

# AN3371SB

## 2-head recording/playback amplifier IC

### ■ Overview

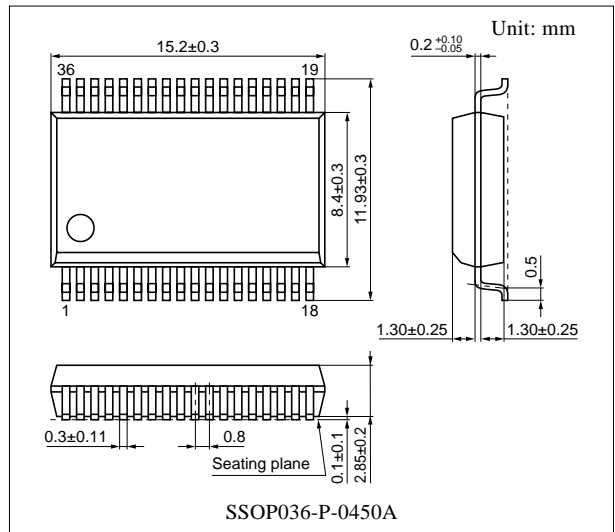
The AN3371SB is a 2-head recording/playback amplifier IC for VCR.

### ■ Features

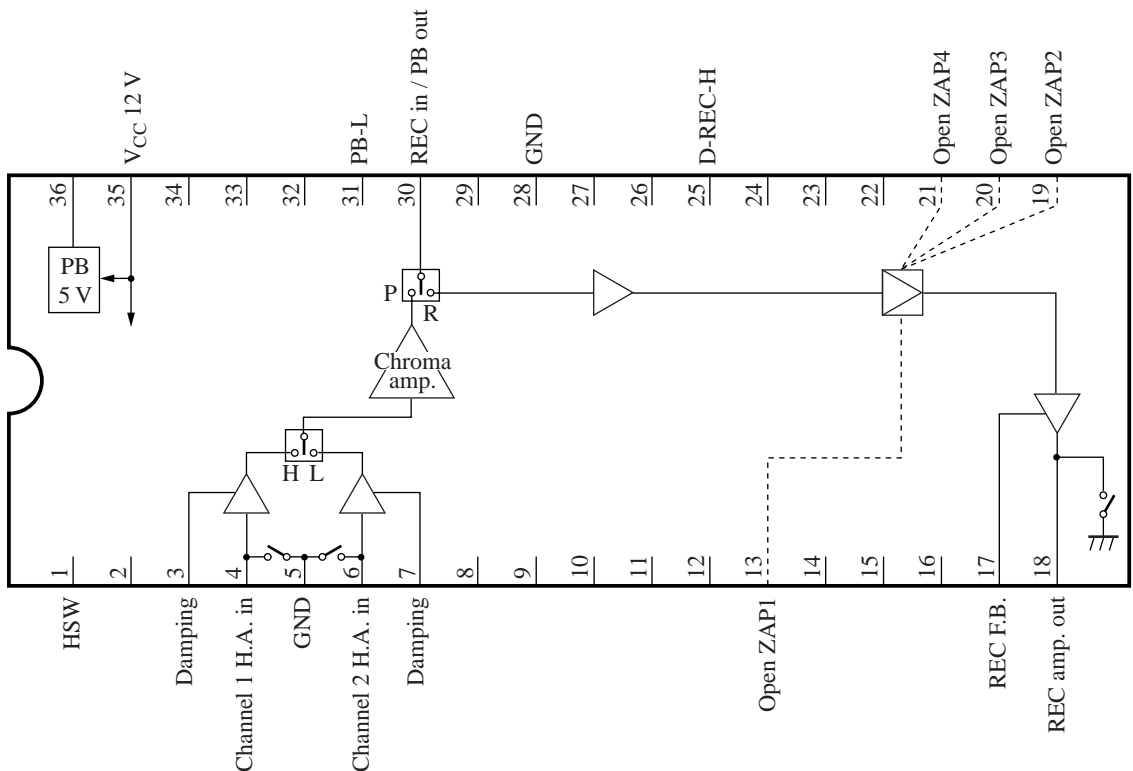
- Pin and package compatible with the 4-head recording/playback amplifier AN3361SB.
- Recording current is adjustment-free.
- REC in and PB out pins are in common (RIPO)
- 12 V single supply voltage (PB 5 V is generated inside.)

