

SANYO

No.2404

LA7301, 7301M

Monolithic Linear IC

VHS VTR PLAYBACK HEAD AMP, RECORDING AMP

Functions

- . 4-channel playback head amp
- . 2-channel recording amp
- . PB: 2 head select switches, 4 mode select switches
- . REC: 4 head select switches, 2 mode select switches
- . Comparator for special playback

Features

- . No more than one IC required for 4-head use
- . On-chip comparator permitting GT-4-head use
- . On-chip driver transistor permitting direct recording
- . On-chip head select switches (4 types) facilitating the pattern design of a set

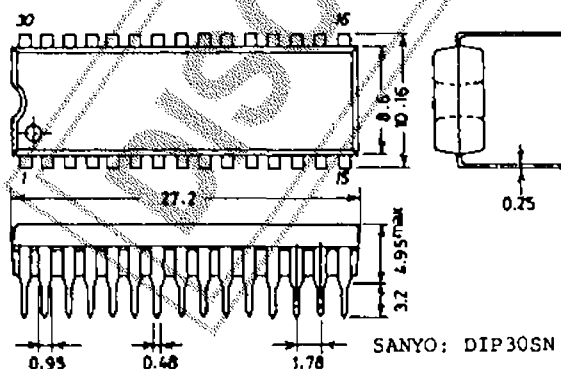
Maximum Ratings at Ta=25°C

			unit
Maximum Supply Voltage	V _{CC} max	(PB) 7.0	V
		(REC) 13.5	V
Allowable Power Dissipation	P _d max	(DIP) 920	mW
		(MFP) 840	mW
Operating Temperature	T _{opg}	-10 to +65	°C
Storage Temperature	T _{stg}	-40 to +125	°C

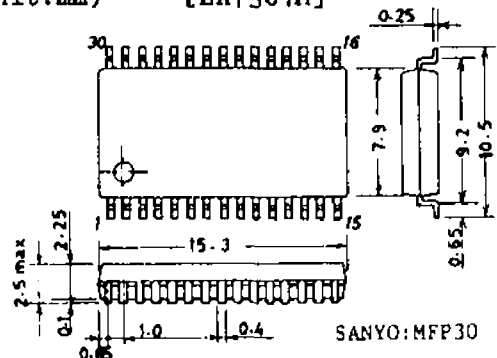
Operating Conditions at Ta=25°C

			unit
Supply Voltage	V _{CC}	(PB) 5.0	V
		(REC) 12.0	V
Operating Voltage Range	V _{CC} opg	(PB) 4.75 to 5.6	V
		(REC) 8.5 to 13.0	V

Case Outline 3061-D30SNIC
(unit:mm) [LA7301]



Case Outline 3073A-M30SIC
(unit:mm) [LA7301M]



These specifications are subject to change without notice.

