Ordering number : 2 4 0 3

SANYO Semiconductors

DATA SHEET

Monolithic Linear IC

LA7300M — VHS VTR Playback Head Amp, Recording Amp

Functions

- 3-channel playback head amp
- Single-channel recording amp
- PB: One head select switch, two mode select switches
- REC: Two head select switches

Features

- No more than one IC required for 3-head/2-head use
- On-chip driver transistor permitting direct recording
- On-chip head select switches (3 types) facilitating the pattern design of a set

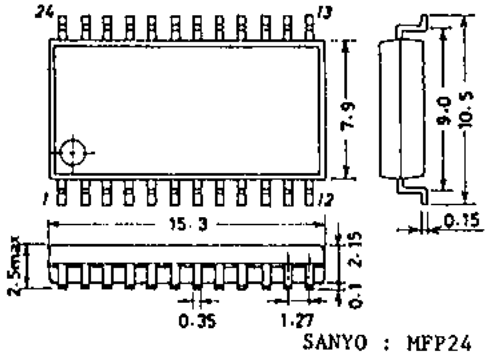
Maximum Ratings at Ta=25°C

			unit
Maximum Supply Voltage	V_{CC} max	(PB) 7.0	V
		(REC) 13.5	V
Alowable Power Dissipation	Pd max	480	mW
Operating Temperature	Topg	-10 to +65	°C
Storage Temperature	Tstg	-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 3045B-M24IC
(unit:mm)



SANYO : MFP24

These specifications are subject to change without notice.

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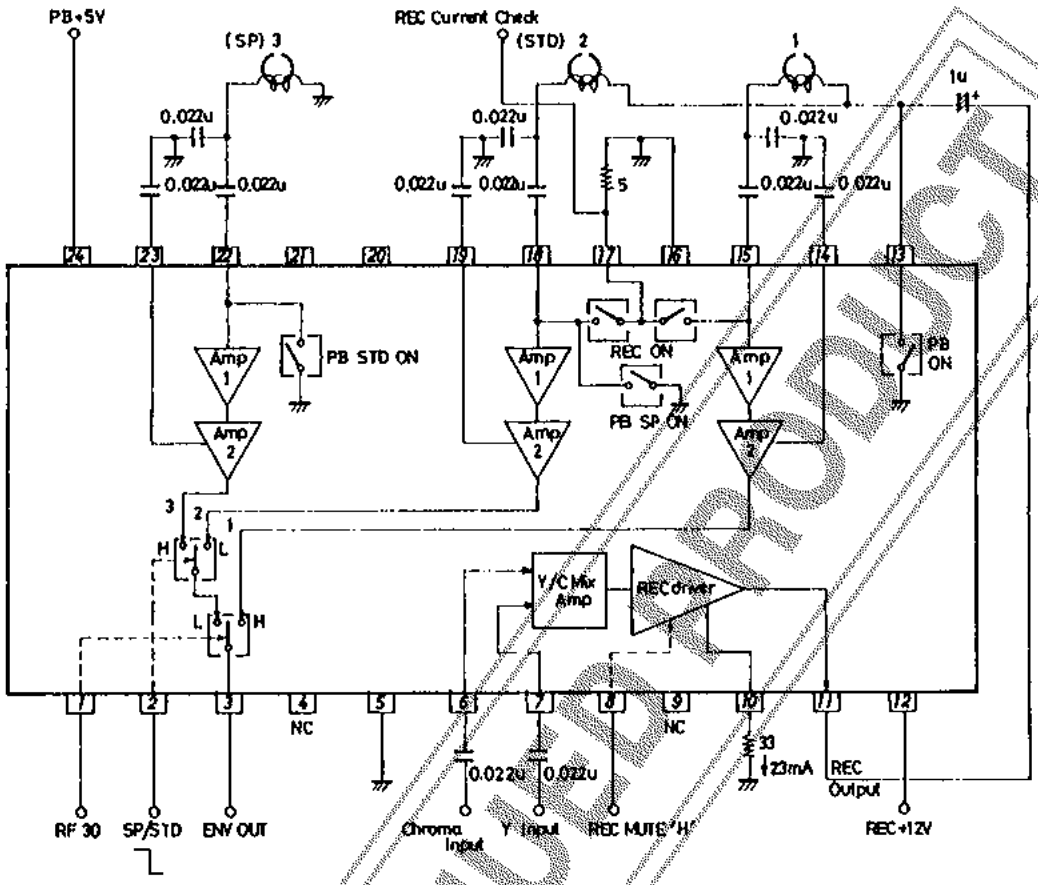
Electrical Characteristics at Ta=25°C

