



# LA7051

## Video, Audio Signal Processor for UHF Band RF Modulator

### Overview

The LA7051 is a video, audio signal processor IC for UHF band RF modulator. It performs the functions of audio FM modulator, video clamp circuit, white clip circuit.

### Applications

- VCRs.

### Features

- 5.5MHz/6.0MHz audio modulation frequency selectable with control pin.
- Contains white clip circuit.
- Minimum number of external parts required.

### Specifications

#### Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> max	V8	12	V
Allowable power dissipation	Pd max	Ta≤60°C	250	mW
Operating temperature	T <sub>opr</sub>		-20 to +85	°C
Storage temperature	T <sub>stg</sub>		-55 to +125	°C

#### Operating Conditions at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V <sub>CC</sub>	V8	7.5	V
Operating voltage range	V <sub>CC</sub> op		7.0 to 8.0	V

#### Operating Characteristics at Ta=25°C, V<sub>CC</sub> (V8)=7.5V

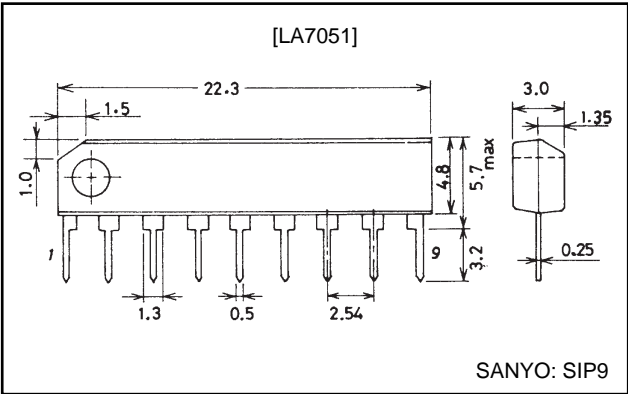
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
V <sub>CC</sub> 8 current drain	I <sub>CC</sub> 8		9.5	14.5	19.5	mA
Video clamp voltage	V <sub>VC</sub>		3.6	3.8	4.0	V
Audio FM sensitivity	Δf <sub>fm</sub> 6	f <sub>m</sub> : 1kHz, 4.5Vp-p input, f <sub>C</sub> : 5.5MHz	900	1250	1600	Hz/mV
	Δf <sub>fm</sub> 7	f <sub>m</sub> : 1kHz, 4.5Vp-p input, f <sub>C</sub> : 5.5MHz, R* : 15kΩ	900	1250	1600	Hz/mV
Audio distortion	THD6	At deviation width ±50kHz		1.6	2.5	%
	THD7	f <sub>m</sub> : 1kHz, f <sub>C</sub> : 5.5MHz		1.6	2.5	%
Video clamp output amplitude deviation		At 1Vp-p stair step signal input	-5		+5	%
Audio output amplitude	V <sub>O</sub> 6	f <sub>C</sub> : 5.5MHz	0.79	1.0	1.26	Vp-p
	V <sub>O</sub> 7		0.79	1.0	1.26	Vp-p
White clip level	V <sub>WC</sub>	At 1.5Vp-p stair step signal input	1.100		1.189	Vp-p

\*Note : Resistance value of 50kΩ variable resistor in Test Circuit.

