

AN6371, AN6371S

VTR Color APC Circuits

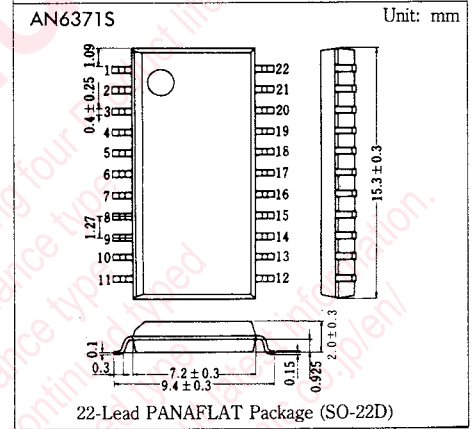
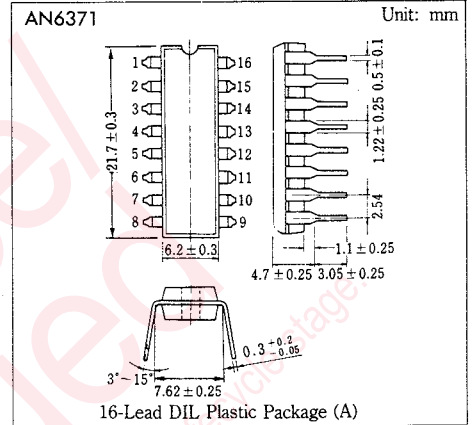
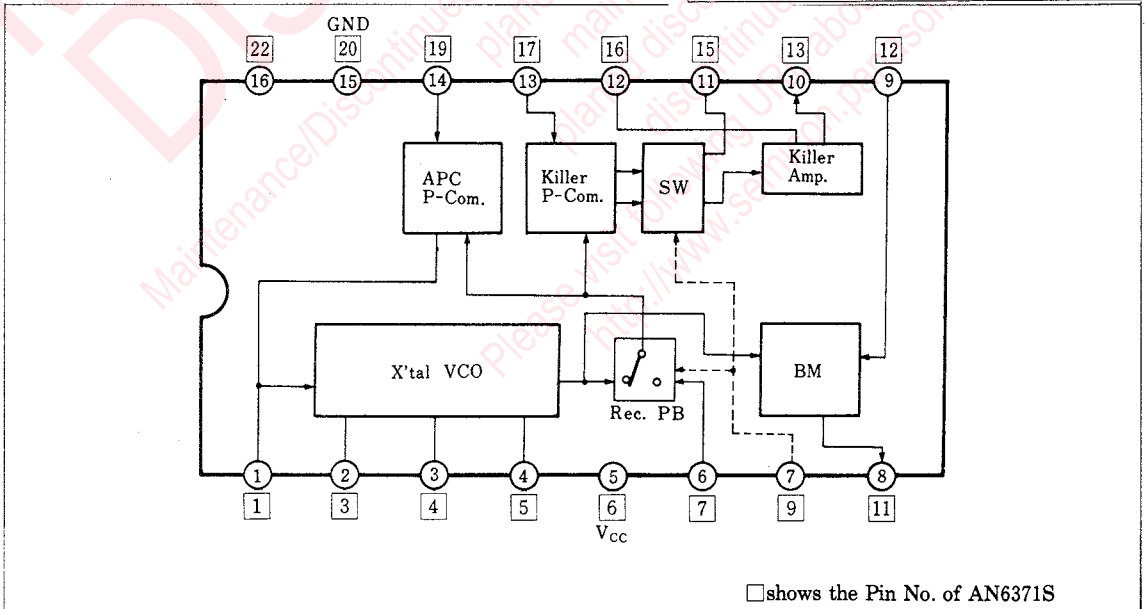
Outline

The AN6371 and The AN6371S are integrated circuits designed for VTR color APC constitute a VTR PAL-system color signal processing circuit by combining with the AN6360, the AN6363 or the 6363S.

