

# LINEAR MONOLITHIC INTEGRATED CIRCUITS

## IC's For TV

Type No.	Function	Maximum Ratings (Ta=25°C)	Electrical Characteristics (Ta=25°C)								
			Item	Symbol	Condition	min.	typ.	max.	Unit		
AN241P AN241PD	Sound IF Amplifier Detector Circuit	Vcc = * Icc(1s) = 50mA PD = 445mA Topr = -20 ~ +70°C Tstg = -40 ~ +150°C * Terminal (9) can be connected to any positive voltage by using a resistor Rs Ex. Vcc = 24V Rs = 390Ω Vcc = 140V Rs = 3.9kΩ In both cases, Is = 33mA	(Vcc = 24V, Rs = 390Ω)								
			Total Circuit Current	Itot	Vcc = 9V, Pin (1)-(2), (9)-(10) shorted	10	16	24	mA		
			Zener Voltage	V5-3	Pin (1)-(2), (9)-(10) shorted	10.3	11.2	12.2	V		
			Input Limiting Voltage (-3dB)	Vi(lim)	fo = 4.5MHz, fm = 400Hz Δf = ±25kHz		250	400	μVrms		
			AM Rejection Ratio	AMR	fo = 4.5MHz, fm = 400Hz Δf = ±25kHz Vi = 100mVrms	AM = 400Hz 30%	40	50	dB		
			Output Impedance	Ro(1F)	fo = 4.5MHz		3.25		kΩ		
			Output Impedance	Co(1F)	Pin (9)-(3) shorted		10		pF		
			Demodulation Output (1)	Vo(AF1)	fo = 4.5MHz fm = 400Hz Δf = ±25kHz	R6 = 0	0.5	0.75	1.1	Vrms	
			Demodulation Output (2)	Vo(AF2), 241PD1	fo = 4.5MHz fm = 400Hz Δf = ±25kHz	R6 = 10kΩ			0.2	Vrms	
			Demodulation Signal Distortion	THD(1)	Vi = 100mVrms		0.9	2	%		
			Output Resistance	Ro(7)	f = 400Hz, Vi = 100mVrms		7.5		kΩ		
				Ro(8)			300		Ω		
			Attenuation Circuit, Max. Attenuation	Att	R6 = ∞		60	80	dB		
			Sound Amp.	Distortion	THD(2)	Vo = 2Vrms		1.5		%	
Non-distortional Max. Output	Vo(max)	f = 400Hz			2	2.5	Vrms				
Voltage Gain	Gv(AF)	Vi = 100mVrms			17.5	20	23	dB			
AN340P	Sound Amplifier Detector (DC control)	Vcc = 14.4V Icc = 34mA PD = 490mW Topr = -20 ~ +70°C Tstg = -40 ~ +150°C	Total Circuit Current	Itot	V5-3 = 12V	16	22	28	mA		
			IF Amp.	Input Limiting Voltage (-3dB)	Vi(lim)	fo = 4.5MHz, fm = 400Hz Δf = ±25kHz		200	400	μV	
				AM Rejection Ratio	AMR	fo = 4.5MHz, fm = 400Hz m = 30%(AM), Vi = 100mVrms	40	58		dB	
				Parallel Input Resistance	Ri(1F)	f = 4.5MHz		15		kΩ	
				Parallel Input Capacitance	Ci(1F)	f = 4.5MHz		4.7		pF	
				Parallel Output Resistance	Ro(1F)	f = 4.5MHz		3.9		kΩ	
				Parallel Output Capacitance	Co(1F)	f = 4.5MHz		11		pF	
				Voltage Gain	Gv(1F)	f = 4.5MHz		65		dB	
			Detect.	Total Detection Output	Vo(8,11)	fo = 4.5MHz fm = 400Hz Δf = ±25kHz, Vi = 100mV	V14-3 = 0V	0.55	0.8	1.1	Vrms
				Detection Signal Distortion	THD			0.7	2	%	
			Sound Attenuation, Max. Attenuation	GR			80		dB		
			Sound Pre-Amp.	Voltage Gain	Gv	f = 400Hz, Vo = 1Vrms		18	20	22	dB
				Total Harmonic Distortion	THD			0.9		%	
				Non-distortional Max. Output	Vo(max)	f = 400Hz, THD = 10%		2	3.3	Vrms	
Output Noise Voltage	Vno	Vi = 0, Pin (4)-(6) shorted				1	mVrms				
Output Resistance	Ro(12)	f = 400Hz		90		Ω					
	AN355	Sound IF Amp., Detector, Output Circuit	Vcc = 20V PD = 1.6W*1 PD = 1.8W*2 Topr = -20 ~ +70°C Tstg = -55 ~ +150°C *1 Ta = 70°C *2 Ta = 60°C	Circuit Current		I11		16	21	26	mA
				I16		17	24	31	mA		
IF Amp. Detect.				Input Limiting Voltage (-3dB)	Vi(lim)	fo = 4.5MHz Δf = ±25kHz		200	400	μV	
				AM Rejection Ratio	AMR	fm = 400Hz m = 30%(AM) Vi = 100mV	40	50	dB		
				Input Impedance	Ri(1F)	f = 4.5MHz		15	kΩ		
					Co(1F)			7.5	pF		
Total Detection Output				Vo	fo = 4.5MHz, fm = 400Hz Δf = ±25kHz, Vi = 100mV		700	1000	1400	mVrms	
				Half Detection Output	Vo/2		300	500	700	mVrms	
Attenuation Circuit, Max. Attenuation Residual Sound				Att				5	mVrms		
Output Circuit				Maximum Output Power	PO(max)	f = 400Hz, THD = 10%	1.4	1.6	W		
				Output Current	Io		180	mA			
				Voltage Gain	Gv	f = 400Hz	29	31	33	dB	
				Distortion	THD	Input (Pin (15)) = 30mV	0.8	2	%		
				Output Noise Voltage	Vno		5	mVrms			
	Input Resistance	Ri(15)	f = 400Hz	3.3	4.5	kΩ					