### Package Dimensions

unit: mm

#### 3017C-SIP9



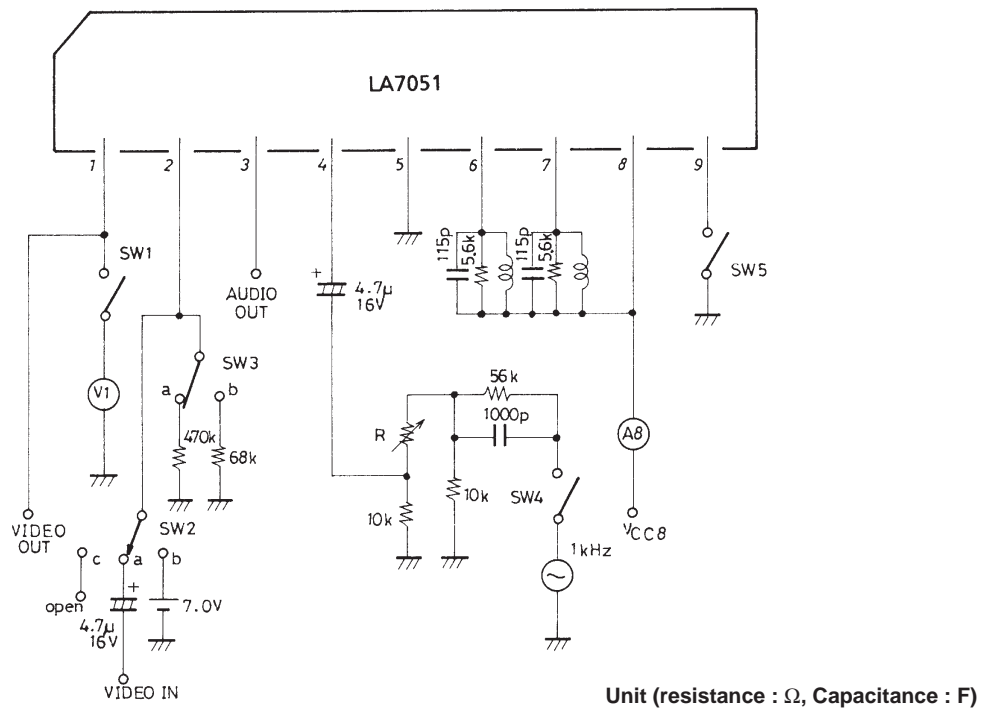
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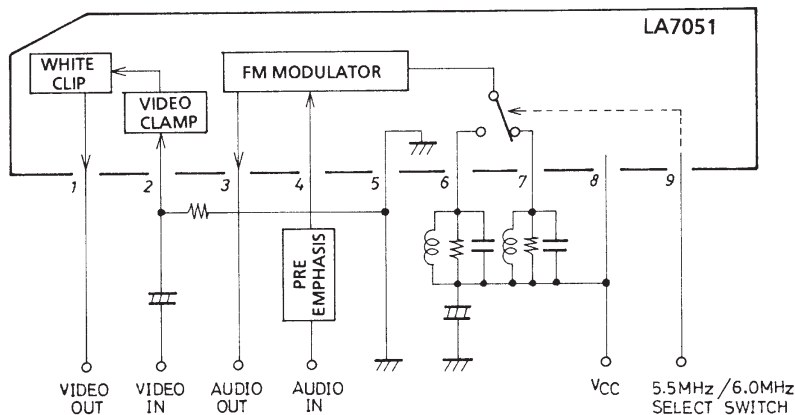
## LA7051 Test Condition

Parameter	Symbol	SW Mode					Test point	Remarks
		SW1	SW2	SW3	SW4	SW5		
V <sub>CC8</sub> current drain	I <sub>CC8</sub>	OFF	c	a	OFF	ON	Pin 8	
Video clamp voltage	V <sub>VC</sub>	ON	c	a	OFF	OFF	Pin 1	
Audio FM sensitivity	Δf <sub>fm6</sub>	OFF	c	a	ON	ON	Pin 3	
	Δf <sub>fm7</sub>	OFF	c	a	ON	OFF	Pin 3	
Audio distortion	THD6	OFF	c	a	ON	ON	pin 3	
	THD7	OFF	c	a	ON	OFF	pin 3	
Video clamp output amplitude deviation		OFF	a	a	OFF	OFF	Pin 1	
Audio output amplitude	V <sub>O6</sub>	OFF	c	a	OFF	ON	Pin 3	
	V <sub>O7</sub>	OFF	c	a	OFF	OFF	pin 3	
White clip level	V <sub>WC1</sub>	ON	b	a	OFF	OFF	Pin 1	V <sub>WC</sub> =V <sub>WC1</sub> -V <sub>WC2</sub>
	V <sub>WC2</sub>	ON	c	b	OFF	OFF	Pin 1	

## Test Circuit



## Equivalent Circuit Block Diagram



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