OFF	b	a
V_O	b	b	OFF	ON	ON	OFF	b	OFF	ON	OFF	b	a	a	OFF	a	OFF	ON	OFF	ON	OFF	ON	b	b
V_{OD}	b	b	OFF	OFF	ON	ON	b	OFF	OFF	OFF	b	a	a	OFF	a	OFF	OFF	ON	ON	OFF	OFF	b	b
VG	b	b	ON	OFF	OFF	OFF	a	ON	OFF	ON	b	c	a	ON	b	ON	OFF	OFF	OFF	ON	OFF	b	b
V_M	b	a	OFF	ON	OFF	OFF	b	OFF	ON	OFF	b	c	a	OFF	a	OFF	ON	OFF	OFF	OFF	ON	b	b

1. For $I_{CC}1$ to 4, measure the circuit current.
2. For $V_{OF}1$ and 2, measure the voltage between pins 11 and 20 and the voltage between pins 5 and 26.
3. For V_{BIO}, measure the voltage between pins 7 and 6.
4. For I_B, measure the voltage across the 100 kΩ resistor.
5. For V_O, measure the voltage on pins 11, 20, 5 and 26 by switching the input pin voltage to 0.5 V and 4.5 V, respectively.
6. For V_{OD}, measure the voltage between pins 11 and 20 and the voltage between pins 5 and 26.
7. For VG, measure the voltage on pins 11, 20, 5 and 26 at f = 1 kHz, and use the following formula:
   VG = 20 log V_O/V_1 dB.
8. V_M is the mute voltage when the mute voltage is varied and the output is turned off.

Test Circuit



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