

AN6368, AN6368S

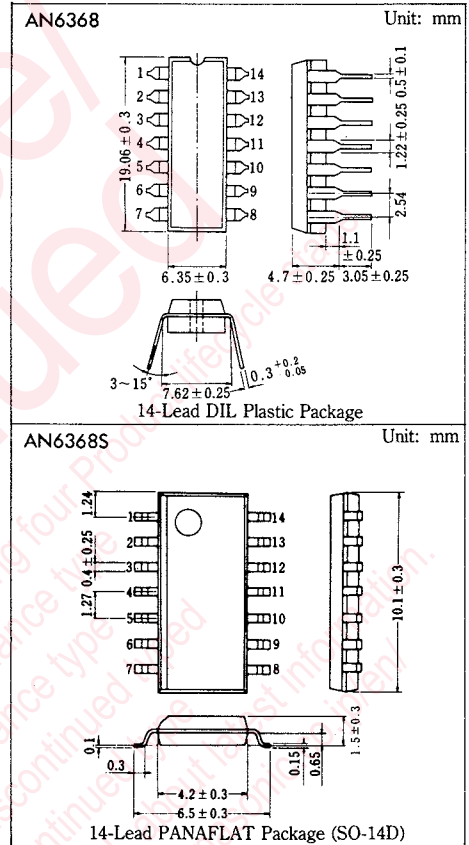
VTR PAL/SECAM Signal Detector Circuits

Outline

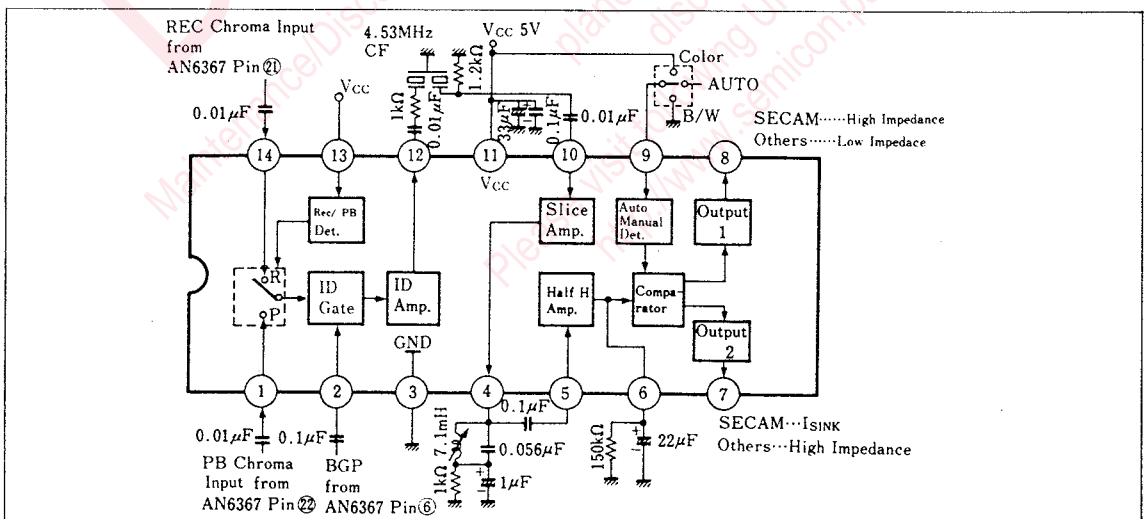
The AN6368 and The AN6368S are integrated circuits provided with the function which discriminates PAL/ SECAM and generates a control signal when constituting a VTR color signal processing circuit with the AN6367 or the MN6163A.

