

# AN7352S

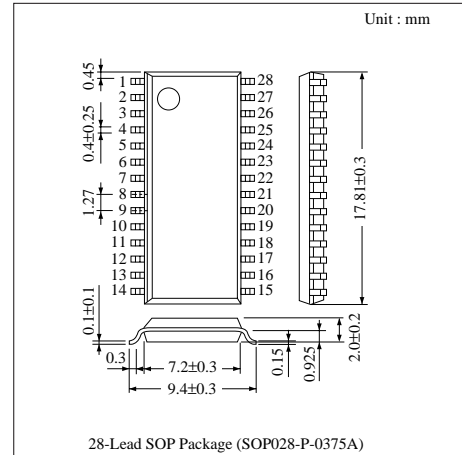
## Playback Pre-amplifier for Stereo Cassette Deck

### Overview

The AN7352S is a bipolar IC developed as a playback pre-amplifier of analogue cassette deck. Particularly in order to support the automatic adjustment, it incorporates various volume filter circuits and control functions. Also, it has realized great reduction of external parts required.

### Features

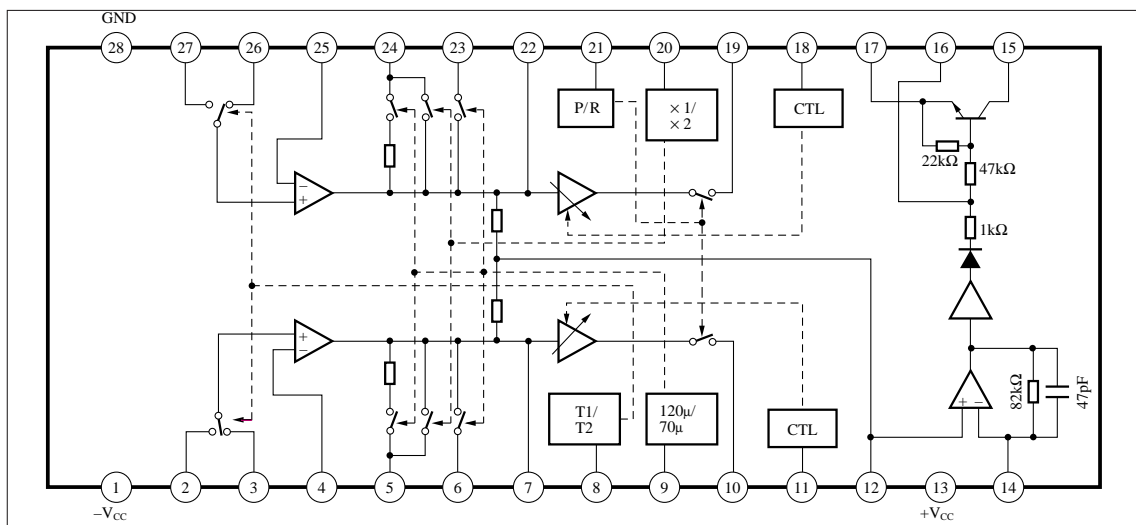
- Variable volume circuits for playback gain adjustment built-in
- Various equalizer switching circuit built-in
- Series mute circuit built-in
- MS (head locating) amp. comparator circuit built-in



### Pin Name

Pin No.	Pin Name	Pin No.	Pin Name	Pin No.	Pin Name
1	-V <sub>CC</sub>	11	Volume Control (R Ch.)	21	P/R LOGIC
2	PB T1 Input (R Ch.)	12	MS Input	22	PB Monitor Output
3	PB T2 Input (R Ch.)	13	+V <sub>CC</sub>	23	120μ/ 70μ (× 2) NF SW
4	PB NF Input (R Ch.)	14	MS NF Input	24	120μ/ 70μ (× 1) NF SW
5	120μ/ 70μ (× 2) NF SW	15	MS Output	25	PB NF Input (L Ch.)
6	120μ/ 70μ (× 1) NF SW	16	MS De-coupling	26	PB T2 Input (L Ch.)
7	PB Monitor Output	17	MS GND	27	PB T1 Input (L Ch.)
8	T1/ T2 LOGIC	18	Volume Control (L Ch.)	28	GND
9	120μ/ 70μ LOGIC	19	PB Output (L Ch.)		
10	PB Output (R Ch.)	20	× 1/ × 2 LOGIC		

### Block Diagram



### ■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	±6.7	V
Supply Current	I <sub>CC</sub> (+)	22	mA
	I <sub>CC</sub> (-)	20	mA
Power Dissipation	P <sub>D</sub>	702	mW
Operating Ambient Temperature	T <sub>opr</sub>	-25 ~ + 75	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ + 150	°C

