



# 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.

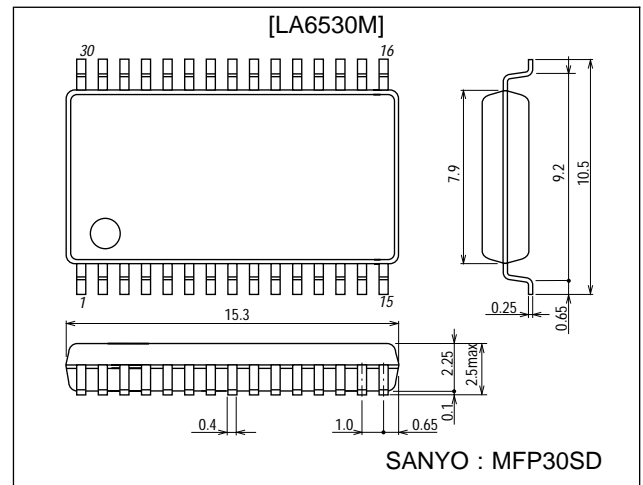
### Features

- 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-MFP30SD



### Specifications

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

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	$P_d$ max		0.9	W
Operating temperature	$T_{opr}$		-20 to +75	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

■ Any and all SANYO products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your SANYO representative nearest you before using any SANYO products described or contained herein in such applications.

■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

**SANYO Electric Co.,Ltd. Semiconductor Company**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

## LA6530M

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

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

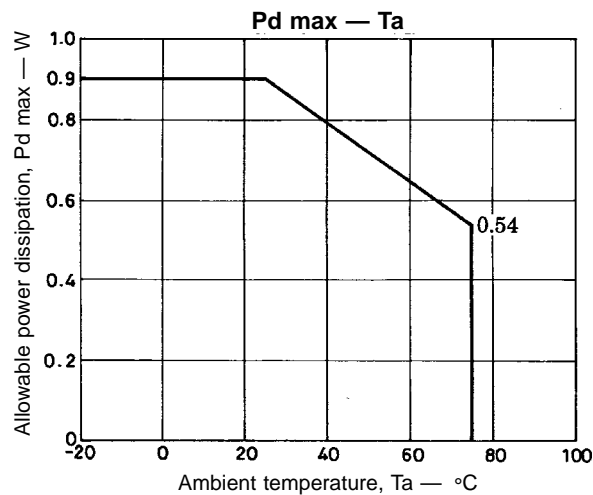
### Electrical Characteristics at $T_a = 25\text{ }^\circ\text{C}$ , $V_{CC} = 5.0\text{ V}$

Parameter	Symbol	Conditions	min	typ	max	Unit
No-load current drain	$I_{CC1}$	Mute off pins 7, 22 and 24 connected to GND	5	10	20	mA
	$I_{CC2}$	Mute on pins 7, 22 and 24 connected to GND	3	7	15	mA
	$I_{CC3}$	Mute off pins 7, 22 and 24 connected to $1/2 V_{CC}$	10	20	30	mA
	$I_{CC4}$	Mute on pins 7, 22 and 24 connected to $1/2 V_{CC}$	4	8	16	mA
Output offset voltage	$V_{OF1}$	OUT1-OUT2	-50		+50	mV
	$V_{OF2}$	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 $\Omega$ load between pins 11 — 20, 5 — 26	2.8	3.3		V
Bridge output voltage difference	$V_{OD}$	8 $\Omega$ load between pins 11 — 20, 5 — 26	1.8	2.2		V
Closed-circuit voltage gain	$V_G$	Specified Test Circuit, $f = 1\text{ kHz}$	30	38		dB
Mute on voltage	$V_M$			0.7		V
Mute pin inflow current	$I_M$			3.0		$\mu\text{A}$

