

Playback Preamplifier and Record Amplifier IC for S-VHS Format VCRs

The HA118162NT is a playback preamplifier and record amplifier IC for use in VHS and S-VHS format four-head (double azimuth, orthogonal, etc.) VCRs. It requires two power supply voltages, 5 V and 9 V, with the latter for use in recording. Hitachi provides a separate product (the HA118041NT) for use in two-head VCRs.

Functions

- Four channel S-VHS playback preamplifier
- Four channel S-VHS record amplifier
- Playback FM AGC
- Recording current control FM AGC
- Playback mode control circuit (normal, still, and search)
- Comparator circuit and automatic switching circuit for search mode
- Color signal rotation switching signal output circuit
- Record muting circuit
- Switching circuits for playback/record and SP/EP

Features

- A low playback preamplifier input capacitance of 34 pF
- Playback signal to noise ratio improved by 1 dB in the low region (1 MHz) and 3 dB in the high region (8 MHz) as compared with previous Hitachi products.
- Recording current differences due to record head manufacturing variations are reduced by the record current control FM AGC.
- The record amplifier is a fixed current amplifier, and provides a stable output even under external load fluctuations.
- The number of required external components is reduced and PC board design is eased, since switching transistors for record/playback and SP/EP switching are built in.
- Supports automatic head switching in search playback using double azimuth four-head mode. The switching timing is synchronized with the H.SYNC signal.

