



# LA6525M

## Four-Channel Bridge Driver for Compact Disc Players

### Overview

The LA6525M is a four-channel, high-current bridge driver IC with output muting. It features two dual-output 400mA (max) and two dual-output 700mA (max) channels, making it ideal for use in compact disc players.

The LA6525M incorporates a reference voltage switch, a thermal protection circuit and two input buffer amplifiers in addition to the output driver amplifiers.

The LA6525M operates from a 5V supply and is available in 30-pin MFPs.

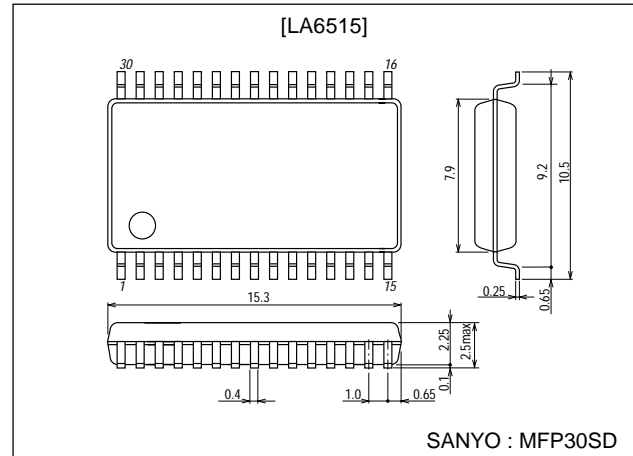
### Features

- Four-channel bridge connection (BTL) power amplifier.
- Output muting.
- Two dual-output 400mA (max) and two dual-output 700mA (max) channels.
- Reference voltage switch.
- Thermal protection circuit.
- Two input buffer amplifiers.
- 5V supply.
- 30-pin MFP.

### Package Dimensions

unit:mm

3073A-MFP30SD



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		9	V
MUTE input voltage	$V_{\text{MUTE}}$		8	V
Differential input voltage	$V_{\text{ID}}$		8	V
Common-mode input voltage	$V_{\text{ICM}}$		8	V
Input voltage	$V_{\text{INB}}$	Buffer amplifier	8	V
Allowable power dissipation	$P_d \text{ max}$		0.9	W
Operating temperature	$T_{\text{opr}}$		-20 to +75	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	$V_{CC}$		5	V
Load resistance		3 to 4 pin, 12 to 13 pin, 18 to 19 pin, and 27 to 28 pin	8.0	$\Omega$

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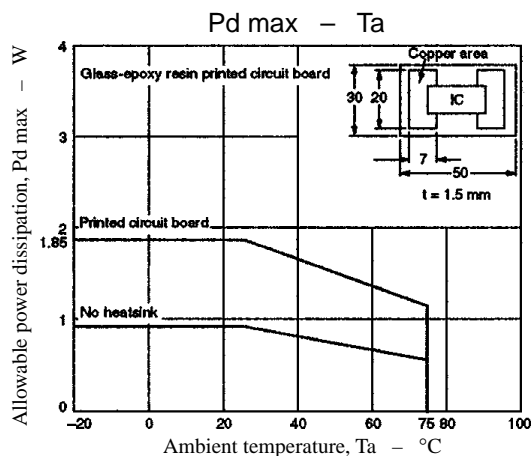
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## Electrical Characteristics at $T_a = 25^\circ\text{C}$ , $V_{CC}=5\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply current	$I_{CC}$	Mute is OFF. See note 1.	25	40	60	mA
		Mute is ON. See note 1.	5	9	20	mA
BUFF IN1 and BUFF IN2 input voltage	$V_{BICM}$		1.5		$V_{CC}-1.5$	V
Mute turn-on voltage	$V_{MUTE}$			2.2		V
Reference switch turn-on voltage	$V_{REFSW}$			2.5		V
Input voltage for all other inputs	$V_{ICM}$		1.0		$V_{CC}-1.5$	V
Bridge amplifier closed-loop voltage gain	$G_V$			6		dB
OUT1, OUT2, OUT7 and OUT8 output source voltage	$V_{O1}$	See note 2.	3.4	3.6		V
OUT1, OUT2, OUT7 and OUT8 output sink voltage	$V_{O2}$	See note 2.		1.0	1.4	V
OUT3, OUT4, OUT5 and OUT6 output source voltage	$V_{O3}$	See note 2.	2.8	3.4		V
OUT3, OUT4, OUT5 and OUT6 output sink voltage	$V_{O4}$	See note 2.		1.6	2.2	V
Amplifiers 3 and 6 output limiting voltage	$V_{OL}$			5		V
OUT1, OUT2, OUT7 and OUT8 output offset voltage	$V_{OFF1}$	See note 3.	-50		+50	mV
OUT3 and OUT4 output offset voltage	$V_{OFF2}$	See note 3.	-30		+30	mV
OUT5 and OUT6 output offset voltage	$V_{OFF3}$	Reference switch ON or OFF. See note 3.	-40		+40	mV
Buffer 1 input-to-output voltage differential	$V_{BIO1}$		-30		+30	mV
Buffer 2 input-to-output voltage differential	$V_{BIO2}$		0.5	0.6	0.8	V
Amplifier 2 input-to-output voltage differential	$V_{IO2}$		0.5	0.6	0.8	V
Amplifier 7 input-to-output voltage differential	$V_{IO7}$		0.5	0.6	0.8	V
$V_{IN2^+}$ , $V_{IN2^-}$ , $V_{IN3^+}$ and $V_{IN3^-}$ input bias current	$I_B$	See note 4.		100	500	nA
Mute turn-on current	$I_{MUTE}$			80		$\mu\text{A}$
Reference switch turn-on current	$I_{REFSW}$			26		$\mu\text{A}$
OUT1 to OUT8 load resistance	$R_L$			8		$\Omega$

