

AN5132

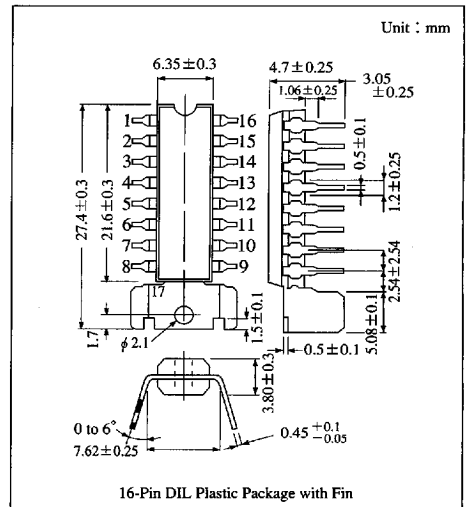
Video IF Amplifier, Detector, AGC, AFC IC for Color TV

Overview

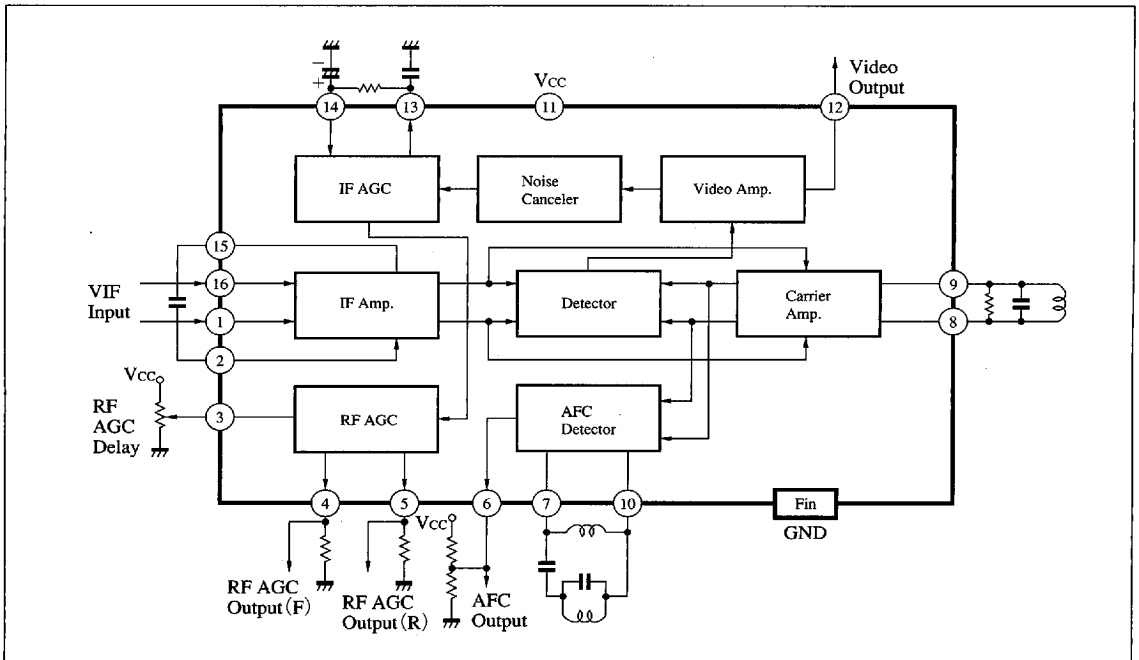
The AN5132 is an integrated circuit designed for color TV video IF signal processing circuit.

Features

- High density one chip integration of video IF amplifier, video detector, video preamplifier, AGC and AFC circuits. With this IC, compact set designing is possible.
- High performance by built-in phase compensation type synchronous detector circuit.
- As AFC using double balanced phase comparator, the influence to video detection is little.
- Forward RF AGC and reverse RF AGC output pins are attached.



Block Diagram



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■ Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Rating		Unit
Voltage	Supply voltage	V _{CC}	13.8		V
	Circuit voltage	V _{3-Fin}	V _(1-Fin)	0	V
		V _{5-Fin}	V _(1-Fin)	0	V
		V _{6-Fin}	V _(1-Fin)	0	V
		V _{7,10-Fin}	V _(1-Fin)	0	V
Current	Circuit current	I ₁₂	+1	-10	mA
		I ₄	0	-10	mA
Power dissipation		P _D	1,100		mW
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.

