

AN5250

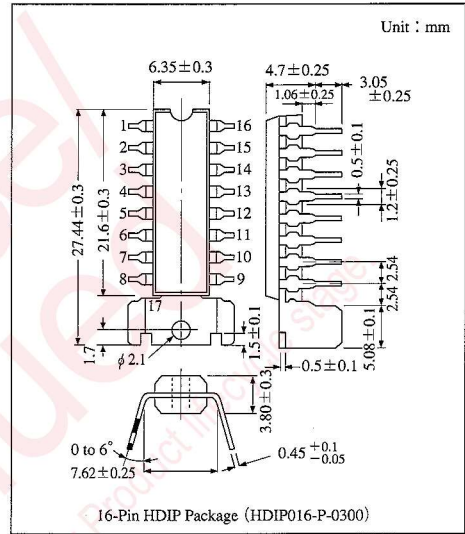
TV Sound-IF Amplifier, Detector, AF Output IC

■ Overview

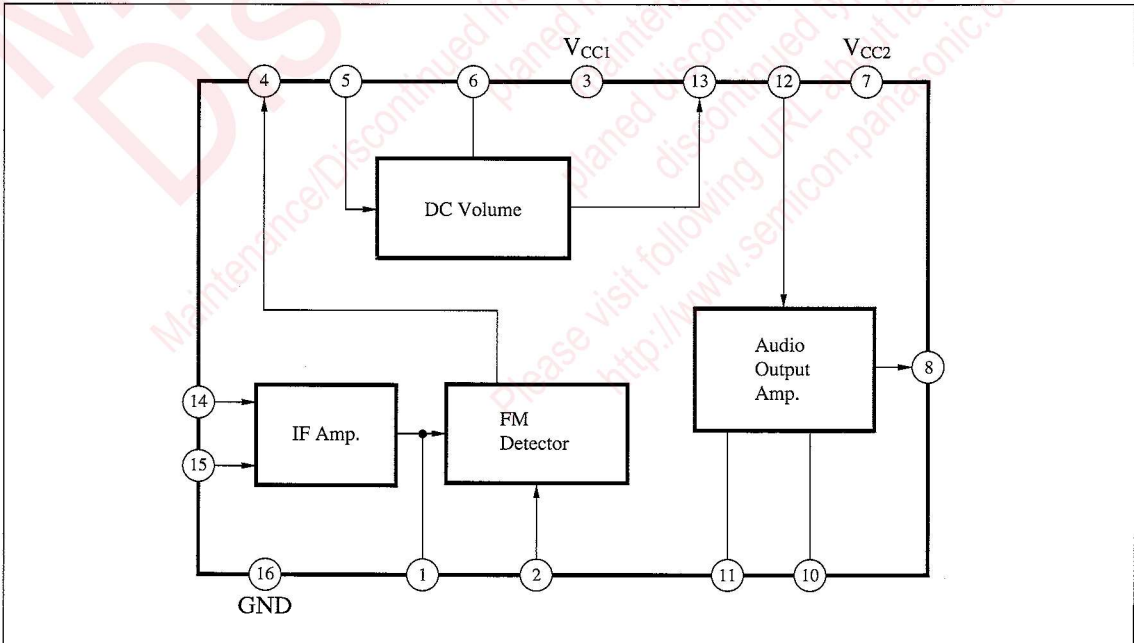
The AN5250 is an integrated circuit designed for TV sound signal processing circuit.

■ Features

- The AN5250 provides all TV sound signal processing circuit from IF amplifier through AF output.
- DC volume control system : control voltage 0 to V_{CC}
- Provided with fixed detection-output pin, this IC can also be used for TV sound multiplex application.



■ Block Diagram



Pin Descriptions

Pin No.	Pin name	Pin No.	Pin name
1	SIF output	10	Feedback
2	Detector input	11	Filter
3	V _{CC1}	12	AF input
4	Detector output	13	Variable output
5	AF input	14	SIF input
6	DC volume	15	Input bias
7	V _{CC2}	16	GND
8	AF output	17	Fin
9	GND	—	—

Absolute Maximum Ratings (Ta = 25°C)

Parameter		Symbol	Rating		Unit
Voltage	Supply voltage	V _{CC1}	V ₃₋₁₆	13.8	V
		V _{CC2}	V ₇₋₁₆	26	V
	Circuit voltage	V ₆₋₁₆	6	V ₃₋₁₆	V
Current	Circuit current	I _g	-1.2	+1.2	A _{Peak}
Power dissipation	Detector, DCVR circuit	P _{D1}	0.6		W
	Output circuit	P _{D2}	1.6		
Temperature	Operating ambient temperature	T _{opr}	-20 to +70		°C
	Storage temperature	T _{stg}	-55 to +150		°C