Characteristic		Symbol	Input	Output	Test Conditions	SW1	SW2	SW3	Limits min	Limits typ	Limits max	unit
(PB mode)			T24		PB+5V	RF	SP/STD	REC MUTE				
Current Dissipation		I_{CCP}	T24		Pin24 flow-in current	1	1		12.0	16.0	20.0	mA
Voltage Gain	CH1	$G_{VP}(1)$	T15	T3	Vi=38mVpp	1						
	2	(2)	T18	T3	f=1MHz	2	2		56.5	59.5	62.5	dB
	3	(3)	T22	T3		2	1					
Voltage Gain Difference 1	STD	$\Delta G_{VP}(1)$			$G_{VP}(1)-G_{VP}(2)$				-1.0	0	1.0	dB
Voltage Gain Difference 2	SP	$\Delta G_{VP}(2)$			$G_{VP}(1)-G_{VP}(3)$				-1.0	0	1.0	dB
Equivalent Input Noise Voltage	CH1	$V_{NIN}(1)$		T3	V_{out}	1						
	2	(2)		T3	$G_{VP}(1),(2),(3)$	2	2			1.1	1.5	uVrms
	3	(3)		T3	after 1.1MHz L.P.F	2	1					
Frequency Characteristic	CH1	$\Delta V_{fP}(1)$	T15	T3	Vi=38mVpp	1						
	2	(2)	T18	T3	f=100kHz,7MHz	2	2		-2.5	0		dB
	3	(3)	T22	T3	7M/100K output ratio	2	1					
Second Harmonic Distortion	CH1	$V_{HDP}(1)$	T15	T3	Vi=38mVpp	1						
	2	(2)	T18	T3	f=4MHz	2	2			-40	-35	dB
	3	(3)	T22	T3	8M/4M output ratio	2	1					
Maximum Output Level	CH1	$V_{OMP}(1)$	T15	T3	f=1MHz	1						
	2	(2)	T18	T3	Output level when	2	2		0.8	1.0		Vpp
	3	(3)	T22	T3	3rd harmonic distortion is -30dB	2	1					
Crosstalk 1 STD	CH1	$V_{CR1}(1)$	T18	T3	Vi=38mVpp, f=1MHz	1						
	2	(2)	T15	T3	$V_{out}/G_{VP}(1),(2)$ output ratio	2	2			-40	-35	dB
Crosstalk 2 SP	CH1	$V_{CR2}(1)$	T22	T3	Vi=38mVpp, f=1MHz	1						
	3	(3)	T15	T3	$V_{out}/G_{VP}(1),(3)$ output ratio	2	1			-40	-35	dB
Output DC Offset 1		$\Delta V_{ODC}1$	-	Pin3	Output DC difference (STD)	1→2	2		-100	0	100	mV
Output DC Offset 2		$\Delta V_{ODC}2$	-	Pin3	Output DC difference (SP)	1→2	1		100	0	100	mV
(REC mode)			T12		REC+12V	RF	SP/STD	REC MUTE				
Current Dissipation		I_{CCR}	T12		Pin12 flow-in current			2	25.0	37.0	49.0	mA
Voltage Gain	C	$G_{VR}(C)$	T6	T11	Vi=0.3Vpp			2	16.0	19.0	22.0	dB
	Y	(Y)	T7	T11	f=1MHz			2				
Voltage Gain Difference		ΔG_{VR}	-	-	$G_{VR}(C)-(Y)$				-1.0	0	1.0	dB
Frequency Characteristic	C	$\Delta V_{fR}(C)$	T6	T11	Vi=0.3Vpp, f=1MHz 7MHz			2				
	Y	(Y)	T7	T11	7M/1M output ratio			2	-1.0	0		dB
Second Harmonic Distortion	C	$V_{HDR}(C)$	T6	T11	Vi=0.3Vpp, f=4MHz			2				
	Y	(Y)	T7	T11	8M/4M output ratio			2		-50	-40	dB
Maximum Output Level	C	$V_{OMR}(C)$	T6	T11	f=1MHz Output level			2				
	Y	(Y)	T7	T11	when 3rd harmonic distortion is -30dB			2	3.5	4.0		Vpp
Mute Attenuation	C	$V_{MR}(C)$	T6	T11	Vi=0.3Vpp, f=1MHz			1				
	Y	(Y)	T7	T11	$V_{out}/G_{VR(C),(Y)}$ output ratio			1		-60	-50	dB
Cross Modulation Relative Level		V_{CY}	T6 T7	T11	T6 Vi=40mVpp, f=630kHz T7 Vi=0.3Vpp, f=4MHz 4±0.63M / 4MHz output ratio			2	-50		-40	dB

Block Diagram



Test Circuit