BIPOLAR ANALOG INTEGRATED CIRCUIT

μPC1366C

VIDEO IF PROCESSOR FOR B/W TV

DESCRIPTION

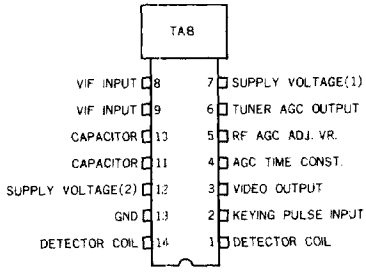
The μPC1366C is a silicon monolithic integrated circuit designed for VIF section in B/W television receivers. This IC has all functions including video IF amplifier, video low-level detector, RF AGC, IF AGC and noise canseller.

This IC is encapsulated in 14 pin dual in-line package with heat tab.

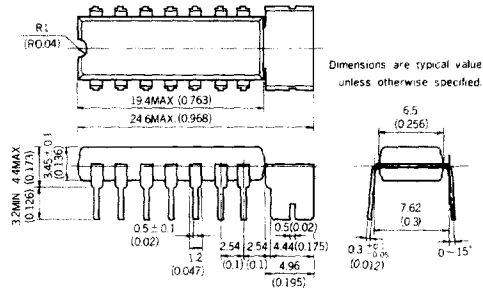
FEATURES

- High input sensitivity; TYP. 30dBμ.
- It can be used both of keyed type AGC and peak type AGC.
- It can be operated with the power supply voltage above 7V.
- Since the video detector has wide bandwidth, it's suitable for the sound carrier frequency of 4.5, 5.5, 6.0, 6.5MHz.
- As input is differential mode, it can be used with SAW filter.
- All functions for VIF stage are provided by this single chip IC and this IC will realize reduction of assembly cost as well as reduction of number of external components.

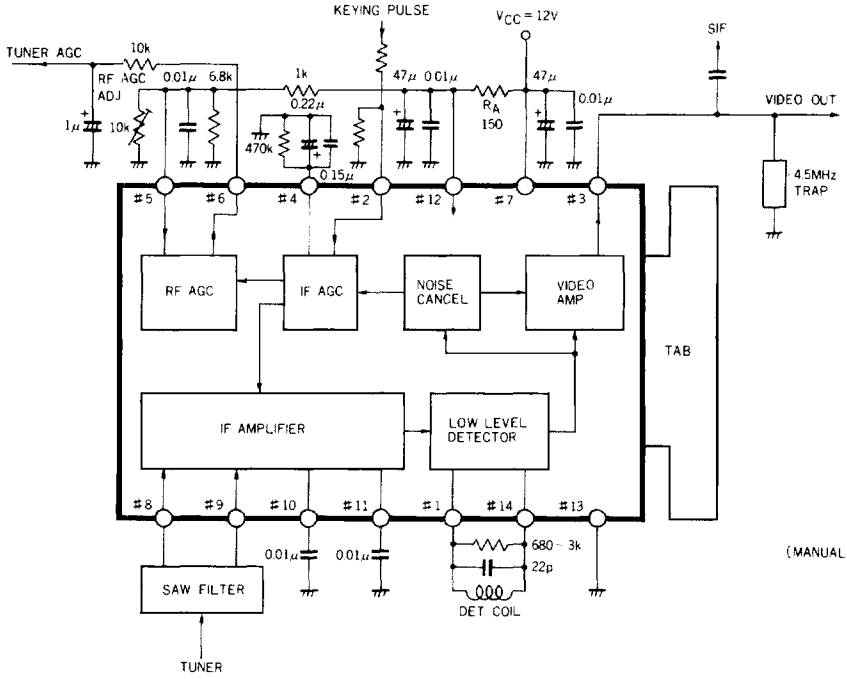
CONNECTION DIAGRAM (Top View)



PACKAGE DIMENSIONS in millimeters (inches)

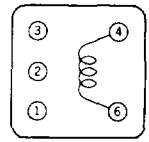


BLOCK DIAGRAM



DETECTOR COIL SPEC

TOKO 10KN TYPE 180PNA – 10212BS
frequency : 57MHz (C = 33pF±3%)
No load Q : 96±20%
Turn : 4 – 6 6T
Wire : 0.16φ 2UEW



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

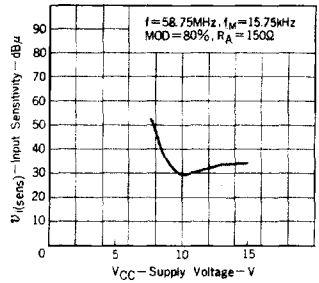
Supply Voltage Pin-7	V_7	15	V
Input Signal Voltage	V_8 V_9	3	Vp-p
Power Dissipation	P_d	875 (Ta = 75°C) Free Air	mW
Operating Temperature	T_{opt}	−20 to +75	°C
Storage Temperature	T_{stg}	−40 to +125	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = 12V, Ta = 25±3°C, f = 58.75MHz, f_M = 15.75kHz)

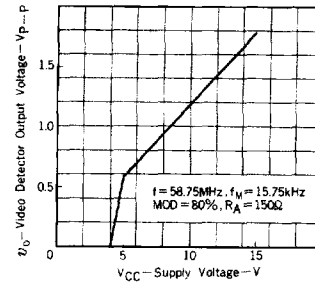
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Total Supply Current	I_{CC}	40	50	60	mA	I_7+I_{12}, R_A = 150Ω
Input Sensitivity	$v_{i(sens)}$		30	35	dBμ	MOD = 80%, v_o = 1.4Vp-p
Maximum Input Voltage	$v_{i(max.)}$	100			dBμ	MOD = 80%, −1dB Point
Video Output Voltage	v_o	1.0	1.4	1.7	Vp-p	MOD = 80%, v_i = 3mVr.m.s.
Video Output DC Voltage	V_o	3.3	3.8	4.3	V	No Signal
Signal to Noise Ratio	S/N	40	50		dB	MOD=80% ~ 0%, v_i=3mVr.m.s.
RF AGC Voltage (High)	V_{6H}	8	9	11	V	V_5 = 0V
RF AGC Voltage (Low)	V_{6L}		0	0.5	V	V_5 = 7V
Differential Gain	D.G.			10	%	Stair Step f_M = 3.58MHz
Differential Phase	D.P.			10	deg	Stair Step f_M = 3.58MHz
Video Detector Band Width	BW	5.5			MHz	−3dB Point
Input Resistance	Rin		1.5		kΩ	
Input Capacitance	Cin		3.3		pF	

TYPICAL CHARACTERISTICS (Ta = 25°C)

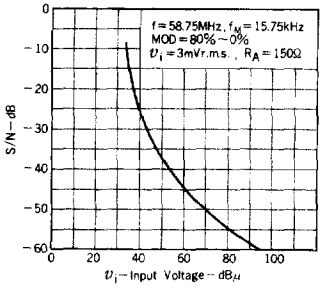
INPUT SENSITIVITY vs. SUPPLY VOLTAGE



VIDEO DETECTOR OUTPUT VOLTAGE vs. SUPPLY VOLTAGE



S/N vs. INPUT VOLTAGE



VIDEO DETECTOR OUTPUT VOLTAGE ATTENUATION vs. FREQUENCY