

**SANYO**

No.4064A

**LA7155M****Audio Switch for PAL 21 Pin Connectors****Overview**

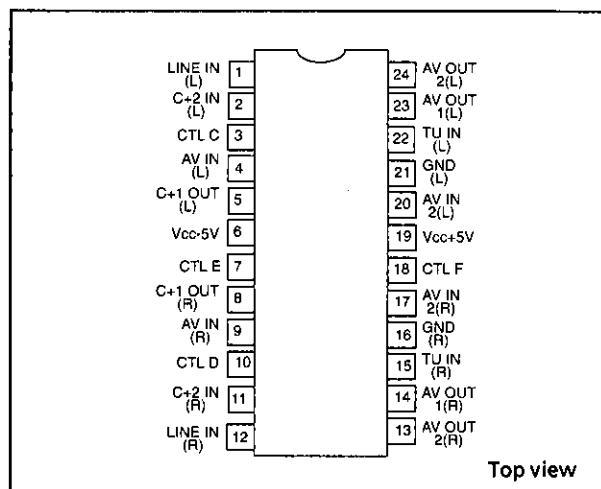
The LA7155M is an audio switch of a stereophonic system for PAL21 pin connectors.

**Features**

- $\pm 5V$  power supply.
- Smaller size allowing for saving space.
- Low distortion factor.

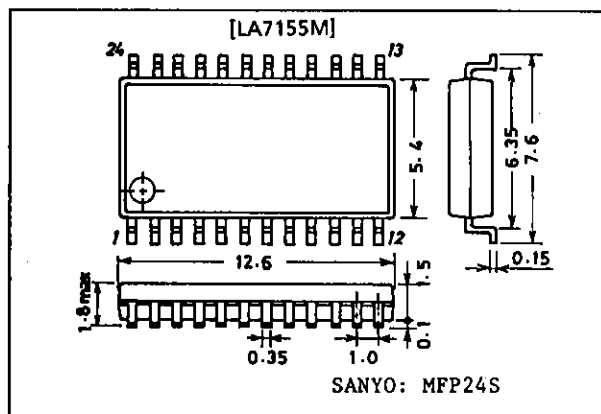
**Functions**

- 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



# LA7155M

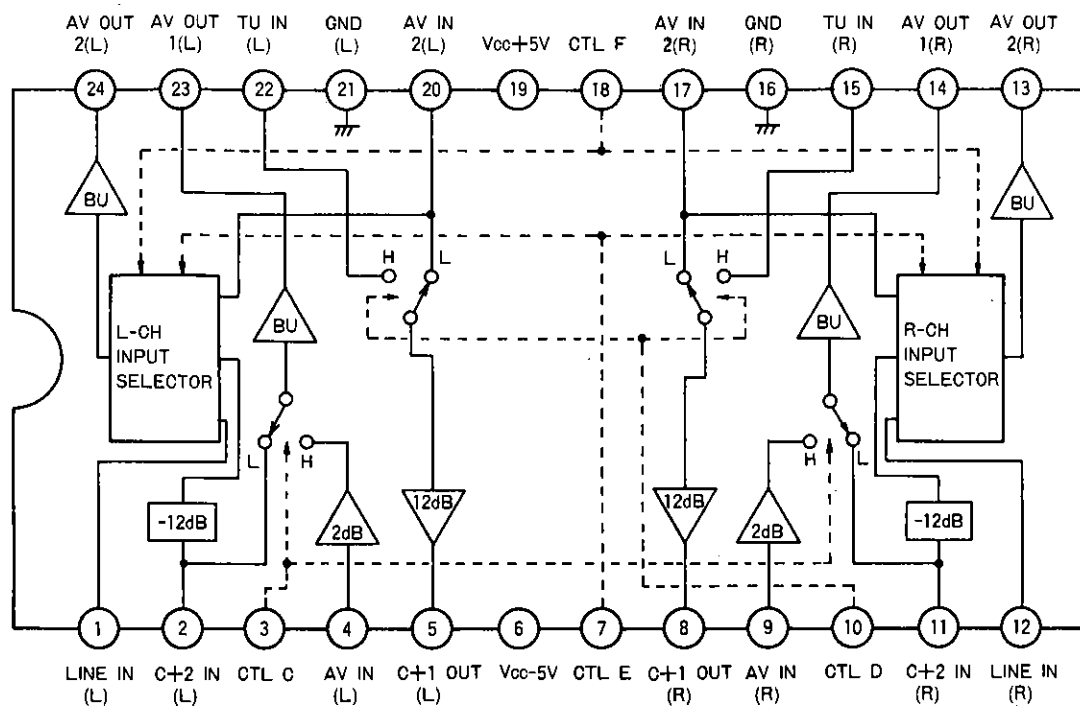
Maximum Ratings at Ta = 25°C				Unit
Maximum supply voltage	V <sub>CC</sub> max	Ta ≤ 75°C	±7	V
Allowable power dissipation	Pd max		300	mV
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-55 to +150	°C

