

# DATA SHEET

Part No.	<b>AN5833SA</b>
Package Code No.	SSOP 024 - P - 0300E

SEMICONDUCTOR COMPANY  
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

Contents

- Features ..... 3
- Applications ..... 3
- Package ..... 3
- Application Circuit ..... 4
- Block Diagram ..... 6
- Pin Descriptions ..... 7
- Absolute Maximum Ratings ..... 8
- Operating Supply Voltage Range ..... 8

# AN5833SA

## Silicon Monolithic Bipolar IC

### ■ Features

- Supports both I<sup>2</sup>C bus and parallel control
- Integrated SIF demodulation
- Fully adjustment - free ( when used with SIF input )  
2 adjustment points when used with baseband input
- Integrated voice AGC circuit
- Reduced peripheral component count
- Low power consumption ( typ.  $V_{CC} = 5\text{ V}$ ,  $I_{TOT} = 28\text{ mA}$  )
- Near pin to pin compatible with AN5832SA ( US TV audio multiplex demodulation IC )

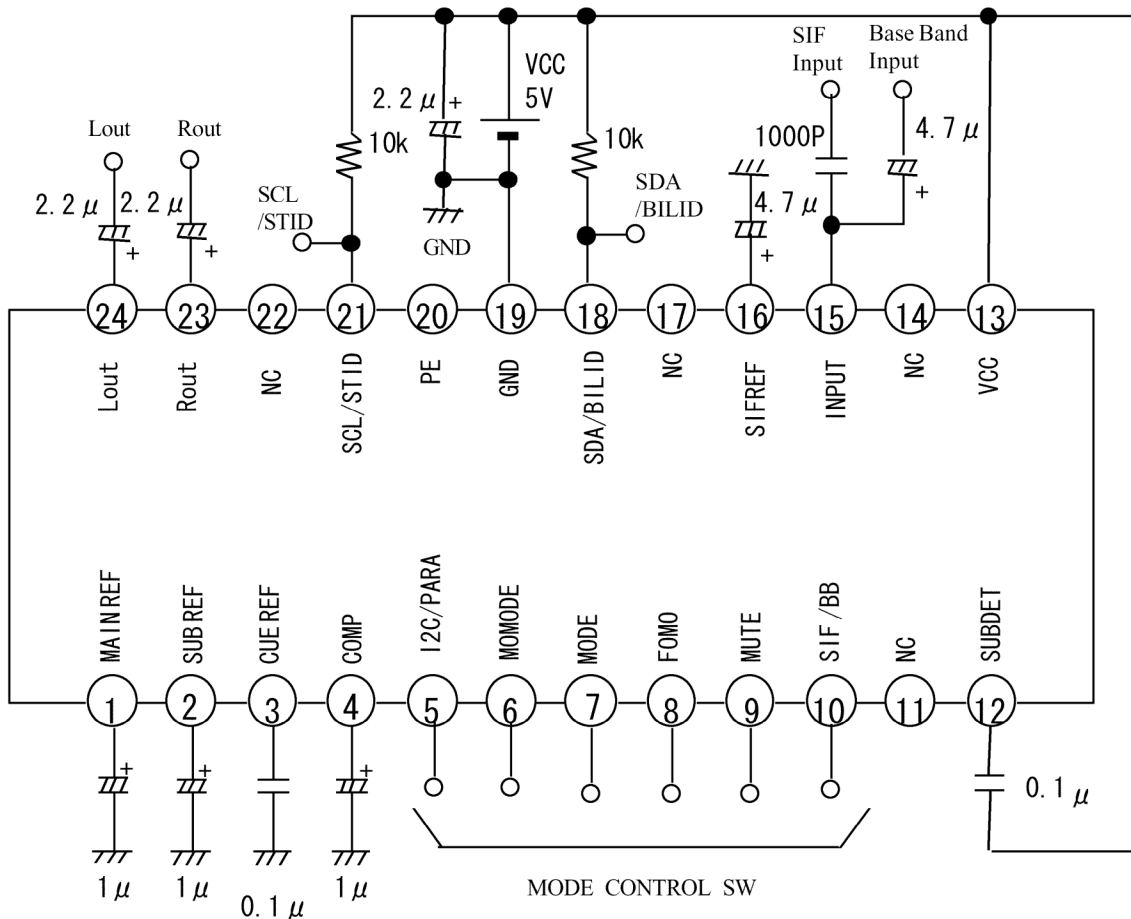
### ■ Applications

- TV sets, VCRs, DVD recorders, PCs, car navigation systems, and similar products for Japanese market

### ■ Package

- DIL-24PIN Plastic Package (SO Type)

### ■ Application Circuit

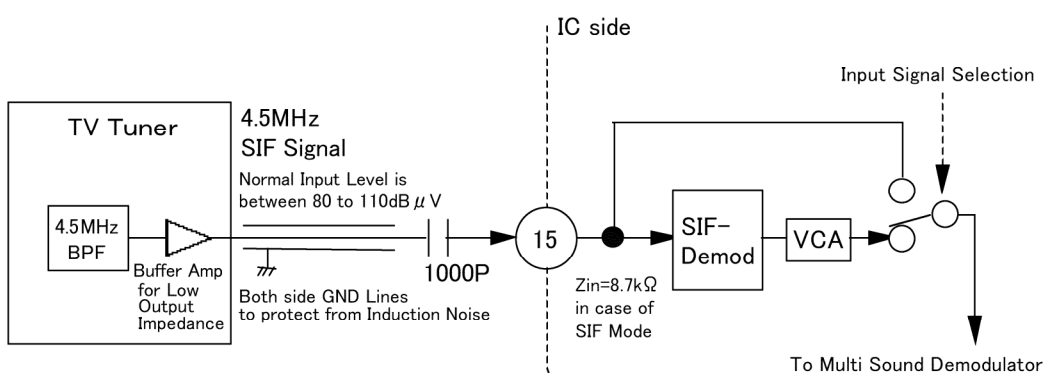


#### < Instructions of Application Circuits >

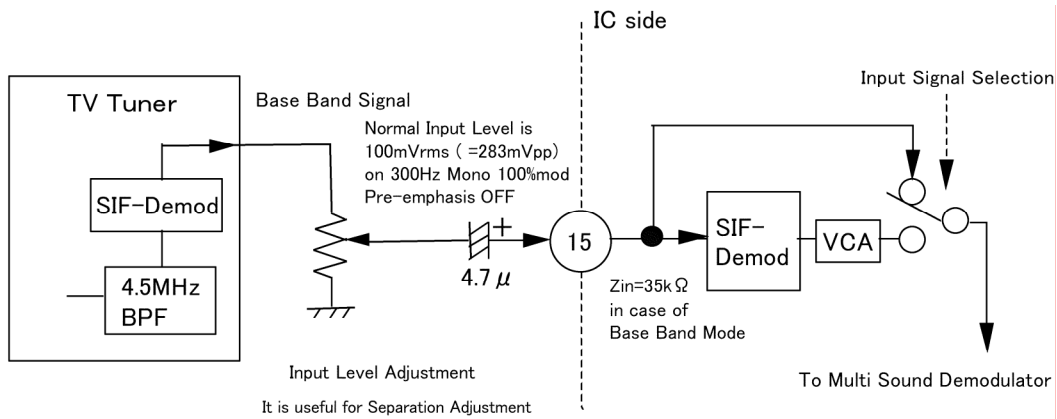
- 1) In case of using base band input, ICs were adjusted to perform good separation when input level is matched with 100 mV[rms] (= 283 mV[p-p]) on condition of mono 100% mod pre-emphasis OFF. However, if good enough separation can't be taken in the cause of un-matching frequency characteristic and so in input signal, it can adjust separation by the input volume.
- 2) In case of using SIF input, please set up the SIF input level from tuners between 80 dB $\mu$ V to 110 dB $\mu$ V in standard RF input conditions. Please select SIF - BPFs that group delay of 4.5 MHz  $\pm$ 42 kHz is flat as possible. And also its gain band width is wide enough to don't loss the CUE signal that locate at 4.5 MHz  $\pm$ 55 kHz.
- 3) About the characteristic of tuners, Please take the demodulation linearity to be over 250% to don't reduce the sub carrier when the over-modulation occur in high frequency sound by pre-emphasis is.
- 4) In measuring characteristics of separation, please use the stereo modulator that perform good characteristic on encoder and corrected well.  
In case of using SIF input, please correct FM modulation band to  $\pm$ 25 kHz exactly at mono 100% mod pre-emphasis OFF with the 0 carrier method.  
And, please use LPFs that reduce 30 kHz signal over 20 dB setting between line-outs and AB level meter