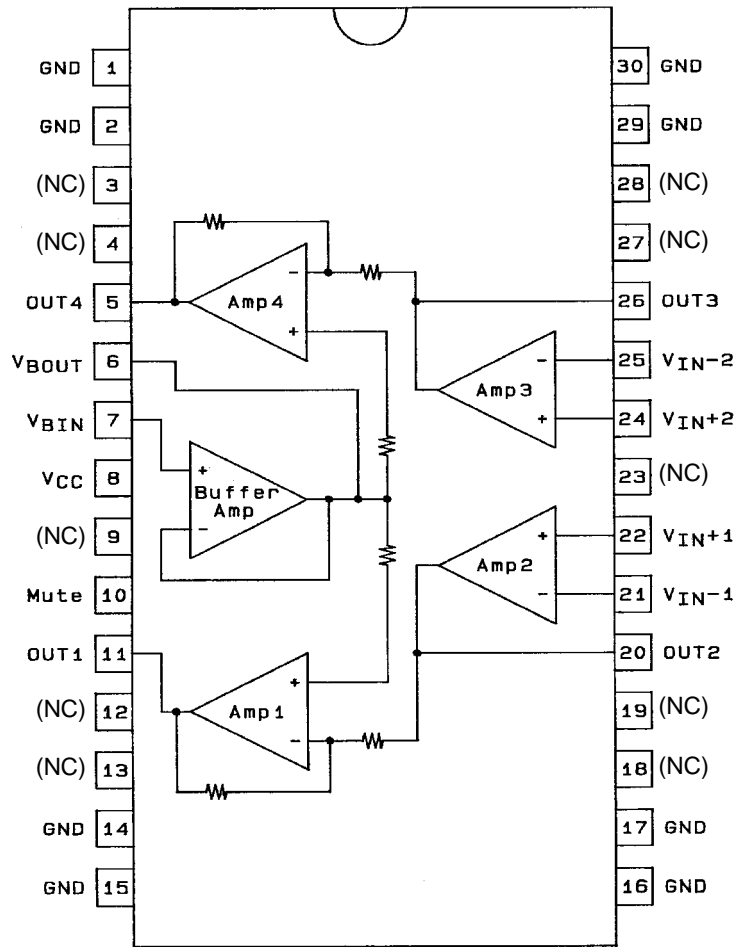
\*Thermal shutdown function built in.

Notes:

- When the muting function is on, the OUT1 to OUT4 outputs are turned off and the buffer output is not turned off.
- 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

A04479

Test Method

SW No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
I <sub>CC1</sub>	a	b	OFF	OFF	OFF	OFF	b	OFF	OFF	OFF	b	b	a	OFF	a	OFF	OFF	OFF	OFF	OFF	OFF	OFF	a	b
I <sub>CC2</sub>	a	c	OFF	OFF	OFF	OFF	b	OFF	OFF	OFF	b	b	a	OFF	a	OFF	OFF	OFF	OFF	OFF	OFF	OFF	a	b
I <sub>CC3</sub>	a	b	OFF	OFF	OFF	OFF	b	OFF	OFF	OFF	b	c	a	OFF	a	OFF	OFF	OFF	OFF	OFF	OFF	OFF	b	b
I <sub>CC4</sub>	a	c	OFF	OFF	OFF	OFF	b	OFF	OFF	OFF	b	c	a	OFF	a	OFF	OFF	OFF	OFF	OFF	OFF	OFF	b	b
V <sub>OF1,2</sub>	b	b	OFF	OFF	OFF	ON	b	OFF	OFF	OFF	b	c	a	OFF	a	OFF	OFF	ON	OFF	OFF	OFF	OFF	b	b
V <sub>BIO</sub>	b	b	OFF	OFF	OFF	ON	b	OFF	OFF	OFF	b	c	a	OFF	a	OFF	OFF	ON	OFF	OFF	OFF	OFF	b	b
I <sub>B</sub>	b	b	OFF	OFF	OFF	OFF	a	OFF	OFF	OFF	a	c	b	OFF	b	OFF	OFF	OFF	OFF	OFF	OFF	OFF	b	a
V <sub>O</sub>	b	b	OFF	ON	ON	OFF	b	OFF	ON	OFF	b	a	a	OFF	a	OFF	ON	OFF	ON	OFF	ON	OFF	b	b
V <sub>OD</sub>	b	b	OFF	OFF	ON	ON	b	OFF	OFF	OFF	b	a	a	OFF	a	OFF	OFF	ON	ON	OFF	OFF	OFF	b	b
V <sub>G</sub>	b	b	ON	OFF	OFF	OFF	a	ON	OFF	ON	b	c	a	ON	b	ON	OFF	OFF	OFF	ON	OFF	OFF	b	b
V <sub>M</sub>	b	a	OFF	ON	OFF	OFF	b	OFF	ON	OFF	b	c	a	OFF	a	OFF	ON	OFF	OFF	OFF	OFF	ON	b	b

- For I<sub>CC1</sub> to 4, measure the circuit current.
- For V<sub>OF1</sub> and 2, measure the voltage between pins 11 and 20 and the voltage between pins 5 and 26.
- For V<sub>BIO</sub>, measure the voltage between pins 7 and 6.
- For I<sub>B</sub>, measure the voltage across the 100 kΩ resistor.
- For V<sub>O</sub>, 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.
- For V<sub>OD</sub>, measure the voltage between pins 11 and 20 and the voltage between pins 5 and 26.
- For V<sub>G</sub>, measure the voltage on pins 11, 20, 5 and 26 at f = 1 kHz, and use the following formula:  
 $V_G = 20 \log V_O/V_1 \text{ dB}$ .
- V<sub>M</sub> is the mute voltage when the mute voltage is varied and the output is turned off.