Features

- The functions consist of :
 - APC circuit
 - Color-killer circuit
 - Balanced modulator
 - ID detector
- Supply voltage either 9V or 12V

Block Diagram



■ Pin

() shows the Pin No. of AN6371S

Pin No.	Pin Name	Pin No.	Pin Name
1 (1)	APC Filter	9 (12)	627kHz Input
2 (3)	X'tal Oscillator	10 (13)	Killer Output
3 (4)		11 (15)	ID Detect
4 (5)		12 (16)	Killer Detect
5 (6)		V _{CC}	13 (17)
6 (7)	4.43MHz Input	14 (19)	APC Burst Input
7 (9)	Rec./P.B. Select	15 (20)	GND
8 (11)	5.06MHz Output	16 (22)	Killer Filter

In case of AN6371S, Pin No.②,⑧,⑩,⑬,⑱,⑳ are NC.

■ Absolute Maximum Ratings (T_a=25°C)

Item	Symbol	Rating	Unit
Supply voltage	V _{CC}	14.4	V
Power dissipation (T _a =70°C)	AN6371	550	mW
	AN6371S	270*	
Operating ambient temperature	T _{opr}	-20~+70	°C
Storage temperature	AN6371	-40~+150	°C
	AN6371S	-40~+125	

*Indicates a package capability.

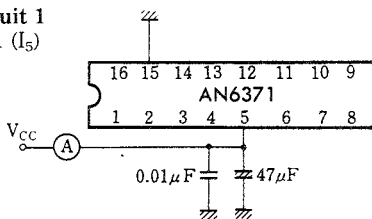
■ Electrical Characteristics (V_{CC}=12V, T_a=25°C±2°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Circuit current	AN6371	I ₅	1	20		40	mA
	AN6371S	I ₆					
X'tal VCO frequency control sensitivity	AN6371	β ₈	2	7.2		17.3	Hz/mV
	AN6371S	β ₁₁					
APC P-COM discrimination sensitivity	μ ₁	4	Burst 1V _{P-P}	9.5		26	mV/deg
Color killer sensitivity ON	S _(B/W)	4	H→L	-8		-3.3	dB
Color killer sensitivity OFF	S _(Color)	4	L→H			-2.8	dB
Color killer output (H)	AN6371	V _{10-H}	4	9			V
	AN6371S	V _{13-H}					
Color killer output (L)	AN6371	V _{10-L}	4			0.5	V
	AN6371S	V _{13-L}					
180° ID detection phase	AN6371	S _{(ID)13}	4	Burst 1V _{P-P}	150	230	deg
	AN6371S	S _{(ID)17}					
BM output amplitude	AN6371	v _{O8}	3	1.4		2	V _{P-P}
	AN6371S	v _{O11}					
Carrier leak	AN6371	CL ₈	3			-30	dB
	AN6371S	CL ₁₁					
Rec./PB select sensitivity	AN6371	S ₇	5	3			V
	AN6371S	S ₉					

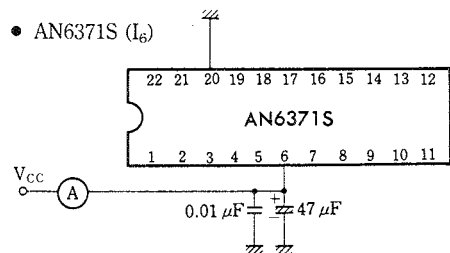
Note) X'tal is for 3.58MHz. A signal is an NTSC signal.
Operating supply voltage range V_{CC(OPR)}=8.5~13V

Test Circuit 1

- AN6371 (I₅)

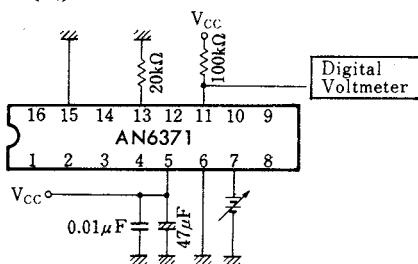


- AN6371S (I₆)



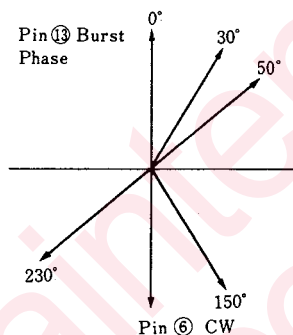
Test Circuit 5

• AN6371(S_T)