Features

- Built-in REC/PB input selection switch
- Burst gate pulse can be directly connected from the MN6163A
- Output the control signals for the AN6367 and the MN6136A
- Built-in automatic/manual switch



Block Diagram



■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	PB Chroma Input	8	SECAM/Others Det. Output(1)
2	Burst Gate Pulse Input	9	Auto/Manual Switch
3	GND	10	Slice Amp. Input
4	0.5f _H Tuning Output	11	V _{CC}
5	0.5f _H Amp. Input	12	ID Gate Signal Input
6	Sample & Hold Terminal	13	Rec./PB Switching Signal Input
7	SECAM/Others Det. Output(2)	14	Rec. Chroma Input

■ Absolute Maximum Ratings (T_a=25°C) T_a=25°C

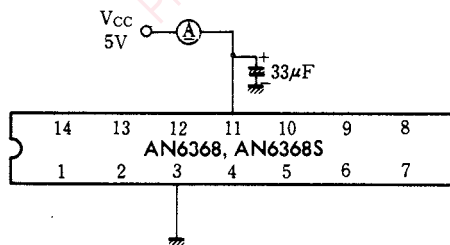
Item	Symbol	Rating	Unit
Supply voltage	V _{CC}	6	V
Power dissipation	P _D	70	mW
Operating ambient temperature	T _{opr}	-20~+70	°C
Storage temperature	T _{stg}	-40~+150	°C

■ Electrical Characteristics (T_a=25°C)

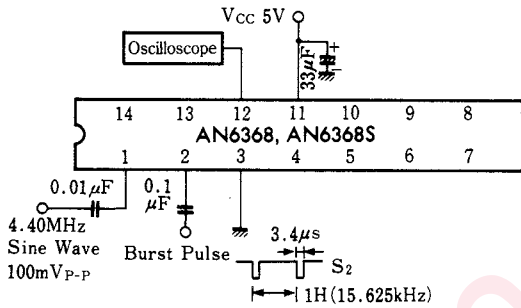
Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Circuit current	I _{CC}	1	V _{CC} =5V	4.3	6.3	8.3	mA
Burst gate pulse input sensitivity	S ₂	2	V _{CC} =5V	0.6		2.2	V _{P-P}
ID amp. gain	G _{V-12}	2	V _{CC} =5V, Input 4.4MHz 100mV _{P-P}	17		22	dB
REC select voltage	V _{REC}	3	V _{CC} =5V	3.5		5	V
PB select voltage	V _{PB}	3	V _{CC} =5V	0		1.5	V
ID amp. cross talk	CT ₁₂	3	V _{CC} =5V, Input 4.4MHz 100mV _{P-P}			-40	dB
Forced color input voltage	V _{H-9}	4	V _{CC} =5V	4.6		5	V
Forced monochrome input voltage	V _{L-9}	5	V _{CC} =5V	0		0.5	V
Discrimination output 1 SECAM output voltage	V _{H-8}	4	V _{CC} =5V, 1mA	3.5		5	V
Discrimination output 1 monochrome output voltage	V _{L-8}	5	V _{CC} =5V, 1mA	0		1.5	V
Discrimination output 2 SECAM lead-in current	I _{S-7}	4	V _{CC} =5V, V ₇ =2V	0.2	0.5	0.8	mA
Discrimination output 2 monochrome leak current	I _{L-7}	5	V _{CC} =5V, V ₇ =2V		0	5	μA
Comparator SECAM discrimination voltage	V _{H-6}	6	V _{CC} =5V	3.1		5	V
Comparator monochrome discrimination voltage	V _{L-6}	6	V _{CC} =5V	1		2.5	V

Note) Operating supply voltage range: V_{CC(oper)}=4.5~5.5V

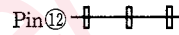
Test Circuit 1 (I_{CC})



Test Circuit 2 (S_2 , G_{V-12})



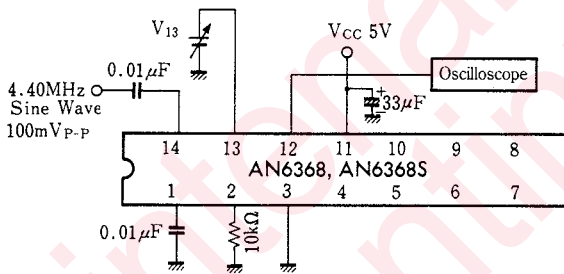
- S_2 : Pin ⑫ input amplitude for a signal of about 900 mV_{p-p} to be output to the Pin ⑫ as shown below



