

No.4020A

LA7151, 7151M

Audio / Video Switch for VCR Video Camera Use

Overview

The LA7151 and LA7151M are high-performance, dual-channel audio/video switches designed for video camera applications.

The LA7151 and LA7151M have a wide bandwidth, low supply current and a large dynamic range, making them ideal for low-power or battery operated equipment.

The LA7151 and LA7151M operate from a 4.5 to 12.5 V supply and are available in 12-pin SIPs and 10-pin MFPs, respectively.

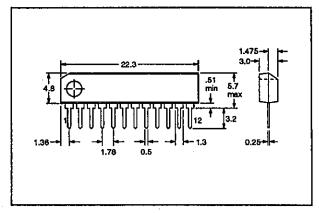
Features

- Two, separately controllable switch circuits
- 50 kΩ input impedance
- Low supply current
- · Large dynamic range
- · Wide bandwidth
- 4.5 to 12.5 V supply voltage
- 12-pin SIP (LA7151) and 10-pin MFP (LA7151M)

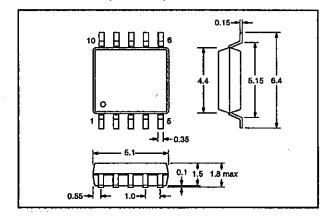
Package Dimensions

Unit: mm

3116-SIP12S (LA7151)

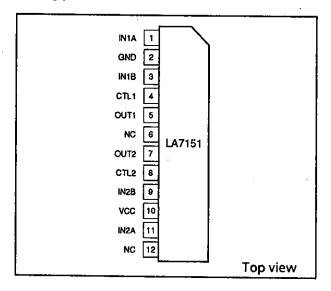


3086A-MFP10S (LA7151M)

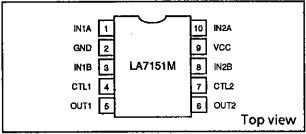


Pin Assignments

LA7151

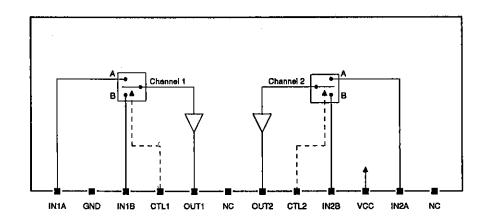


LA7151M

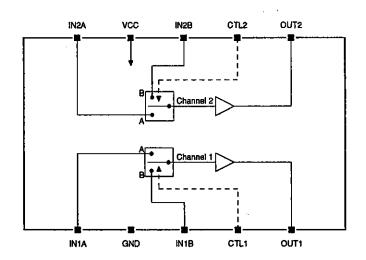


Block Diagrams

LA7151



LA7151M



Pin Functions

Number						
SIP12	DIP10	Name	Equivalent circuit	Description		
1	1	IN1A	IN1A VCC 500 Ω 50 KΩ Θ 200 μΑ Θ 60 μΑ	Channel 1 input A		
2	2	GND		Ground		
3	3	IN1B	IN1В VCC 5500 Ω 550 КΩ 60 КО КА	Channel 1 input B		
4	4	CTL1	15 kΩ CTL1	Channel 1 control input		
5	5	OUT1	OUT1 OUT1	Channel 1 output		
6	_	NC		No connection		
7	6	OUT2	OUT2	Channel 2 output		

Number		- Name	Establish për alcoufë	Persenting	
SIP12	DIP10	каня	Equivalent circuit	Description	
8	7	CTL2	15 kΩ CTL2	Channel 2 control input	
9	8	IN2B	IN2В VCC 500 Ω 50 kΩ В 200 µА В 60 µА	Channel 2 input B	
10	9	vcc		Voltage supply	
11	10	IN2A	1N2A V _{CC} 500 Ω 50 kΩ Θ 200 μΑ Θ 60 μΑ	Channel 2 input A	
12	-	NC		No connection	