### ■ Applications

- VCR



### ■ Block Diagram



### ■ Pin Descriptions

Pin No.	Description	Pin No.	Description
1	HSW input pin	19	ZAP2 (ZAP write pin)
2	N.C.	20	ZAP3 (ZAP write pin)
3	Channel-1 head amp. damping	21	ZAP4 (ZAP write pin)
4	Channel-1 head amp. input	22	N.C.
5	Small signal GND	23	N.C.
6	Channel-2 head amp. input	24	N.C.
7	Channel-2 head amp. damping	25	D-REC-H input pin
8	N.C.	26	N.C.
9	N.C.	27	N.C.
10	N.C.	28	Main GND
11	N.C.	29	N.C.
12	N.C.	30	REC input / PB output pin
13	ZAP1 (ZAP write pin)	31	PB-L input pin
14	N.C.	32	N.C.
15	N.C.	33	N.C.
16	N.C.	34	N.C.
17	REC feedback	35	V <sub>CC</sub> (12 V)
18	REC amp. output	36	Capacitor for PB 5 V

### ■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	13	V
Supply current	I <sub>CC</sub>	—	mA
Power dissipation *2	P <sub>D</sub>	440	mW
Operating ambient temperature *1	T <sub>opr</sub>	-20 to +70	°C
Storage temperature *1	T <sub>stg</sub>	-55 to +125	°C

Note) \*1: Except for the operating ambient temperature and storage temperature, all ratings are for T<sub>a</sub> = 25°C.

\*2: The power dissipation shown is for the IC package in free air at T<sub>a</sub> = 70°C.

### ■ Recommended Operating Range

Parameter	Symbol	Range	Unit
Supply voltage	V <sub>CC</sub>	11.5 to 12.5	V

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
REC circuit current	$I_{35R}$	$V_{CC} = 12\text{ V}$	27	—	49	mA
PB circuit current	$I_{35P}$	$V_{CC} = 12\text{ V}$	16	—	30	mA
HSW DC unbalance	HSW	$V_{CC} = 12\text{ V}$	—	—	100	mV[p-p]
Channel-1 gain	$G_{4-30}$	$V_{CC} = 12\text{ V}$	52	—	60	dB
Channel-2 gain	$G_{6-30}$	$V_{CC} = 12\text{ V}$	52	—	60	dB
Input referred noise 1	$N_{4-30}/G_{4-30}$	$V_{CC} = 12\text{ V}$	—	—	1	$\mu\text{V}[\text{rms}]$
Input referred noise 2	$N_{6-30}/G_{6-30}$	$V_{CC} = 12\text{ V}$	—	—	1	$\mu\text{V}[\text{rms}]$
High-level HSW hold voltage	$V_{H1}$	$V_{CC} = 12\text{ V}$	3.6	—	5.0	V
Low-level HSW hold voltage	$V_{L1}$	$V_{CC} = 12\text{ V}$	0.0	—	1.4	V
High-level D-REC-H hold voltage	$V_{H25}$	$V_{CC} = 12\text{ V}$	3.6	—	12.0	V
Low-level D-REC-H hold voltage	$V_{L25}$	$V_{CC} = 12\text{ V}$	0.0	—	1.4	V
Channel-1 gain	$G_{A4-30}$	$V_{CC} = 12\text{ V}$	49	—	58	dB
Channel-2 gain	$G_{A6-30}$	$V_{CC} = 12\text{ V}$	49	—	58	dB
High-level PB-L hold voltage	$V_{H31}$	$V_{CC} = 12\text{ V}$	3.6	—	5.0	V
Low-level PB-L hold voltage	$V_{L31}$	$V_{CC} = 12\text{ V}$	0.0	—	1.4	V
REC recording current output	$I_{18}$	$V_{CC} = 12\text{ V}$	28.2	30.0	31.8	mA[p-p]

• Design reference data

Note) The characteristics listed below are theoretical values based on the IC design and are not guaranteed.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
REC circuit current	$I_{35R}$	$V_{CC} = 12\text{ V}$	—	38	—	mA
PB circuit current	$I_{35P}$	$V_{CC} = 12\text{ V}$	—	23	—	mA
Record current secondary distortion	$D_{2f}$	$V_{CC} = 12\text{ V}$	—	-43	—	dB
Cross modulation relative level	DM	$V_{CC} = 12\text{ V}$	—	-48	—	dB
Channel-1 gain	$G_{4-30}$	$V_{CC} = 12\text{ V}$	—	56	—	dB
Channel-2 gain	$G_{6-30}$	$V_{CC} = 12\text{ V}$	—	56	—	dB
REC recording current output	$I_{18}$	$V_{CC} = 12\text{ V}$	28.8	30	31.2	mA[p-p]

■ Terminal Equivalent Circuits

Pin No.	Equivalent circuit	Description
1		<p>HSW input pin: High: 3.6 V to 5.0 V Low: 0.0 V to 1.4 V</p>
2	—	N.C.
3		<p>Channel-1 head amp. damping: DC 1.5 V</p>
4		<p>Channel-1 head amp. input: DC 0.7 V</p>
5	—	Small signal GND
6		<p>Channel-2 head amp. input: DC 0.7 V</p>
7		<p>Channel-2 head amp. damping: DC 1.5 V</p>