■ Electrical Characteristics (Ta=25°C)

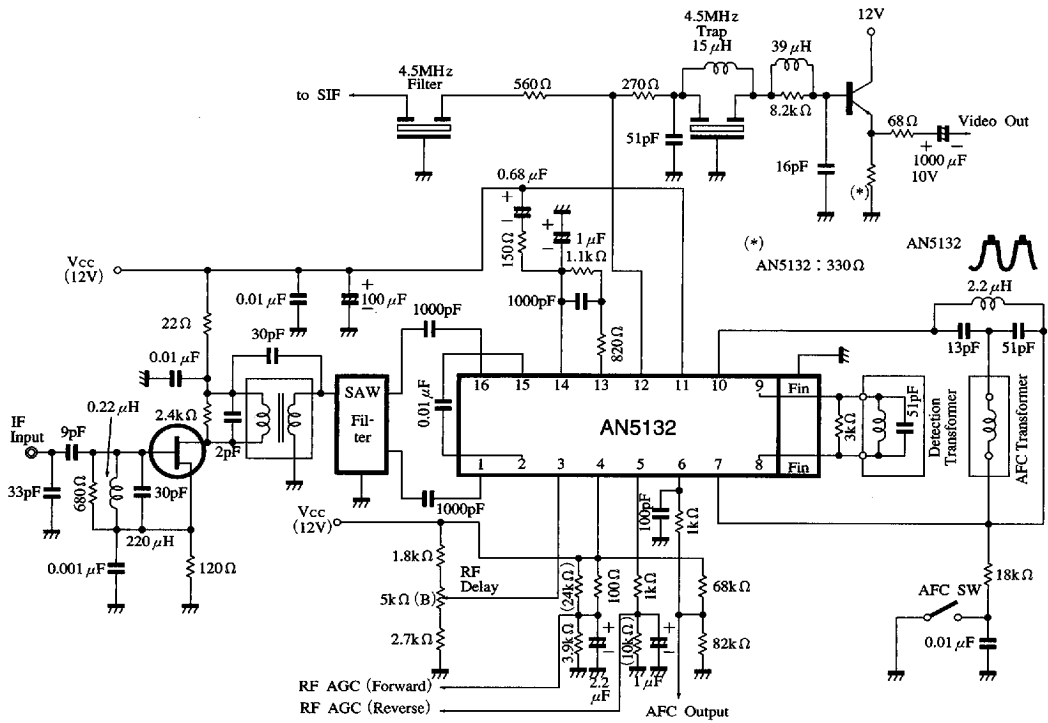
Parameter	Symbol	Condition	min	typ	max	Unit	
IF Amplifier Detector							
Detector output (Video)	V _O	Mod.=87.5%	1.7	2.0	2.3	V _{P-P}	
Input sensitivity	S _(IN)	V _O =-3dB	—	46	—	dBμ	
Input voltage (max.)	V _I		—	110	—	dBμ	
Differential gain	DG		0	4	—	%	
Differential phase	DP		0	2	5	deg.	
Frequency characteristics (Video)	f _c	V _O =-3dB	6.5	9	15	MHz	
Output voltage (SIF)	V _O	P/S=20dB	120	160	200	mV _{rms}	
Input resistance (Pin①)	R _i	f=58.75MHz	0.7	1.0	1.3	kΩ	
Input capacitance (Pin①)	C _i		3.6	4.6	5.6	pF	
AGC Circuit							
Voltage gain (RF AGC)	F	G _{V(F)}	R _L =3.9kΩ	24	30	36	dB
	R	G _{V(R)}	R _L =10kΩ	27	33	39	dB
AFC Circuit							
AFC center voltage	V ₆	V _{CC} =12V	5.0	6.5	7.1	V	
AFC defeat-SW operating voltage	V _(AFC)	R _L =68kΩ//82kΩ, R _S =18kΩ	0.5	1.5	2.5	V	
Phase detector sensitivity	μ	R _L =68kΩ//82kΩ	60	100	130	mV/kHz	
DC Characteristics							
Circuit current	I ₁₁	V _{CC} =12V	39	56	71	mA	

ICs for
TV

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Application Circuit



Pin Descriptions

Pin No.	Pin name	Pin No.	Pin name
1	IF input	10	AFC coil
2	Input bias	11	V _{CC}
3	RF AGC delay adj.	12	Det. output
4	RF AGC output (F)	13	IF AGC output
5	RF AGC output (R)	14	IF AGC input
6	AFC output	15	Input bias
7	AFC coil	16	IF input
8	Det. coil	Fin	GND
9	Det. coil		

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