Operating Conditions at Ta = 25°C				Unit
Recomended supply voltage	V <sub>CC</sub>		±5	V
Operating voltage range	V <sub>CC</sub> 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 <sub>CC</sub>	No signal	8	11	14	mA
Output voltage 1	V <sub>O1</sub>	V <sub>IN</sub> =-18dBV	-19	-18	-17	dBV
Output voltage 2	V <sub>O2</sub>	V <sub>IN</sub> =-6 dBV	-19	-18	-17	dBV
Output voltage 3	V <sub>O3</sub>	V <sub>IN</sub> =-6 dBV	-7	-6	-5	dBV
Output voltage 4	V <sub>O4</sub>	V <sub>IN</sub> =-8 dBV	-7	-6	-5	dBV
Output voltage 5	V <sub>O5</sub>	V <sub>IN</sub> =-18dBV	-7	-6	-5	dBV
Total harmonic distortion 1	THD <sub>1</sub>	V <sub>IN</sub> =-18dBV		0.005	0.1	%
Total harmonic distortion 2	THD <sub>2</sub>	V <sub>IN</sub> =-6 dBV		0.005	0.1	%
Total harmonic distortion 3	THD <sub>3</sub>	V <sub>IN</sub> =-6 dBV		0.008	0.1	%
Total harmonic distortion 4	THD <sub>4</sub>	V <sub>IN</sub> =-8 dBV		0.01	0.1	%
Total harmonic distortion 5	THD <sub>5</sub>	V <sub>IN</sub> =-18dBV		0.01	0.1	%
Maximum output voltage 1	V <sub>OM1</sub>	THD=1%	5.0	9.0		dBV
Maximum output voltage 2	V <sub>OM2</sub>	THD=1%	-7	-3		dBV
Maximum output voltage 3	V <sub>OM3</sub>	THD=1%	6.0	9.0		dBV
Maximum output voltage 4	V <sub>OM4</sub>	THD=1%	6.0	9.0		dBV
Maximum output voltage 5	V <sub>OM5</sub>	THD=1%	6.0	9.0		dBV
Output noise voltage 1	V <sub>ON1</sub>	<div style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;"> No signal  Rg=600Ω  DIN AUDIO FILTER </div>		-110	-104	dBV
Output noise voltage 2	V <sub>ON2</sub>			-110	-104	dBV
Output noise voltage 3	V <sub>ON3</sub>			-107	-101	dBV
Output noise voltage 4	V <sub>ON4</sub>			-105	-99	dBV
Output noise voltage 5	V <sub>ON5</sub>			-101	-94	dBV
Input separation	V <sub>CR</sub>	V <sub>IN</sub> =-8dBV, Other input, Rg=600Ω	-80			dB
Switched DC offset	V <sub>DC</sub>	Outputs at pins 13 and 24 No signal	-20	0	+20	mV
H mode hold voltage	V <sub>CHI</sub>	V <sub>3</sub> , V <sub>7</sub> , V <sub>10</sub> , V <sub>18</sub>	3.5		+V <sub>CC</sub>	V
L mode hold voltage	V <sub>CLOW</sub>	V <sub>3</sub> , V <sub>7</sub> , V <sub>10</sub> , V <sub>18</sub>	0		1.0	V

