AN5250

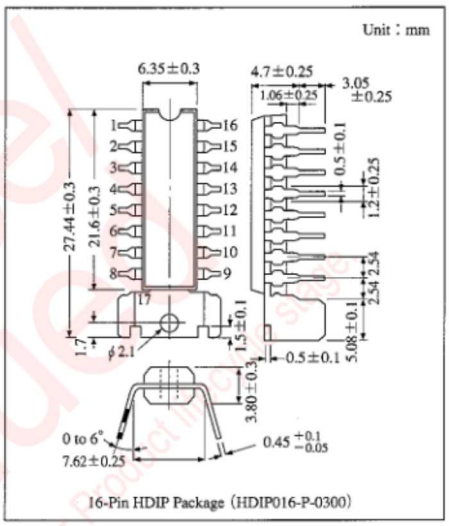
TV Sound-IF Amplifier, Detector, AF Output IC

■ Overview

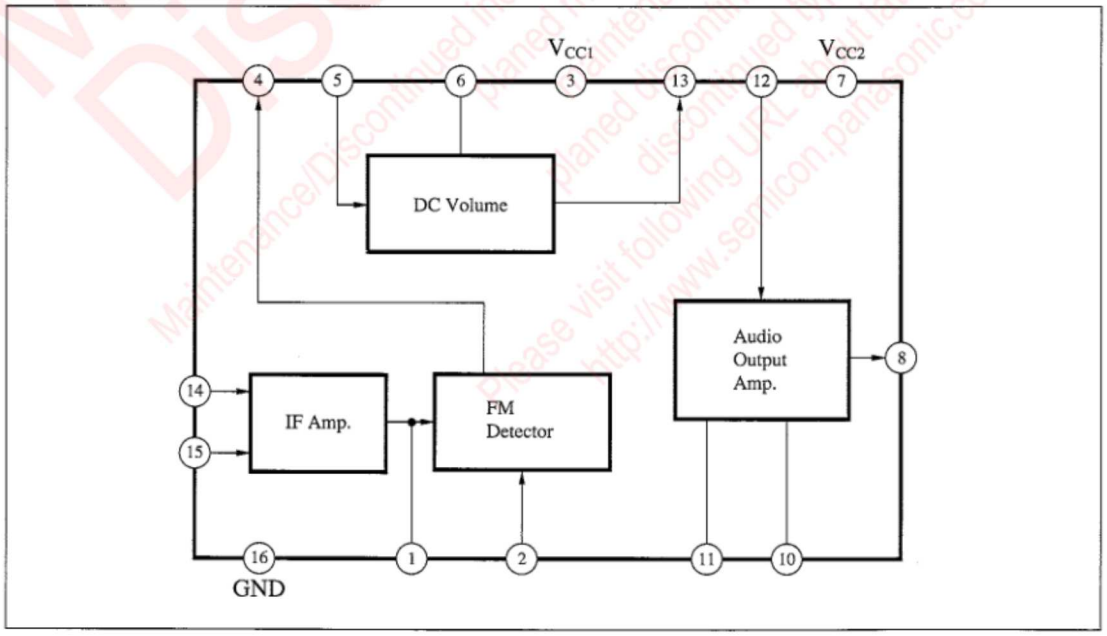
The AN5250 is an integrated circuit designed for TV sound signal processing circuit.

■ 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℃)

Parameter		Symbol	Rating		Unit
Voltage	Supply voltage	V_{CC1}	$V_{3\text{-}16}$	13.8	V
		V_{CC2}	$V_{7\text{-}16}$	26	V
	Circuit voltage	$V_{6\text{-}16}$	6	$V_{3\text{-}16}$	V
Current	Circuit current	I_8	−1.2	+1.2	A_{Peak}
Power dissipation	Detector, DCVR circuit	P_{D1}	0.6		W
	Output circuit	P_{D2}	1.6		W
Temperature	Operating ambient temperature	T_{opr}	−20 to +70		℃
	Storage temperature	T_{stg}	−55 to +150		℃

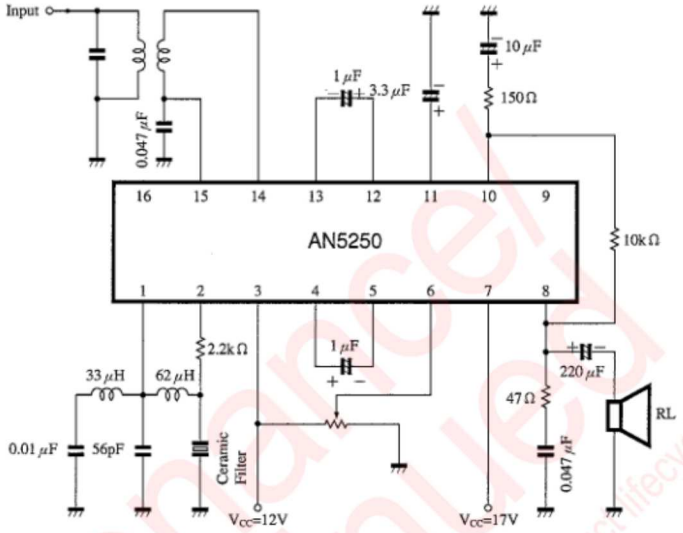
Note) "+" and "−" are flow-in and flow-out currents to/from the circuit, respectively.

■ Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	min	typ	max	Unit
DC Characteristics						
Total circuit current	I_{tot}	$V_{3\text{-}16}$=12V	23	—	42	mA
Circuit voltage	$V_{1\text{-}16}$	$V_{3\text{-}16}$=12V, Pin⑭ and ⑮ are connected.	3.2	4.0	4.8	V
	$V_{4\text{-}16}$		5.8	6.6	7.7	V
	$V_{8\text{-}16}$		8.8	9.5	10.2	V
	$V_{13\text{-}16}$		6.6	7.6	8.5	V
IF Amplification Detector						
Input limiting sensitivity	$V_{i(lim)}$	f_O=4.5MHz, f_m=400Hz, Δf=±25kHz	—	250	400	μV
AM rejection	AMR	f_O=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_O=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	$A_{13\text{-}5}$	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_O=1W	—	0.7	1.2	%
Static circuit current	I_{CQ}	V_{CC}=20V	8	20	50	mA

ICs for TV

■ Application Circuit



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