

	No.4064A	Monolithic Linear IC
		LA7155M
Audio Switch for PAL 21 Pin Connectors		

Overview

The LA7155M is an audio switch of a stereophonic system for PAL21 pin connectors.

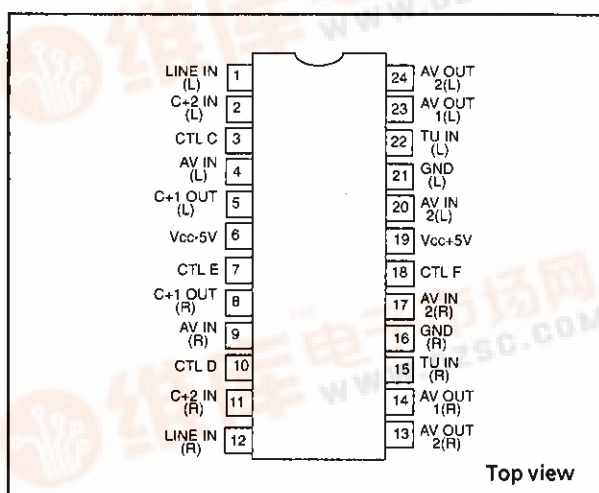
Features

- +5V power supply.
- Smaller size allowing for saving space.
- Low distortion factor.

Functions

- 4 audio switch circuits of 2 inputs and 1 output.
- 2 audio switch circuits of 3 inputs and 1 output.
- 2 audio amplifying circuits of 2dB.
- 2 audio amplifying circuits of 12dB.

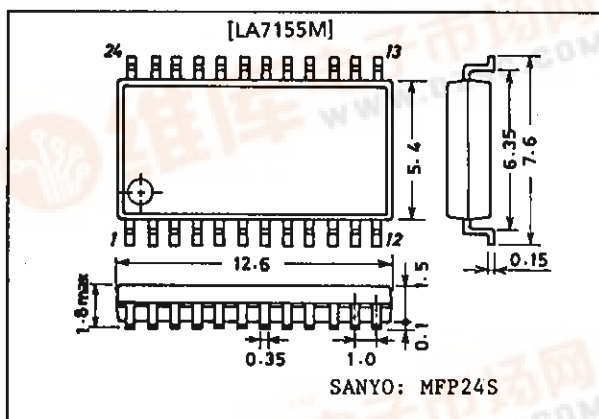
Pin Assignment



Package Dimensions

(unit :mm)

3112



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Maximum Ratings at Ta = 25°C

Maximum supply voltage	V _{CC} max	±7	Unit
Allowable power dissipation	Pd max	300	V
Operating temperature	Topr	-20 to +75	mV
Storage temperature	Tstg	-55 to +150	°C

Operating Conditions at Ta = 25°C

Recommended supply voltage	V _{CC}	±5	Unit
Operating voltage range	V _{CC} op	±4 to ±6	V

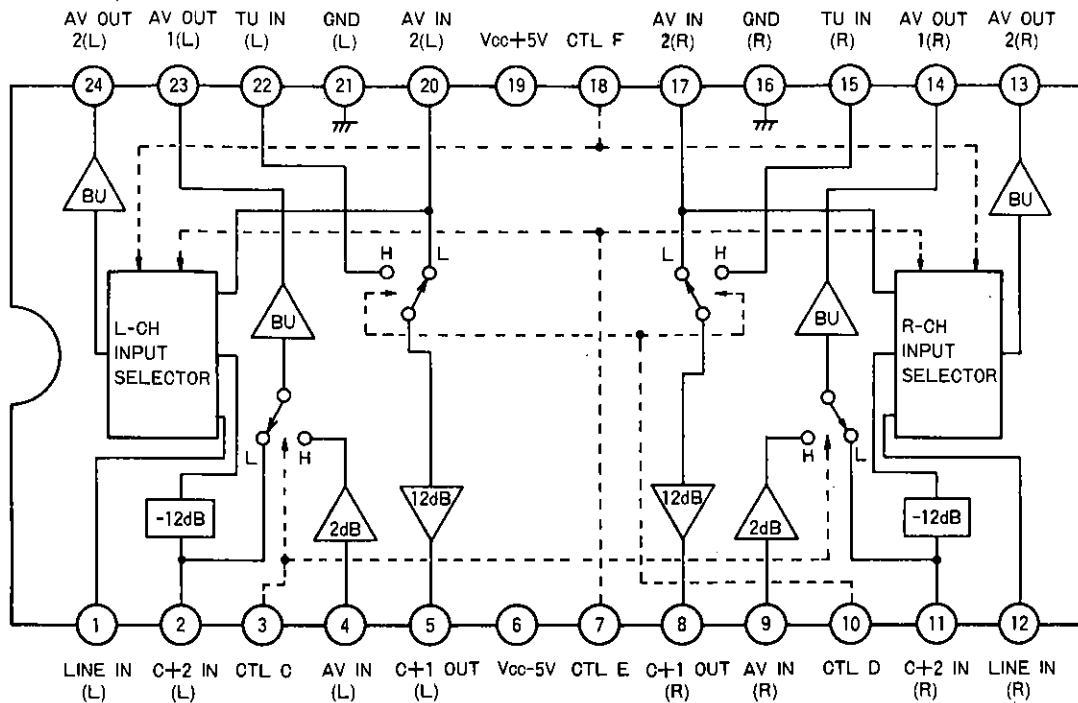
* Both + and - voltages of supply are required.