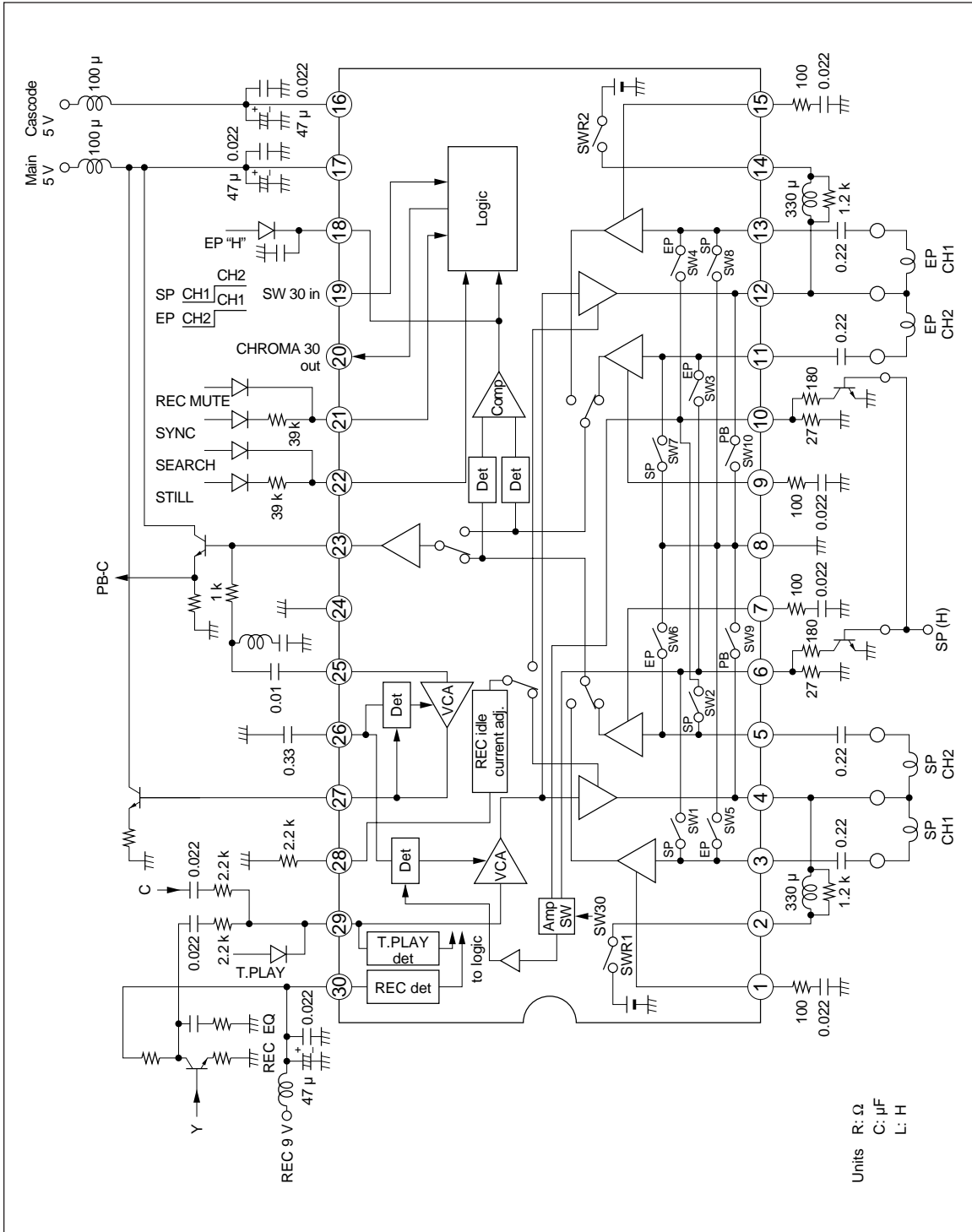
Pin Functions

Pin No.	Function	Setting Mode	Standard DC Potential	Signal Type	Signal Level	I/O Format and Impedance	Notes
1	Q.ADJ Pre SP ch1	PB (except for normal EP)	2.20			1.7 k Ω	
2	REC SP bias	REC SP	4.90	DC		E.F	
3	Pre in SP ch1	PB (except for normal EP)		0.68 Y + C	PB 0.2 mVp-p		
	SW1	REC SP	0.04 Y + C	REC	270 mVp-p		
	SW5	PB normal EP	0.00			6 Ω	
4	REC SP current out	REC SP	4.90	REC Y + C	5Vp-p	Open collector	
	SW9	REC SP	0.00			5 Ω	
5	Pre in SP ch2	PB (except for normal EP)	0.68	PB Y + C	0.2 mVp-p		
	SW2	REC SP	0.04 Y + C	REC	270 mVp-p		
	SW6	PB normal EP	0.00			6 Ω	
6	REC AGC mode, ch1 current saturation detection	REC	0.04	REC Y + C	270 mVp-p		In record with switches SW1 and SW4 closed. Rcs = 8 Ω
7	Q.ADJ Pre SP ch2	PB (except for normal EP)	2.20			1.7 k Ω	
8	GND (cascode amp)	Always	0.00	DC			
9	Q.ADJ Pre EP ch2	PB (except for normal EP)	2.20			1.7 k Ω	
10	REC AGC mode, ch2 current saturation detection	REC	0.04	REC Y + C	270 mVp-p		In record with switches SW1 and SW4 closed. Rcs = 8 Ω
11	Pre in EP ch2	PB	0.68	PB	0.2 mVp-p		

Pin Functions (cont)

Pin No.	Function	Setting Mode	Standard DC Potential	Signal Type	Signal Level	I/O Format and Impedance	Notes
11	SW7	PB normal EP	0.00			6 Ω	
12	REC EP current out	REC EP	4.90	REC Y + C	5 Vp-p	Open collector	
	SW10	REC EP	0.00			5 Ω	
13	Pre in EP ch1	PB (except for normal SP)	0.68	PB Y + C	0.2 mVp-p		
	SW4	REC EP	0.04	REC Y + C	270 mVp-p		
	SW8	PB normal SP	0.00			6 Ω	
14	REC EP bias	REC EP	4.90	DC		E.F	
15	Q.ADJ Pre EP ch1	PB (except for normal SP)	2.20			1.7 kΩ	
16	V _{CC} (cascode amp)	Always	5.00	DC			
17	V _{CC} (main)	Always	5.00	DC			
18	SP/ EP sig in	PB SEARCH	0.00	SP/ EP	L: 0 to 0.7 H: 2.5 to 5.0	40 k	
	COMP out	PB SEARCH		COMP OUT	L: 0 to 1.0 H: 4.0 to 5.0	Push-Pull	
19	SW30 in	Always		SW30	L: 0 to 0.7 H: 2.5 to 5.0	Base input	
20	CHROMA30 OUT	Always		CHROMA30	L: 0 to 1.0 H: 4.0 to 5.0	Push-Pull	
21	SYNC in	Always	0.01	SYNC	1.3 to 2.5		
	REC MUTE sig in	REC	0.01	REC MUTE sig	3.1 to 5.0	30 k	
22	Mode control	PB	0.01	MODE CTL	L: 0 to 0.7 M: 1.3 to 2.5 H: 3.1 to 5.0	30 k	
23	Pre amp out	PB	3.00	PB Y + C	200 mVp-p	E.F	
24	GND (main)	Always	0.00	DC			
25	PB FM AGC in	PB	3.60	PB Y	200 mVp-p	10 k	
26	AGC detection	PB	1.50	VCA control voltage			

Block Diagram



Block Diagram