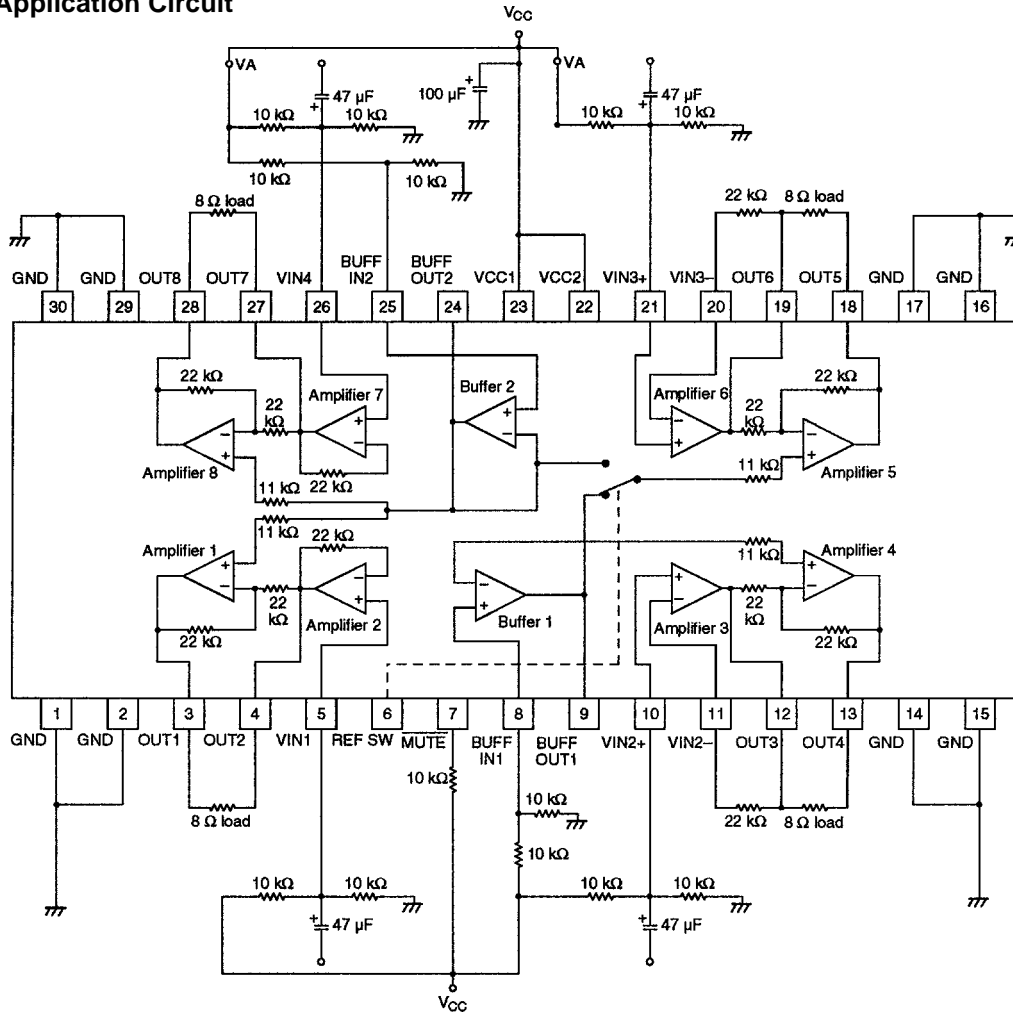
### Notes

1. Amplifier non-inverting inputs are held at 0.5V and amplifier inverting inputs are connected to outputs through a 22k $\Omega$  resistor.
2. Output-to-ground voltage when an 8 $\Omega$  load is connected between a pair of bridge amplifier outputs.
3. Voltage differential between a pair of bridge amplifier outputs.
4. Amplifier non-inverting input is connected to 0.5 $V_{CC}$  through a 100k $\Omega$  resistor, inverting input is connected to output through a 100k $\Omega$  resistor. The current is determined from the voltage across the resistors.



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## Sample Application Circuit



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