Operating characteristics at Ta=25°C, Vcc=±5V and f=1kHz

			min	typ	max	Unit
Current dissipation	I _{CC}	No signal	8	11	14	mA
Output voltage 1	V _{O1}	V _{IN} =-18dBV	-19	-18	-17	dBV
Output voltage 2	V _{O2}	V _{IN} =-6 dBV	-19	-18	-17	dBV
Output voltage 3	V _{O3}	V _{IN} =-6 dBV	-7	-6	-5	dBV
Output voltage 4	V _{O4}	V _{IN} =-8 dBV	-7	-6	-5	dBV
Output voltage 5	V _{O5}	V _{IN} =-18dBV	-7	-6	-5	dBV
Total harmonic distortion 1	THD ₁	V _{IN} =-18dBV		0.005	0.1	%
Total harmonic distortion 2	THD ₂	V _{IN} =-6 dBV		0.005	0.1	%
Total harmonic distortion 3	THD ₃	V _{IN} =-6 dBV		0.008	0.1	%
Total harmonic distortion 4	THD ₄	V _{IN} =-8 dBV		0.01	0.1	%
Total harmonic distortion 5	THD ₅	V _{IN} =-18dBV		0.01	0.1	%
Maximum output voltage 1	V _{OM1}	THD=1%	5.0	9.0		dBV
Maximum output voltage 2	V _{OM2}	THD=1%	-7	-3		dBV
Maximum output voltage 3	V _{OM3}	THD=1%	6.0	9.0		dBV
Maximum output voltage 4	V _{OM4}	THD=1%	6.0	9.0		dBV
Maximum output voltage 5	V _{OM5}	THD=1%	6.0	9.0		dBV
Output noise voltage 1	V _{ON1}	No signal Rg=600Ω DIN AUDIO FILTER		-110	-104	dBV
Output noise voltage 2	V _{ON2}			-110	-104	dBV
Output noise voltage 3	V _{ON3}			-107	-101	dBV
Output noise voltage 4	V _{ON4}			-105	-99	dBV
Output noise voltage 5	V _{ON5}			-101	-94	dBV
Input separation	V _{CR}	V _{IN} =-8dBV, Other input, Rg=600Ω	-80			dB
Switched DC offset	V _{DC}	Outputs at pins 13 and 24 No signal	-20	0	+20	mV
H mode hold voltage	V _{CHI}	V ₃ , V ₇ , V ₁₀ , V ₁₈	3.5		+V _{CC}	V
L mode hold voltage	V _{CLOW}	V ₃ , V ₇ , V ₁₀ , V ₁₈	0		1.0	V

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Block Diagram



AV OUT 1

Control pin 3	Output L-CH	Output R-CH
L	C+2 IN (L)	C+2 IN (R)
H	AV IN (L)	AV IN (R)

C+1 OUT

Control pin 10	Output L-CH	Output R-CH
L	AV IN 2 (L)	AV IN 2 (R)
H	TU IN (L)	TU IN (R)

