

Monolithic Linear IC

LA7051
SANYO

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 $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max	V8	12	V
Allowable power dissipation	P_d max	$T_a \leq 60^{\circ}\text{C}$	250	mW
Operating temperature	T_{opr}		-20 to +85	$^{\circ}\text{C}$
Storage temperature	T_{stg}		-55 to +125	$^{\circ}\text{C}$

Operating Conditions

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}	V8	7.5	V
Operating voltage range	V_{CC} op		7.0 to 8.0	V

Operating Characteristics

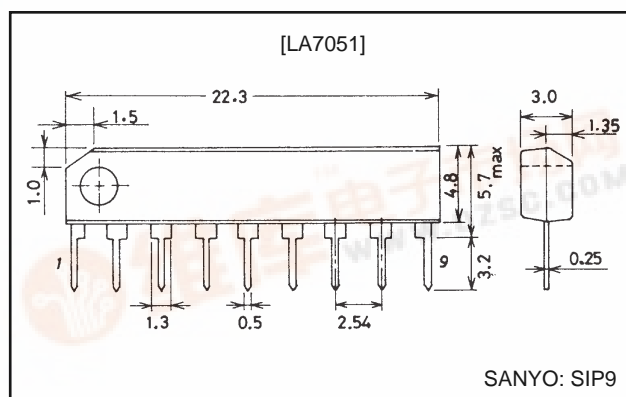
 at $T_a=25^{\circ}\text{C}$, V_{CC} (V8)=7.5V

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
V_{CC8} current drain	I_{CC8}		9.5	14.5	19.5	mA
Video clamp voltage	V_{VC}		3.6	3.8	4.0	V
Audio FM sensitivity	Δf_{m6}	f_m : 1kHz, 4.5Vp-p input, f_c : 5.5MHz	900	1250	1600	Hz/mV
	Δf_{m7}	f_m : 1kHz, 4.5Vp-p input, f_c : 5.5MHz, R^* : 15k Ω	900	1250	1600	Hz/mV
Audio distortion	THD6	At deviation width $\pm 50\text{kHz}$		1.6	2.5	%
	THD7	f_m : 1kHz, f_c : 5.5MHz		1.6	2.5	%
Video clamp output amplitude deviation		At 1Vp-p stair step signal input	-5		+5	%
Audio output amplitude	V_{O6}	f_c : 5.5MHz	0.79	1.0	1.26	Vp-p
	V_{O7}		0.79	1.0	1.26	Vp-p
White clip level	V_{WC}	At 1.5Vp-p stair step signal input	1.100		1.189	Vp-p

 Note : Resistance value of 50k Ω variable resistor in Test Circuit.

Package Dimensions

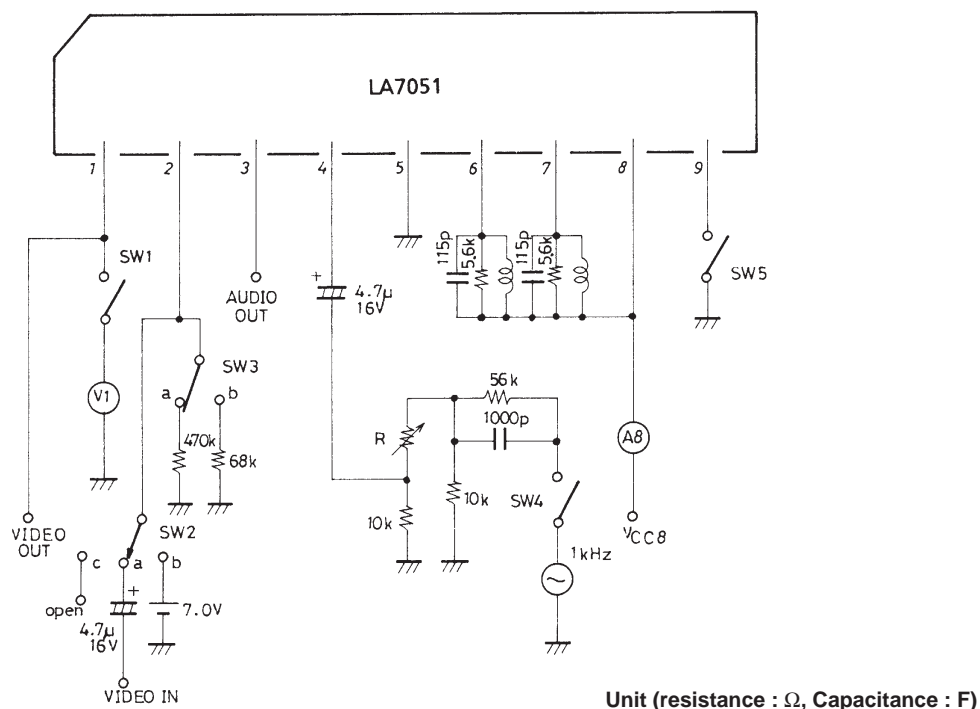
unit: mm

3017C-SIP9


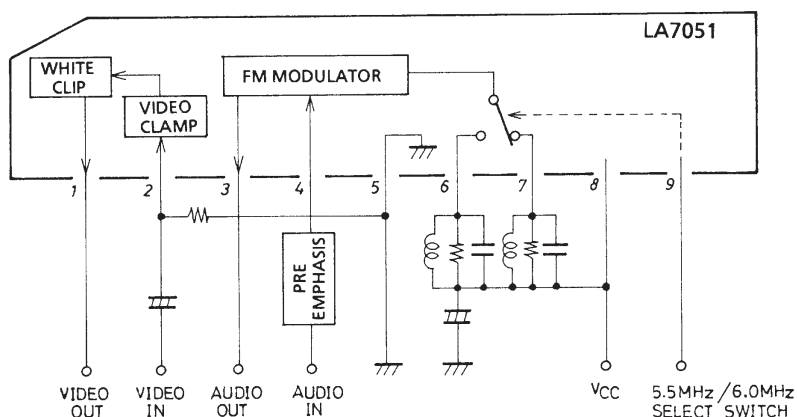
LA7051 Test Condition

Parameter	Symbol	SW Mode					Test point	Remarks
		SW1	SW2	SW3	SW4	SW5		
V _{CC8} current drain	I _{CC8}	OFF	c	a	OFF	ON	Pin 8	
Video clamp voltage	V _{VC}	ON	c	a	OFF	OFF	Pin 1	
Audio FM sensitivity	Δf _{fm6}	OFF	c	a	ON	ON	Pin 3	
	Δf _{fm7}	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 _{O6}	OFF	c	a	OFF	ON	Pin 3	
	V _{O7}	OFF	c	a	OFF	OFF	pin 3	
White clip level	V _{WC1}	ON	b	a	OFF	OFF	Pin 1	V _{WC} =V _{WC1} -V _{WC2}
	V _{WC2}	ON	c	b	OFF	OFF	Pin 1	

Test Circuit



Equivalent Circuit Block Diagram



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