■ Terminal Equivalent Circuits (continued)

Pin No.	Equivalent circuit	Description
8	—	N.C.
9	—	N.C.
10	—	N.C.
11	—	N.C.
12	—	N.C.
13		ZAP1 (ZAP write pin)
14	—	N.C.
15	—	N.C.
16	—	N.C.
17		REC feedback:  
18		REC amp. output: DC 6 V
19		ZAP2 (ZAP write pin)

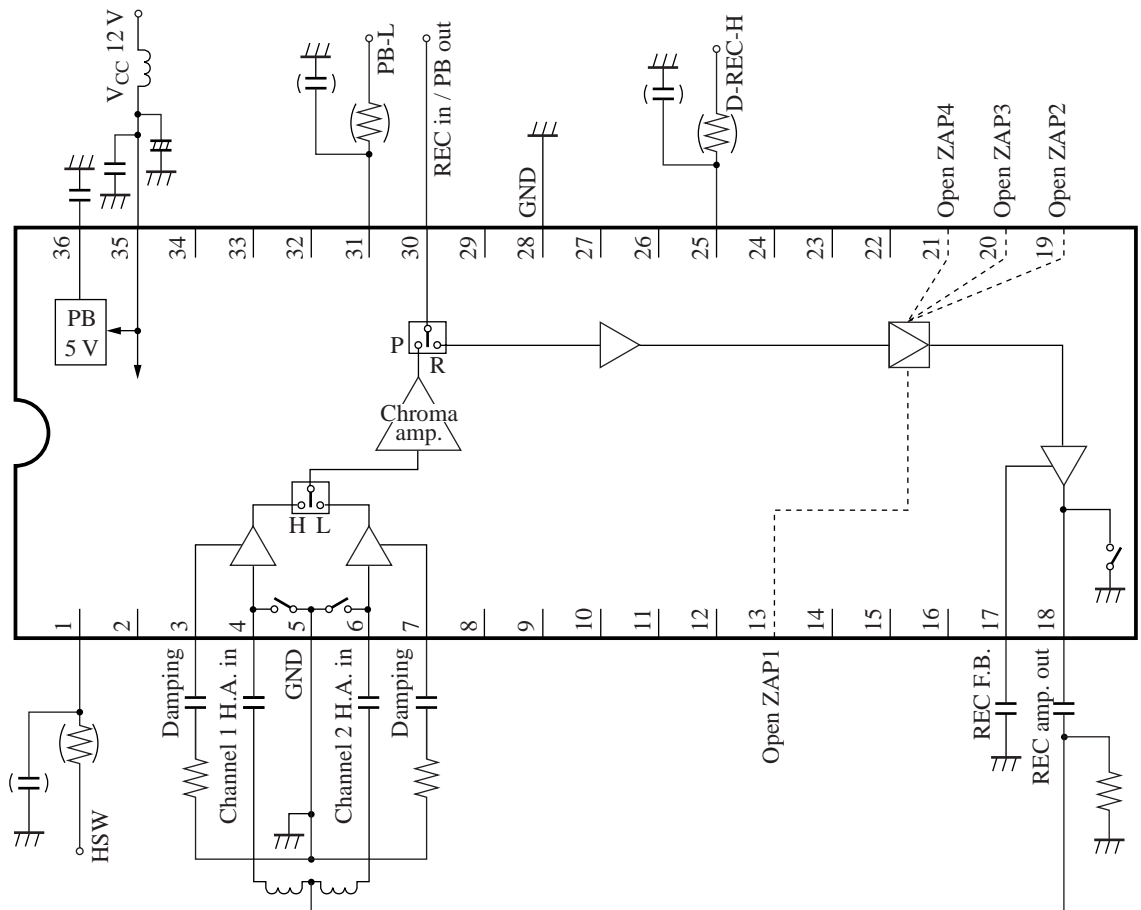
■ Terminal Equivalent Circuits (continued)

Pin No.	Equivalent circuit	Description
20		ZAP3 (ZAP write pin)
21		ZAP4 (ZAP write pin)
22	—	N.C.
23	—	N.C.
24	—	N.C.
25		D-REC-H input pin: High: 3.6 V to 12.0 V Low: 0.0 V to 1.4 V
26	—	N.C.
27	—	N.C.
28	—	Main GND
29	—	N.C.
30		REC input/PB output pin

■ Terminal Equivalent Circuits (continued)

Pin No.	Equivalent circuit	Description
31		PB-L input pin: High: 3.6 V to 5.0 V Low: 0.0 V to 1.4 V
32	—	N.C.
33	—	N.C.
34	—	N.C.
35	—	V <sub>CC</sub> (12 V)
36	—	Capacitor for PB 5 V

■ Application Circuit Example





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