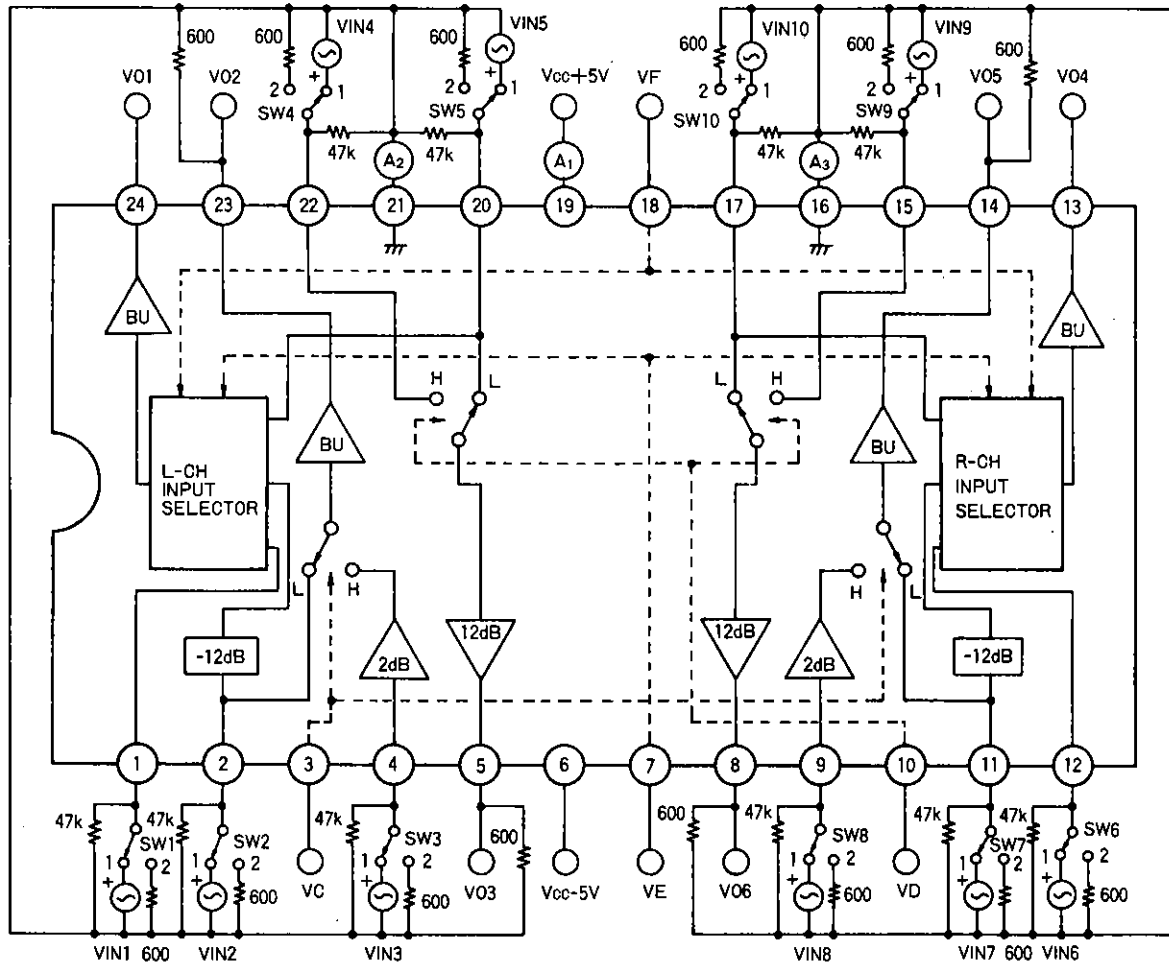
AV OUT 2

Control pin 7	Control pin 18	Output L-CH	Output R-CH
L	L	AV IN 2 (L)	AV IN 2 (R)
L	H	LINE IN (L)	LINE IN (R)
H	L	C+2 IN (L)	C+2 IN (R)
H	H	LINE IN (L)	LINE IN (R)

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Test Circuit

Unit (resistance: Ω)