■ Application Circuit ( continued )

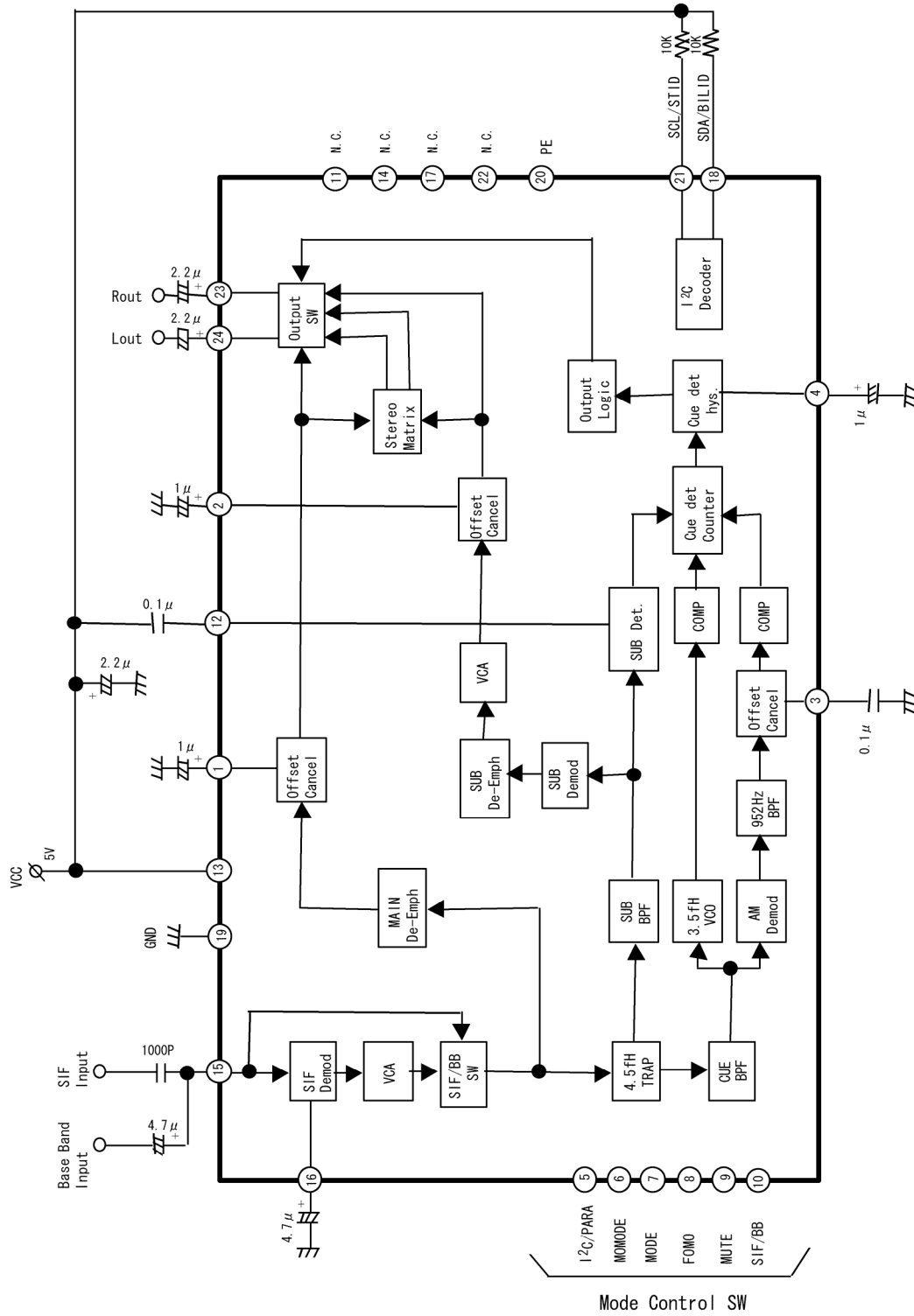
( 1 ) Example of No Adjustments Application Circuits in case of SIF Input