### ■ Recommended Operating Range (Ta= 25°C)

Parameter	Symbol	Range
Operating Supply Voltage Range	V <sub>CC</sub>	± 4.5V ~ ± 6.5V

### ■ Electrical Characteristics (V<sub>CC</sub>= ±6V, Ta=25°C)

Parameter	Symbol	Condition	min.	typ.	max.	Unit
Consumption Current	I <sub>tot</sub>	V <sub>CC</sub> = ±6V, At no signals	9	11	22	mA
Reference Output Level (0dB)	V <sub>i</sub>	V <sub>in</sub> = -50dBV, f = 1kHz 30kHz LPF ON, V <sub>CNT</sub> = 2.5V	45.4	47.4	49.4	dB
Reference Output Level (+ 6dB)	G <sub>H</sub>	V <sub>CNT</sub> = 5V, G <sub>H</sub> = DATA <sub>(2)</sub> - DATA <sub>(1)</sub>	+5	+6	+7	dB
Reference Output Level (- 6dB)	G <sub>L</sub>	V <sub>CNT</sub> = 1.25V, G <sub>L</sub> = DATA <sub>(3)</sub> - DATA <sub>(1)</sub>	-7	-6	-5	dB
Level Difference Between Channels	DG <sub>LR</sub>	V <sub>CNT</sub> = 2.5V, DG <sub>LR</sub> = V <sub>IL</sub> - V <sub>IR</sub>	—	0	1	dB
Level Difference Between Tapes	DG <sub>T12</sub>	V <sub>CNT</sub> = 2.5V, DG <sub>T12</sub> = V <sub>IT1</sub> - V <sub>IT2</sub>	—	0	1	dB
Total Harmonics Distortion (0dB)	THD <sub>11</sub>	V <sub>CNT</sub> = 2.5V, V <sub>9</sub> /V <sub>20</sub> = 0V, V <sub>8</sub> /V <sub>21</sub> = 5V	—	0.1	0.3	%
Output Noise Voltage	V <sub>no</sub>	V <sub>CNT</sub> = 2.5V, DIN AUDIO, R <sub>g</sub> = 2.2kΩ	—	-69	-62	dBV
Maximum Output Level (0dB)	V <sub>OMX</sub>	V <sub>CNT</sub> = 2.5V, THD = 3%	2	3.6	—	dBV
Crosstalk Between Channels	CT	V <sub>CNT</sub> = 2.5V, R <sub>g</sub> = 220Ω	60	—	—	dB
Output Offset Voltage (0dB)	V <sub>OFF</sub>	V <sub>CNT</sub> = 2.5V, R <sub>g</sub> = 220Ω	-230	—	+130	mV
Muting Attenuation	G <sub>M0</sub>	V <sub>CNT</sub> = 0V	60	—	—	dB
Muting Attenuation (T1)	G <sub>M1</sub>	V <sub>CNT</sub> = 2.5V	60	—	—	dB
Muting Attenuation (T2)	G <sub>M2</sub>	V <sub>CNT</sub> = 2.5V	60	—	—	dB
MS Amp. Section		V <sub>CC</sub> = ±6V, V <sub>15</sub> = 0.3V				
4kHz Gain (Input Voltage)	G <sub>MS1</sub>	f = 4kHz	—	—	-51	dBV
High-Frequency Band Gain (Input Voltage)	G <sub>MS2</sub>	f = 50kHz	—	—	-44	dBV
Logic - L		V <sub>CC</sub> = ±4.5V				
Time Constant Switching Pin Voltage	V <sub>9L</sub>	120μs mode	0	—	1.5	V
Tape Switching Pin Voltage	V <sub>8L</sub>	T2 mode	0	—	1.2	V
Speed Switching Pin Voltage	V <sub>20L</sub>	Double speed (× 2) mode	0	—	1.2	V
R - P Switching Pin Voltage	V <sub>21L</sub>	R mode	0	—	1.5	V
Logic - H		V <sub>CC</sub> = ±6.5V				
Time Constant Switching Pin Voltage	V <sub>9H</sub>	70μs mode	2.6	—	5	V
Tape Switching Pin Voltage	V <sub>8H</sub>	T1 mode	3.1	—	5	V
Speed Switching Pin Voltage	V <sub>20H</sub>	Double speed (× 1) mode	3.1	—	5	V
R - P Switching Pin Voltage	V <sub>21H</sub>	P mode	2.6	—	5	V
Mute		V <sub>CC</sub> = ±6V				
Mute ON Voltage	V <sub>mute1</sub>		0	—	0.7	V
Mute OFF Voltage	V <sub>mute2</sub>		1.25	—	5	V

■ Application Circuit