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Table of switch operation

Symbol	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	VC	VD	VE	VF	Measuring point
I _{CC}	2	2	2	2	2	2	2	2	2	2	L	L	L	L	A ₁ +A ₂ +A ₃
VO1-1L	1	2	2	2	2	2	2	2	2	2	L	L	L	H	VO1
VO1-1R	2	2	2	2	2	1	2	2	2	2	L	L	L	H	VO4
VO1-2L	2	2	2	2	1	2	2	2	2	2	L	L	L	L	VO1
VO1-2R	2	2	2	2	2	2	2	2	2	1	L	L	L	L	VO4
VO2-1L	2	1	2	2	2	2	2	2	2	2	L	L	H	L	VO1
VO2-1R	2	2	2	2	2	2	1	2	2	2	L	L	H	L	VO4
VO3-1L	2	1	2	2	2	2	2	2	2	2	L	L	H	L	VO2
VO3-1R	2	2	2	2	2	2	1	2	2	2	L	L	H	L	VO5
VO4-1L	2	2	1	2	2	2	2	2	2	2	H	L	H	L	VO2
VO4-1R	2	2	2	2	2	2	2	1	2	2	H	L	H	L	VO5
VO5-1L	2	2	2	1	2	2	2	2	2	2	H	H	H	L	VO3
VO5-1R	2	2	2	2	2	2	2	2	1	2	H	H	H	L	VO6
VO5-2L	2	2	2	2	1	2	2	2	2	2	H	L	H	L	VO3
VO5-2R	2	2	2	2	2	2	2	2	2	1	H	L	H	L	VO6
THD1-1L	1	2	2	2	2	2	2	2	2	2	L	L	L	H	VO1
THD1-1R	2	2	2	2	2	1	2	2	2	2	L	L	L	H	VO4
THD1-2L	2	2	2	2	1	2	2	2	2	2	L	L	L	L	VO1
THD1-2R	2	2	2	2	2	2	2	2	2	1	L	L	L	L	VO4
THD2-1L	2	1	2	2	2	2	2	2	2	2	L	L	H	L	VO1
THD2-1R	2	2	2	2	2	2	1	2	2	2	L	L	H	L	VO4
THD3-1L	2	1	2	2	2	2	2	2	2	2	L	L	H	L	VO2
THD3-1R	2	2	2	2	2	2	1	2	2	2	L	L	H	L	VO5
THD4-1L	2	2	1	2	2	2	2	2	2	2	H	L	H	L	VO2
THD4-1R	2	2	2	2	2	2	2	1	2	2	H	L	H	L	VO5
THD5-1L	2	2	2	1	2	2	2	2	2	2	H	H	H	L	VO3
THD5-1R	2	2	2	2	2	2	2	2	1	2	H	H	H	L	VO6
THD5-2L	2	2	2	2	1	2	2	2	2	2	H	L	H	L	VO3
THD5-2R	2	2	2	2	2	2	2	2	2	1	H	L	H	L	VO6
VOM1-1L	1	2	2	2	2	2	2	2	2	2	L	L	L	H	VO1
VOM1-1R	2	2	2	2	2	1	2	2	2	2	L	L	L	H	VO4
VOM1-2L	2	2	2	2	1	2	2	2	2	2	L	L	L	L	VO1
VOM1-2R	2	2	2	2	2	2	2	2	2	1	L	L	L	L	VO4
VOM2-1L	2	1	2	2	2	2	2	2	2	2	L	L	H	L	VO1
VOM2-1R	2	2	2	2	2	2	1	2	2	2	L	L	H	L	VO4
VOM3-1L	2	1	2	2	2	2	2	2	2	2	L	L	H	L	VO2
VOM3-1R	2	2	2	2	2	2	1	2	2	2	L	L	H	L	VO5
VOM4-1L	2	2	1	2	2	2	2	2	2	2	H	L	H	L	VO2
VOM4-1R	2	2	2	2	2	2	2	1	2	2	H	L	H	L	VO5
VOM5-1L	2	2	2	1	2	2	2	2	2	2	H	H	H	L	VO3
VOM5-1R	2	2	2	2	2	2	2	2	1	2	H	H	H	L	VO6
VOM5-2L	2	2	2	2	1	2	2	2	2	2	H	L	H	L	VO3
VOM5-2R	2	2	2	2	2	2	2	2	2	1	H	L	H	L	VO6