Specifications

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage	Vcc	15	٧
Power dissipation	PD	150	mW
Operating temperature range	Topr	-20 to +80	°C
Storage temperature range	T _{stg}	-55 to +150	°C

Recommended Operating Conditions

 $T_a = 25$ °C

Parameter	Symbol	Rating	Unit
Supply voltage	Vcc	5	٧
Supply voltage range	Voc	4.5 to 12.5	٧

Electrical Characteristics

 $V_{CC} = 5 \text{ V, } T_{II} = 25 \text{ }^{\circ}\text{C}$

Parameter	Symbol	Condition	Rating			1112
Paramoter			min	typ	max	Unit
	•	No input, V _{CC} = 5 V	5.5	7.0	8.5	
Supply current	loc	No input, V _{CC} = 9 V	6.0	7.5	9.0	mA.
		No input, V _∞ = 12 V	6.5	8.0	9.5	
Total harmonic distortion	THD	$V_{iN} = 1 V_{p-p}$, $f = 1 kHz$	· _	0.006	0.1	%
Second-harmonic distortion	H ₂	V _{IN} = 2 V _{PP} , f = 4.43 MHz	-	50	-40	dB
Third-harmonic distortion	Н3	V _{IN} = 2 V _{PP} , 1 = 4.43 MHz	-	-55	-45	dB
Maximum output vollage	V _{OM}	f = 1 kHz, THD = 1%	2.2	2.5	_	V _{PP}
Output noise voltage	Von	$R_g = 600 \Omega$, DIN AUDIO filter	-	-110	100	dB
Crosstalk between switches	CTs	R_g = 50 Ω , V_{IN} = 2 V_{PP} , f = 4.43 MHz, measured between switches A and B	-	60	-55	dB
Crosstalk between channels	СТС	$R_g = 50 \ \Omega$, $V_{IN} = 2 \ V_{p-p}$, $f = 4.43 \ MHz$, measured between channels 1 and 2	-	-65	<u>–</u> 60	dB
Frequency characteristic	Gı	V _{IN} = 2 V _{PP} , f = 100 kHz/10 MHz	-1	0	1	dB
Voltage gain	VG	V _{IN} = 2 V _{PP} , f = 4.43 MHz	-0.3	0	0.3	dB
Output differential between A and B channels	Vos		-30	0	30	mV
CTL1 and CTL2 LOW-level input voltage	V _{CB}	Measured at CTL1 and CTL2	0	_	1.5	٧
CTL1 and CTL2 HIGH-level input voltage	V _{CA}	Measured at CTL1 and CTL2	3.5	-	5.0	V
Input impedance	Z _{IN}		-	50		kΩ
Output Impedance	Z _{OUT}		-	10	_	Ω

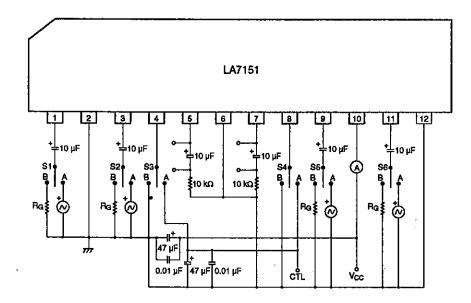
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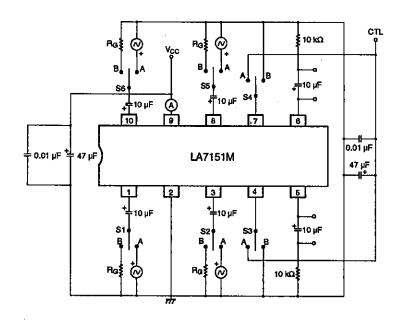
This catalog provides information as of December, 1996. Specifications and information herein are subject to change without notice.

Test Circuit

LA7151



LA7151M



Channel Selection

СТL1	CTL2	Selected input		
0161		CH1	CH2	
LOW	LOW	В	В	
LOW	High	В	A	
HIGH	LOW	A	В	
HIGH	HIGH	A	A	