## 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)

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)

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)

## Test Circuit

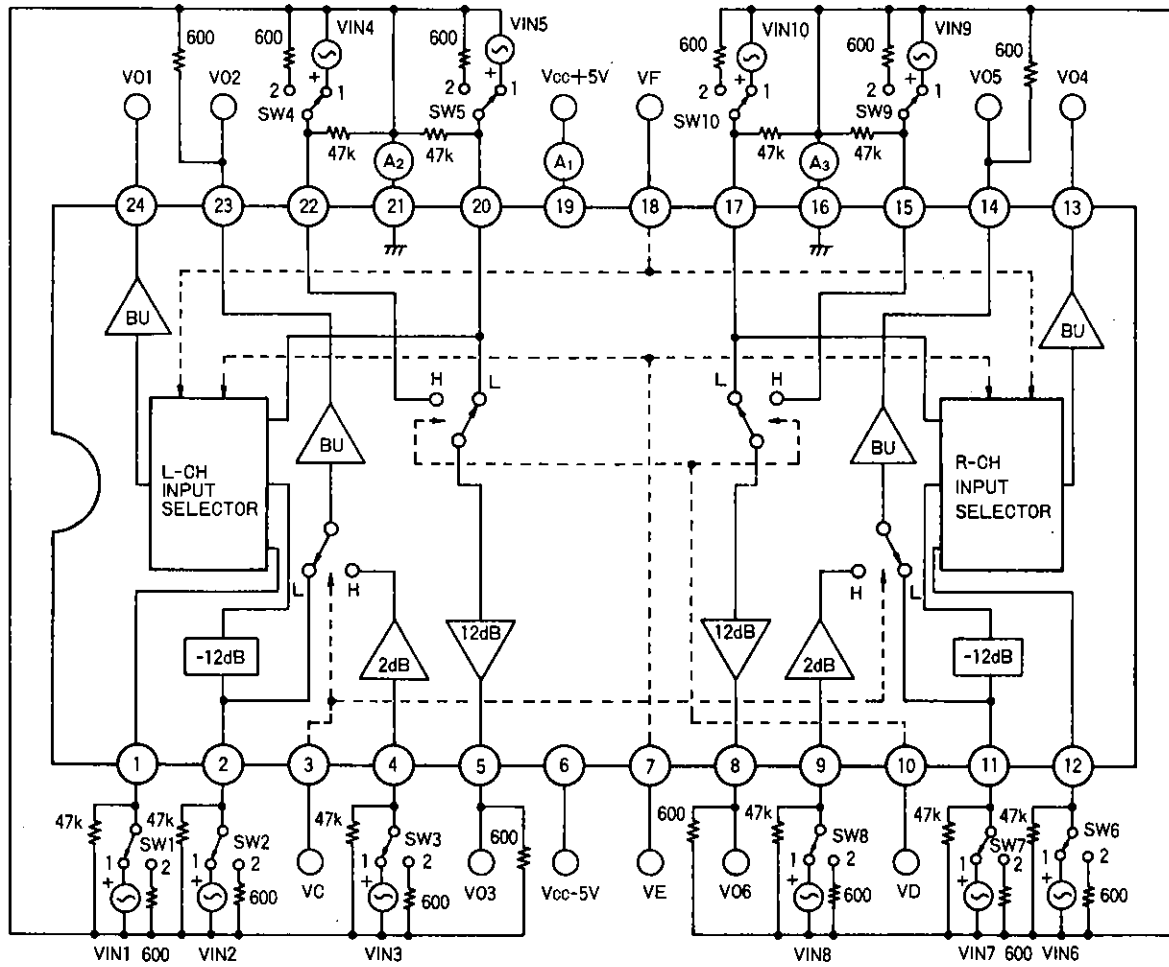
Unit (resistance:  $\Omega$ )

Table of switch operation

Symbol	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	VC	VD	VE	VF	Measuring point
ICC	2	2	2	2	2	2	2	2	2	2	L	L	L	L	A1+A2+A3
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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