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Symbol	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	VC	VD	VE	VF	Measuring point
VON1-1L	2	2	2	2	2	2	2	2	2	2	L	L	L	H	Vo1
VON1-1R	2	2	2	2	2	2	2	2	2	2	L	L	L	H	Vo4
VON1-2L	2	2	2	2	2	2	2	2	2	2	L	L	L	L	Vo1
VON1-2R	2	2	2	2	2	2	2	2	2	2	L	L	L	L	Vo4
VON2-1L	2	2	2	2	2	2	2	2	2	2	L	L	H	L	Vo1
VON2-1R	2	2	2	2	2	2	2	2	2	2	L	L	H	L	Vo4
VON3-1L	2	2	2	2	2	2	2	2	2	2	L	L	H	L	Vo2
VON3-1R	2	2	2	2	2	2	2	2	2	2	L	L	H	L	Vo5
VON4-1L	2	2	2	2	2	2	2	2	2	2	H	L	H	L	Vo2
VON4-1R	2	2	2	2	2	2	2	2	2	2	H	L	H	L	Vo5
VON5-1L	2	2	2	2	2	2	2	2	2	2	H	H	H	L	Vo3
VON5-1R	2	2	2	2	2	2	2	2	2	2	H	H	H	L	Vo6
VON5-2L	2	2	2	2	2	2	2	2	2	2	H	L	H	L	Vo3
VON5-2R	2	2	2	2	2	2	2	2	2	2	H	L	H	L	Vo6
VCR-1L	1	2	2	2	2	2	2	2	2	2	L	L	L	H	Vo2, 3, 4, 5, 6
VCR-1R	2	2	2	2	2	1	2	2	2	2	L	L	L	H	Vo1, 2, 3, 5, 6
VCR-2L	2	2	2	2	1	2	2	2	2	2	L	L	L	L	Vo2, 3, 4, 5, 6
VCR-2R	2	2	2	2	2	2	2	2	2	1	L	L	L	L	Vo1, 2, 3, 5, 6
VCR-3L	2	1	2	2	2	2	2	2	2	2	L	L	H	L	Vo2, 3, 4, 5, 6
VCR-3R	2	2	2	2	2	2	1	2	2	2	L	L	H	L	Vo1, 2, 3, 5, 6
VCR-4L	2	1	2	2	2	2	2	2	2	2	L	L	H	L	Vo1, 3, 4, 5, 6
VCR-4R	2	2	2	2	2	2	1	2	2	2	L	L	H	L	Vo1, 2, 3, 4, 6
VCR-5L	2	2	1	2	2	2	2	2	2	2	H	L	H	L	Vo1, 3, 4, 5, 6
VCR-5R	2	2	2	2	2	2	2	1	2	2	H	L	H	L	Vo1, 2, 3, 4, 6
VCR-6L	2	2	2	1	2	2	2	2	2	2	H	H	H	L	Vo1, 2, 4, 5, 6
VCR-6R	2	2	2	2	2	2	2	2	1	2	H	H	H	L	Vo1, 2, 3, 4, 5
VCR-7L	2	2	2	2	1	2	2	2	2	2	H	L	H	L	Vo1, 2, 4, 5, 6
VCR-7R	2	2	2	2	2	2	2	2	2	1	H	L	H	L	Vo1, 2, 3, 4, 5
VDC-L	2	2	2	2	2	2	2	2	2	2	L	L	L/H	L/H	Vo1
VDC-R	2	2	2	2	2	2	2	2	2	2	L	L	L/H	L/H	Vo4
VCH1-3	2	2	1	2	2	2	2	2	2	2	—	L	H	L	Vc
VCH1-7	2	1	2	2	2	2	2	2	2	2	L	L	—	L	Vf
VCH1-10	2	2	2	1	2	2	2	2	2	2	H	—	H	L	Vd
VCH1-18	1	2	2	2	2	2	2	2	2	2	L	L	L	—	Ve
VCLOW-3	2	1	2	2	2	2	2	2	2	2	—	L	H	L	Vc
VCLOW-7	2	2	2	2	1	2	2	2	2	2	L	L	—	L	Vf
VCLOW-10	2	2	2	2	1	2	2	2	2	2	H	—	H	L	Vd
VCLOW-18	2	2	2	2	1	2	2	2	2	2	L	L	L	—	Ve

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