( 2 ) Example of No Adjustments Application Circuits in case of Base Band Input



■ Block Diagram



## ■ Pin Descriptions

Pin No.	Function
1	MAIN REF
2	SUB REF
3	CUE DET
4	COMP
5	I <sup>2</sup> C / Parallel SW
6	MOMODE SW
7	MODE SW
8	Force monaural SW
9	Mute SW
10	SIF / Base band SW
11	N. C.
12	SUB DET
13	V <sub>CC</sub>
14	N. C.
15	Input
16	SIF REF
17	N. C.
18	SDA / BILID
19	Ground
20	PE
21	SCL / STID
22	N. C.
23	Right - channel output
24	Left - channel output

■ Absolute Maximum Ratings

No.	Parameter	Symbol	Rating	Unit	Note
1	Storage temperature	$T_{stg}$	-55 to +125	°C	*1
2	Operating ambient temperature	$T_{opr}$	-20 to +85	°C	*1
3	Operating ambient atmospheric pressure	$P_{opr}$	$1.013 \times 10^5 \pm 0.61 \times 10^5$	Pa	
4	Operating constant gravity	$G_{opr}$	9 810	m/s <sup>2</sup>	
5	Operating shock	$S_{opr}$	4 900	m/s <sup>2</sup>	
6	Supply voltage	$V_{CC}$	6.0	V	
7	Supply current	$I_{CC}$	32	mA	
8	Power dissipation	$P_D$	192	mW	$T_a = 85^\circ\text{C}$

Note ) \*1 :  $T_a = 25^\circ\text{C}$  except storage temperature, and operating ambient temperature.

■ Operating Supply Voltage Range

Operating supply voltage range	$V_{CC}$	4.5 V to 5.5 V
--------------------------------	----------	----------------



## Request for your special attention and precautions in using the technical information and semiconductors described in this material

- (1) An export permit needs to be obtained from the competent authorities of the Japanese Government if any of the products or technical information described in this material and controlled under the "Foreign Exchange and Foreign Trade Law" is to be exported or taken out of Japan.
- (2) The technical information described in this material is limited to showing representative characteristics and applied circuits examples of the products. It neither warrants non-infringement of intellectual property right or any other rights owned by our company or a third party, nor grants any license.
- (3) We are not liable for the infringement of rights owned by a third party arising out of the use of the technical information as described in this material.
- (4) The products described in this material are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).  
Consult our sales staff in advance for information on the following applications:
  - Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
  - Any applications other than the standard applications intended.
- (5) The products and product specifications described in this material are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (6) When designing your equipment, comply with the guaranteed values, in particular those of maximum rating, the range of operating power supply voltage, and heat radiation characteristics. Otherwise, we will not be liable for any defect which may arise later in your equipment.  
Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (7) When using products for which damp-proof packing is required, observe the conditions (including shelf life and amount of time let standing of unsealed items) agreed upon when specification sheets are individually exchanged.
- (8) This material may be not reprinted or reproduced whether wholly or partially, without the prior written permission of Matsushita Electric Industrial Co., Ltd.