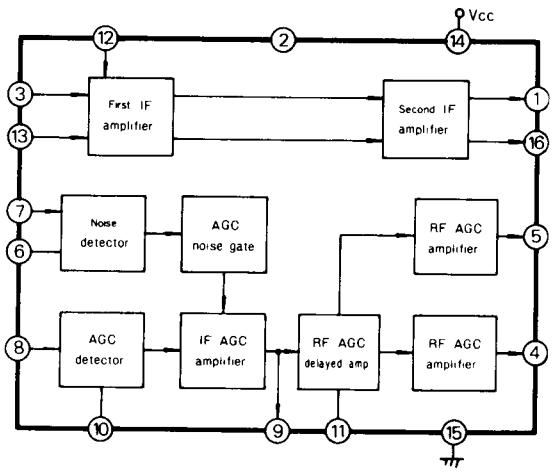
IC's For TV

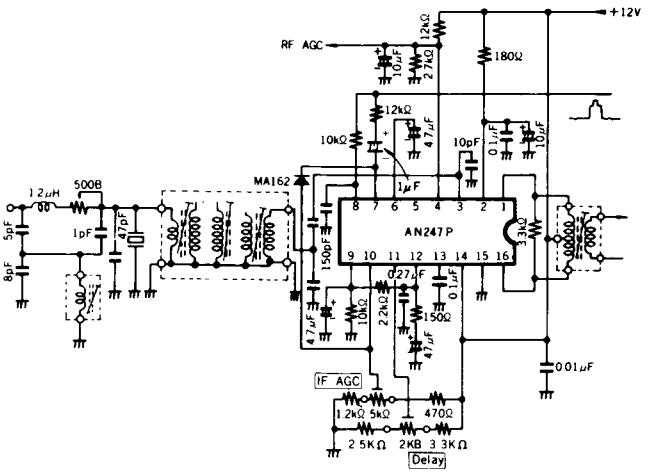
Video IF Signal Processing Circuit

Type No.	Function	Maximum Ratings (Ta=25°C)	Item		Symbol	Condition	min.	typ.	max.	Unit
△ AN247P	Video IF Amp. with AGC Circuit	$V_{CC}(V_{2\text{-}15})$=14.4V $V_{CC}(V_{14\text{-}15})$=14.4V I_{CC}=30mA (I_2+I_{14}) P_D=435mW Topr=−20~+70℃ Tstg=−40~+150℃	(V_{CC}=12V)							
			Circuit Current (1)		I_2		7	11	15	mA
			Circuit Current (2)		I_{14}		5	8	11	mA
			IF Amp.	Voltage Gain	G_V	f=58.75MHz	41	44	47	dB
				AGC Range	H_{AGC}	f=58.75MHz	60			dB
				Forward Transfer Admittance	$\|Y_{21}\|$	f=58.75MHz		230		m℧
				Noise Figure	NF	f=60.0MHz		9		dB
			AGC Circuit	IF AGC Max. Voltage	$V_{9\text{-}15}$		8	9.3	10.6	V
				IF AGC Min. Voltage	$V_{9\text{-}15}$				0.5	V
				RF AGC Max. Voltage	$V_{4\text{-}15}$	Forward	9.1	9.8	10.5	V
				RF AGC Min. Voltage	$V_{4\text{-}15}$	Forward			0.5	V
				RF AGC Max. Voltage	$V_{5\text{-}15}$	Reverse	10	10.8	11.6	V
				RF AGC Min. Voltage	$V_{5\text{-}15}$	Reverse			0.5	V
				IF AGC Voltage Gain	$G_{V(IF)}$		40	44	48	dB
				RF AGC Voltage Gain	$G_{V(RF\text{-}F)}$	Forward	36	42	45	dB
				RF AGC Voltage Gain	$G_{V(RF\text{-}R)}$	Reverse	37	43	46	dB
AN5111	Video IF Amp. Detector, AGC AFC Circuit	$V_{CC}(V_{20\text{-}2})$=14.4V $V_{CC}(V_{20\text{-}16})$=14.4V P_D=1.4W*1 P_D=0.8W*2 Topr=−20~+70℃ Tstg=−40~+125℃ *1 Ta=25℃ *2 Ta=70℃	(V_{CC}=12V)							
			Total Circuit Current		I_{tot}		35	50	66	mA
			VIF Amp.	Voltage Gain	G_V	f=58.75MHz, Vi=50dBμ	40	45	50	dB
				Input Resistance	R_{i1}	f=58.75MHz	0.8	1.05	1.3	kΩ
				Input Capacitance	C_{i1}	f=58.75MHz	2.3	2.9	4.1	pF
			Video Detection	Convergence Gain	G_C	fo=58.75MHz, Vi=0.12Vp-p fm=400Hz, m=74% (AM)	27	30	33	dB
				Differential Gain	DG	fo=58.75MHz, fm=3.58MHz Staircase Signal Wave Modulation	0	5	10	%
				Differential Phase	DP		0	3	5	deg
				Carrier Rejection	CRJ	f=58.75MHz, Vo=2Vp-p	50	60	80	dB
			AFC Circuit	Detection Sensitivity	μ	f=58.75MHz, sweep signal Vo=5.5V~7.5V	47	58	69	mV/kHz
				AFC Center Voltage	V_{10}		5	6.5	7.1	V
				Maximum Output Voltage	$V_{10(max)}$	f=58.75MHz−500kHz	10.5	11.5	12	V
				Minimum Output Voltage	$V_{10(min)}$	f=58.75MHz+500kHz	0	0.5	1	V
				AFC SW OFF Voltage	V_{AFC}	f=58.75MHz sweep signal	1.3	1.5	1.6	V
			AGC Circuit	IF AGC Gain	G_V	V_{19}=50mVp-p V_{23}=3.5±0.5V	28	33	38	dB
				RF AGC Gain F	G_V	V_6=10mVp-p	45	49	53	dB
				RF AGC Gain R	G_V	V_5=6±0.5V	46	50	54	dB
			Total Circuit Operation	Video Detection Output	$V_{O(DET)}$	f=58.75MHz, Vi=80dBμ fm=500kHz, m=74% (AM)	1.8	2	2.2	Vp-p
				Sensitivity	S	f=58.75MHz, Non modulation	50	55	60	dBμ
				AGC Range	R_{AGC}		56	60	70	dB
				4.5MHz Output	$V_{O(SIF)}$	58.75MHz……80dBμ 54.25MHz……60dBμ	90	93	96	dBμ

Block Diagram	Application Circuit

AN247P (Package I—18,16—Lead Plastic DIL)





AN5111 (Package I—23,28—Lead Plastic DIL)