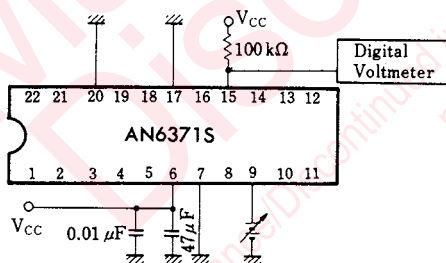


Note) Pin 7 voltage when a Pin 11 voltage is changed from L to H

Burst Phase Diagram

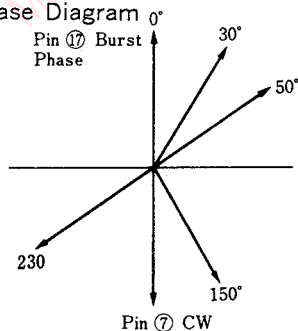


• AN6371S(S_S)



Pin 9 voltage when a Pin 15 voltage is changed from L to H

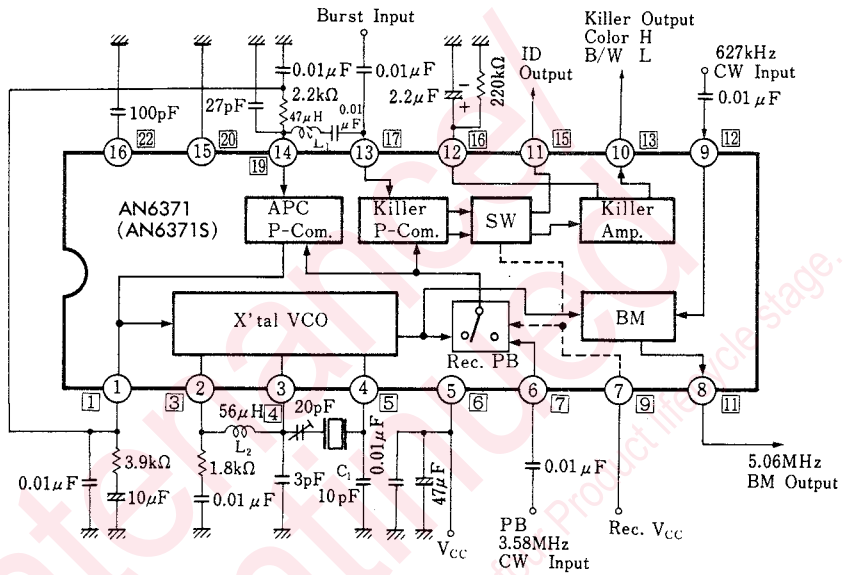
Burst Phase Diagram



- APC P-COM(μ_1)
Assume that a Pin 1 voltage is V_1 when a Pin 13 burst input signal($1 V_{p-p}$) has a 50° phase(see a burst phase diagram), and that it is V_2 when having a 30° phase, and obtain out of $V_1 - V_2/20$.
- Color killer sensitivity ON($S_{(B/W)}$)
Pin 13 input amplitude when a Pin 10 output voltage is turned from H to L by lowering a Pin 13 input amplitude (b-ur st phase 0°)
- Color killer sensitivity OFF($S_{(color)}$)
Pin 13 input amplitude when the Pin 10 output voltage is turned from L to H by raising the Pin 13 input amplitude (b-ur st phase 0°)
- Color killer output(H)
Pin 10 voltage when Pin 13 input is $1 V_{p-p}$
- Color killer output(L)
Pin 10 voltage when Pin 13 input is turned off
- 180° ID detection phase($S_{(ID13)}$)
Phase which causes a Pin 8 output voltage to be changed by changing a Pin 13 input phase

- APC P-COM(μ_1)
Assume the Pin 1 voltage is V_1 when a Pin 17 burst input signal($1 V_{p-p}$) has a 50° phase(see the burst phase diagram), and that it is V_2 when having a 30° phase, and obtain out of $V_1 - V_2/20$.
- Color killer sensitivity ON($S_{(B/W)}$)
Pin 17 input amplitude when a Pin 13 output voltage is turned from H to L lowering a Pin 17 input amplitude(bur st phase 0°)
- Color killer sensitivity OFF($S_{(color)}$)
Pin 17 input amplitude when the Pin 13 output voltage is turued from L to H by raising the Pin 17 input amplitude(b-ur st phase 0°)
- Color killer output(H)(V_{13-H})
Pin 13 voltage when Pin 17 input is $1 V_{p-p}$
- Color killer output(L)(V_{13-L})
Pin 13 voltage when Pin 17 input is OFF
- 180° ID detection phase($S_{(ID17)}$)
Phase where a Pin 11 output voltage is changed a Pin 17 input phase

■ Application Circuit



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