- G_{V-12}

$$G_{V-12} = \frac{\text{Pin ⑫ Burst Amplitude}}{\text{Pin ⑫ Input Amplitude}} \quad (100\text{mV}_{pp})$$

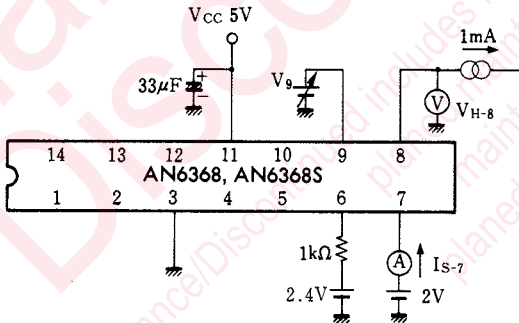
Test Circuit 3 (V_{REC} , V_{PB} , CT_{12})



- V_{REC} : V_{13} voltage when V_{13} is changed and a signal of about 900 mV_{p-p} is output to the Pin ⑫
- V_{PB} : V_{13} voltage when V_{13} is changed and nothing is output to the Pin ⑫
- CT_{12} : Output amplitude ratio of the Pin ⑫ when V_{13} is changed

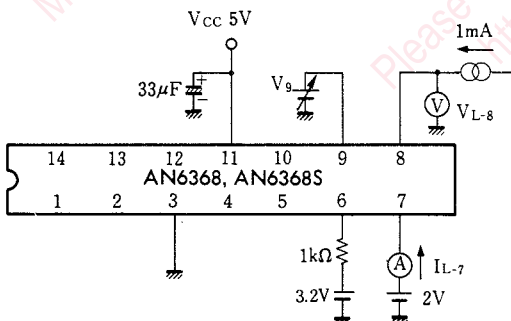
$$CT_{12} = \frac{V_{12}(\text{at } V_{PB})}{V_{12}(\text{at } V_{REC})}$$

Test Circuit 4 (V_{H-9} , V_{H-8} , I_{S-7})



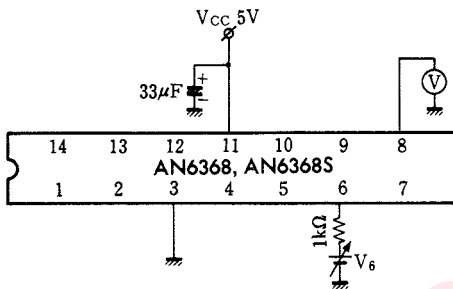
- V_{H-9} : V_9 value when V_9 is changed and a Pin ⑧ voltage becomes 3.5 V or higher
- V_{H-8} , V_{S-7} : Value when a Pin ⑧ voltage V_9 is 4 V

Test Circuit 5 (V_{L-9} , V_{L-8} , I_{L-7})



- V_{L-9} : V_9 value when V_9 is changed and a Pin ⑧ voltage becomes 1.5 V or less
- V_{L-8} , V_{L-7} : Value when the Pin ⑧ voltage V_9 is 1 V

Test Circuit 6 (V_{H-6} , V_{L-6})



- V_{H-6} : V_6 value when V_6 is changed and a Pin ⑥ voltage becomes 3.5 V or higher
- V_{L-6} : V_6 value when V_6 is changed and the Pin ⑥ voltage becomes 1.5 V or lower

■ Precautions for Use

- 1) Allowable supply voltage : $V_{CC}=4.5$ to 5.5 V
 - 2) This is a SECAM signal discriminating IC when using the AN6367 and the MN6163 in a VTR for PAL/ pseudo SECAM.
 - 3) Burst gate pulses are input from the Pin ②. However, since an input circuit's discrimination point is $1/2 V_{CC}$, input an amplitude which makes a pulse width $1/V_{CC}$.
- Note) Do not directly connect the Pin ⑬ of the MN6163.

5) Half H frequency adjustment

For Pin ⑥ external LC, select an LC value which allows $\frac{f_H}{2} = \frac{1}{2\pi\sqrt{LC}}$.

6) AUTO/MANUAL selection

SECAM discrimination is selected with Pin ⑨. This IC determination is output in Pin ⑨ Open state.