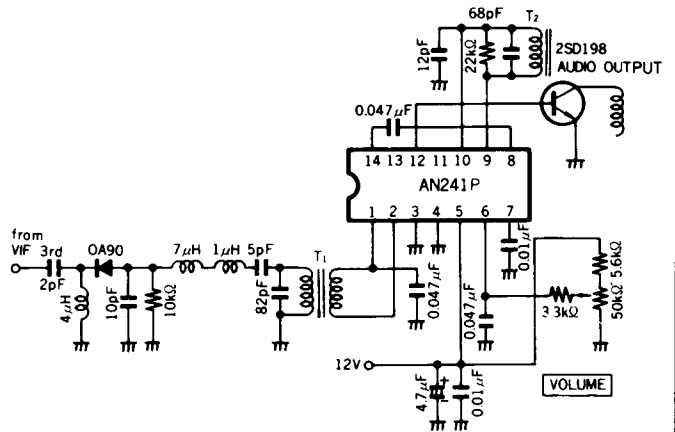
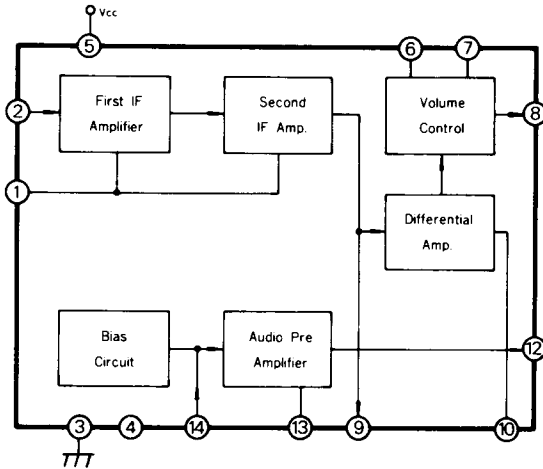
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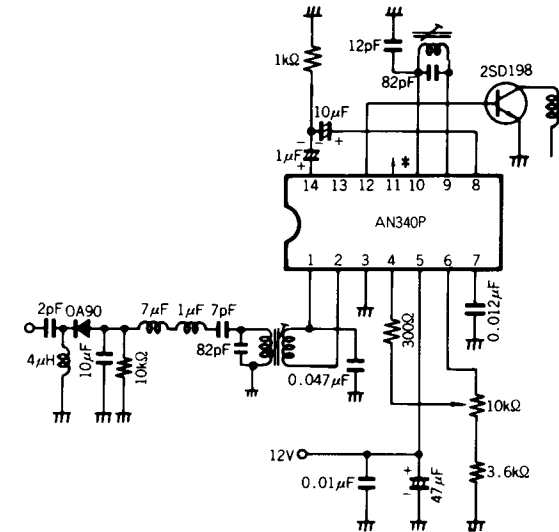
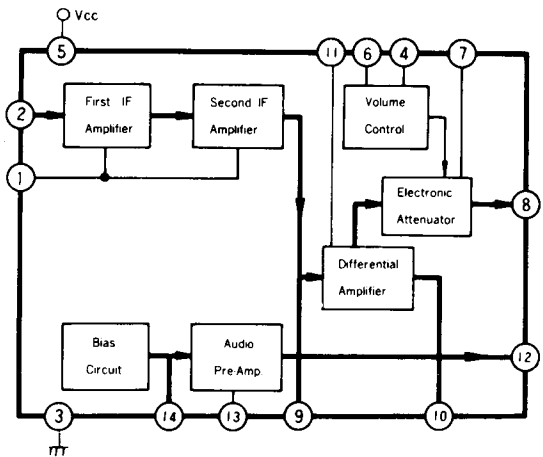
Block Diagram

Application Circuit

AN241P/AN241PD (Package I-16,14-Lead Plastic DIL)



AN340P (Package I-16,14-Lead Plastic DIL)



\* Constant Output

AN355 (Package I-19,16-Lead Plastic DIL with Fin)

