

AN5250

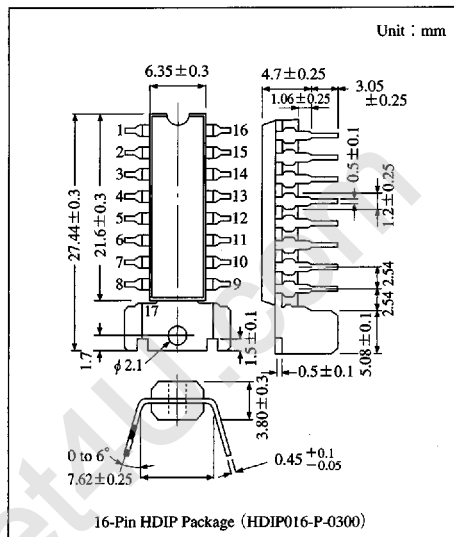
TV Sound-IF Amplifier, Detector, AF Output IC

Overview

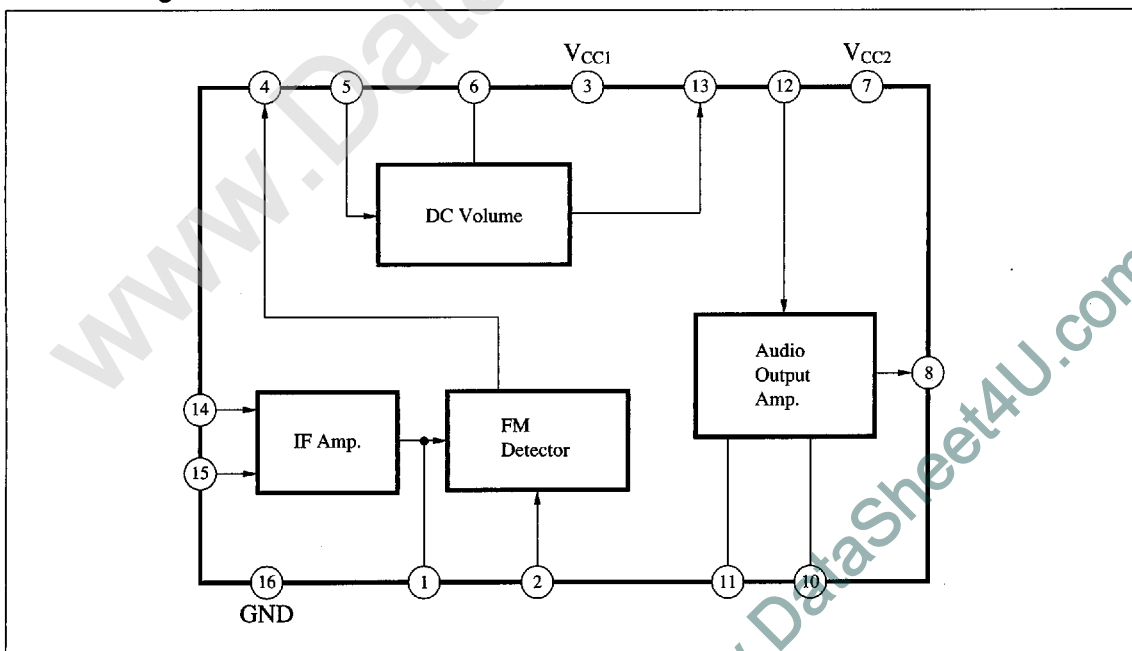
The AN5250 is an integrated circuit designed for TV sound signal processing circuit.

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



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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 (T_a = 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 _s	-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 (T_a = 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 _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 ₁₃₋₅	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 _{CCQ}	V _{CC} = 20V	8	20	50	mA

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■ Application Circuit