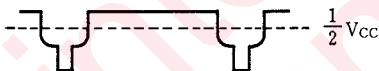
7) For an input chroma signal ;

- Input an AN6367 Pin ② signal to the Pin ⑭ of this IC when recording.
- Input an AN6367 Pin ② signal to the Pin ① of this IC when playing back.

8) Connect Pin ⑦ discrimination output 2 to the AN6367 Pin ⑩.

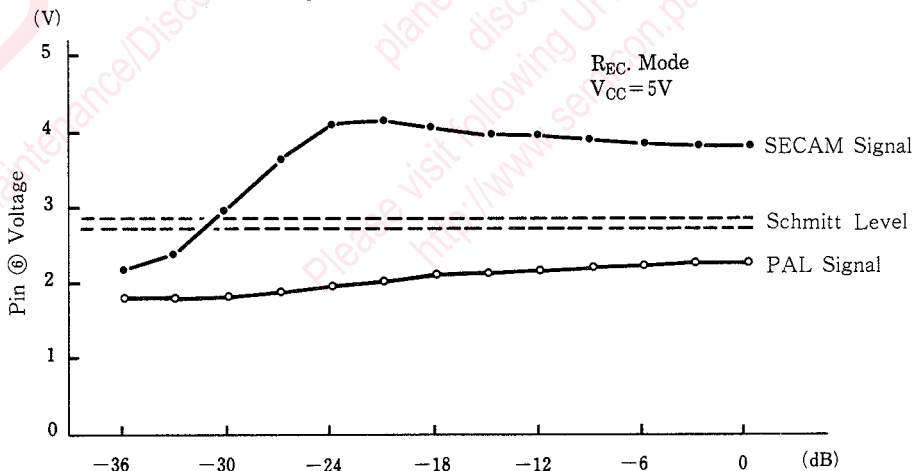
This turns off the AN6367 Killer in case of SECAM.

9) Pin ⑧ discrimination output 1 is push-pull output. Use as a SECAM discrimination signal.



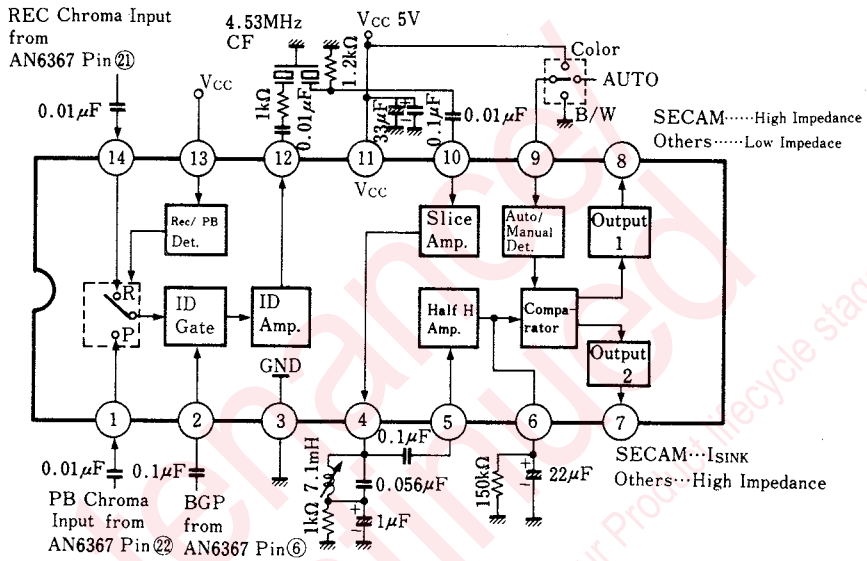
- 4) A Pin ⑫ output discriminating filter should have the following specifications :
 - ①Center : 4.53 MHz
 - ②Insertion loss : 8 dB or less
 - ③Attenuation : 20 dB or less (output difference between 4.40 MHz and 4.25 MHz)

Example of Discrimination Characteristic



AN6367 Pin ② Input Amplitude (0 dB=Burst, 100 mVp-p)

■ Application Circuit



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