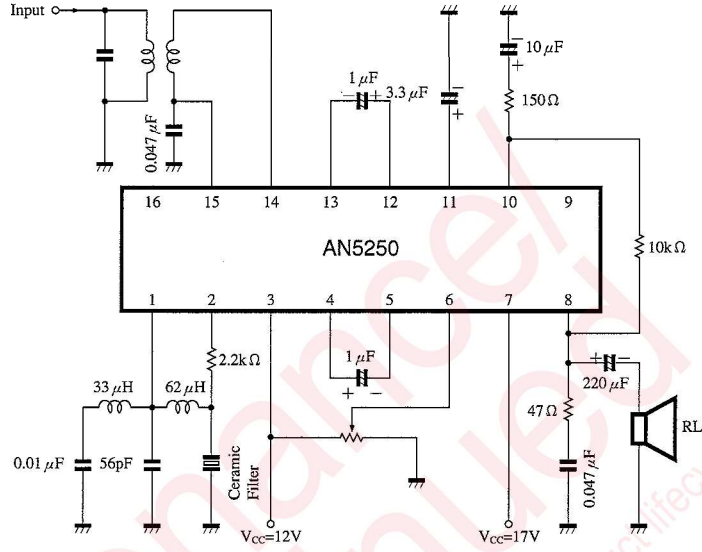
Note) “+” and “-” are flow-in and flow-out currents to/from the circuit, respectively.

Electrical Characteristics (Ta = 25°C)

Parameter	Symbol	Condition	min	typ	max	Unit
DC Characteristics						
Total circuit current	I _{tot}	V ₃₋₁₆ = 12V	23	—	42	mA
Circuit voltage	V ₁₋₁₆	V ₃₋₁₆ = 12V Pin(14) and (15) are connected.	3.2	4.0	4.8	V
	V ₄₋₁₆		5.8	6.6	7.7	V
	V ₈₋₁₆		8.8	9.5	10.2	V
	V ₁₃₋₁₆		6.6	7.6	8.5	V
IF Amplification Detector						
Input limiting sensitivity	V _{i(lim)}	f ₀ = 4.5MHz, f _m = 400Hz, Δf = ±25kHz	—	250	400	μV
AM rejection	AMR	f ₀ = 4.5MHz, f _m = 400Hz, Mod = 30% (AM), V _i = 100mV _{rms}	38	45	—	dB
Input resistance	R _i	f = 4.5MHz	6	18	100	kΩ
Input capacitance	C _i		4	8	12	pF
Output voltage (Det.)	V _O	f ₀ = 4.5MHz, f _m = 400Hz, Δf = ±25kHz, V _i = 100mV _{rms}	200	300	440	mV _{rms}
Total harmonics distortion	THD (IF)		—	0.3	1.0	%
Volume Circuit						
Attenuation (max. remaining sound)	A _{tt}	f = 1kHz, V _i = 0.5V _{rms} , V ₆ = 0V	—	2	5	mV _{rms}
Amplification	A ₁₃₋₅	f = 1kHz, V _i = 0.5V _{rms} , V ₆ = 12V	-2	0	+2	dB
Total harmonics distortion	THD (AF)	f = 1kHz, V _i = 0.5V _{rms} , V ₆ = 12V	—	0.15	1.0	%
Output Circuit						
Output power (max.)	P _O	f = 1kHz, R _L = 16Ω, THD = 10%	1.8	2.0	—	W
Voltage gain	G _V	f = 1kHz, V _{i(12)}} = 50mV _{rms}	30	32	34	dB
Total harmonics distortion	THD (out)	f = 1kHz, P ₀ = 1W	—	0.7	1.2	%
Static circuit current	I _{CQ}	V _{CC} = 20V	8	20	50	mA

ICs for TV

■ Application Circuit



Maintenance/Discontinued includes following four Product lifecycle stage.
planned maintenance type
maintenance type
planned discontinued type
discontinued type
Please visit following URL about latest information.
<http://www.semicon.panasonic.co.jp/en/>

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

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products. No license is granted in and to any intellectual property right or other right owned by Panasonic Corporation or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book 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.
- (4) The products and product specifications described in this book 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.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. 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.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of our company.