SANYO ELECTRIC CO., LTD. SEMICONDUCTOR DIVISION
15-13, 6-CHOME, SOTOKANDA, CHIYODA-KU, TOKYO 101 JAPAN

4027TA, TS No.2404-1/4

Electrical Characteristics at Ta=25°C

Characteristic		Symbol	Test Conditions					Limits						
			Input	Output		SW1	SW2	SW3	SW4	SW5	min	typ	max	unit
(PB mode)	CH		T1		PB+5V	RF	HA	6H/2H	REC	Special PB "H"				
Current Dissipation		I_{CCP}			Pin1 flow-in current	1	1	1		1	22.5	30	37.5	mA
Voltage Gain	CH1	$G_{VP(1)}$	T27	T6	$v_i=38mV_{pp}$	1	1	1		2	56.5	59.5	62.5	dB
	2	$G_{VP(2)}$	T25	T6	$f=1MHz$	2	1	1		2				
	3	$G_{VP(3)}$	T21	T6		1	2	2		2	54.0	57.0	60.0	dB
	4	$G_{VP(4)}$	T20	T6		2	2	2		2				
Voltage Gain Difference 1		$\Delta G_{VP(1)}$			$G_{VP(1)}-G_{VP(2)}$						-1.0	0	1.0	dB
Voltage Gain Difference 2		$\Delta G_{VP(2)}$			$G_{VP(3)}-G_{VP(4)}$						-1.0	0	1.0	dB
Gain Difference between Modes		$\Delta G_{VP6H-2H}$			$G_{VP(1)}-G_{VP(3)}$						1.8	2.5	3.2	dB
Equivalent Input Noise Voltage	1	$V_{NIN(1)}$		T6	V_{OUT}	1	1	1		2				
	2	$V_{NIN(2)}$		T6	$G_{VP(1),(2),(3),(4)}$	2	1	1		2		1.1	1.5	μV_{rms}
	3	$V_{NIN(3)}$		T6	after 1.1MHz L.P.F	1	2	2		2				
	4	$V_{NIN(4)}$		T6		2	2	2		2				
Frequency Characteristic	1	$\Delta V_{fp(1)}$	T27	T6	$v_i=38mV_{pp}$	1	1	1		2				
	2	$\Delta V_{fp(2)}$	T25	T6	$f=100kHz, 7MHz$	2	1	1		2				
	3	$\Delta V_{fp(3)}$	T21	T6	7M output ratio	1	2	2		2	-2.5	0		dB
	4	$\Delta V_{fp(4)}$	T20	T6	100k output ratio	2	2	2		2				
Second Harmonic Distortion	1	$V_{HDP(1)}$	T27	T6	$v_i=38mV_{pp}$	1	1	1		2				
	2	$V_{HDP(2)}$	T25	T6	$f=4MHz$	2	1	1		2		-40	-35	dB
	3	$V_{HDP(3)}$	T21	T6	8M output ratio	1	2	2		2				
	4	$V_{HDP(4)}$	T20	T6	4M output ratio	2	2	2		2				
Maximum Output Level	1	$V_{OMP(1)}$	T27	T6	$f=1MHz$	1	1	1		2				
	2	$V_{OMP(2)}$	T25	T6	Output level when	2	1	1		2	0.8	1.0		V _{pp}
	3	$V_{OMP(3)}$	T21	T6	3rd harmonic distortion is 30dB.	1	2	2		2				
	4	$V_{OMP(4)}$	T20	T6		2	2	2		2				
Crosstalk 1 6H	1	$V_{CR1(1)}$	T25	T6	$v_i=38mV_{pp}$	1	1	1		2				
	2	$V_{CR1(2)}$	T27	T6	$f=1MHz$	2	1	1		2				
					$V_{OUT}/G_{VP(1),(2)}$ output ratio						-40	-35		dB
Crosstalk 2 2H	3	$V_{CR2(3)}$	T20	T6	$v_i=38mV_{pp}$	1	2	2		2				
	4	$V_{CR2(4)}$	T21	T6	$f=1MHz$	2	2	2		2				
					$V_{OUT}/G_{VP(3),(4)}$ output ratio						-40	-35		dB
Output DC Offset 1 to 6		ΔV_{ODC}		Pin6	CH1-2 Output DC	1-2	1			1				
					CH3-4 difference	1-2	2			1				
					CH1-3	1	1-2			1	-100	0	100	mV
					CH2-4	2	1-2			1				
					CH1-4	1-2	1-2			1				
					CH2-3	2-1	1-2			1				
Comparator Control Characteristic	1	V_{CH1}		T5	Vary T5 potential and measure T5 DC when T2 output changes as L-R.	1	1			1	2.6	2.8	3.0	V
	2	V_{CH2}	T27	T5	Same as above after setting as $f=4MHz$ T6 output 200mVpp	1	1			1	3.4	3.6	3.8	V

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Characteristic	Symbol	Test Conditions		Limits					unit
		Input	Output	SW1 RF	SW2 HA	SW3 6H/ 2H	SW4 REC MUTE	SW5 Special PB "H"	
(REC mode)		T14							
Current Dissipation	I_{CCR}	T14				1	2		mA
Voltage Gain	$G_{VR}(6C)$	T8	T17			1	2		
6H	(6Y)	T9	T17			1	2		
2H	(2C)	T8	T15			2	2		
	(2Y)	T9	T15			2	2		
Voltage Gain Difference 1	$\Delta G_{VR}(6H)$	-	-						dB
Voltage Gain Difference 2	$\Delta G_{VR}(2H)$	-	-						dB
Frequency Characteristic	$\Delta V_{FR}(6C)$	T8	T17			1	2		
	(6Y)	T9	T17			1	2		
	(2C)	T8	T15			2	2		
	(2Y)	T9	T15			2	2		
Second Harmonic Distortion	$V_{HDR}(6C)$	T8	T17			1	2		
	(6Y)	T9	T17			1	2		
	(2C)	T8	T15			2	2		
	(2Y)	T9	T15			2	2		
Maximum Output Level	$V_{OHR}(6C)$	T8	T17			1	2		Vpp
	(6Y)	T9	T17			1	2		
	(2C)	T8	T15			2	2		
	(2Y)	T9	T15			2	2		
Mute Attenuation	$V_{MR}(6C)$	T8	T17			1	1		
	(6Y)	T9	T17			1	1		
	(2C)	T8	T15			2	1		
	(2Y)	T9	T15			2	1		
Cross Modulation Relative Level	$V_{CY}(6H)$	T8	T17			1	2		dB
	(2H)	T8	T15			2	2		dB

The application circuit diagrams and circuit constants herein are included as an example and provide no guarantee for designing equipment to be mass-produced.

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