AN6360, AN6360S

VTR Color ACC Circuits

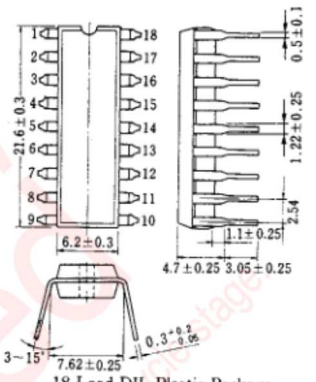
■ Outline

The AN6360 and the AN6360S are integrated circuits designed for VTR color ACC and constitute a color processing circuit by combining with the AN6361N, the AN6362 or the AN6362S.

■ Features

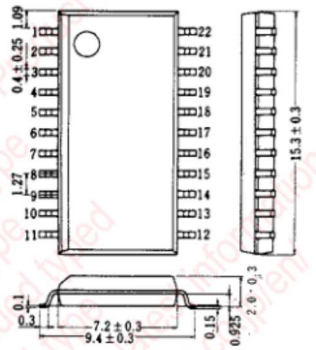
- The funcions consist of :
  - ACC circuit
  - Balanced modulator
  - Burst 6 dB up/down circuit
  - Play back amplifier
- Supply voltage either 9V or 12V

AN6360 Unit : mm



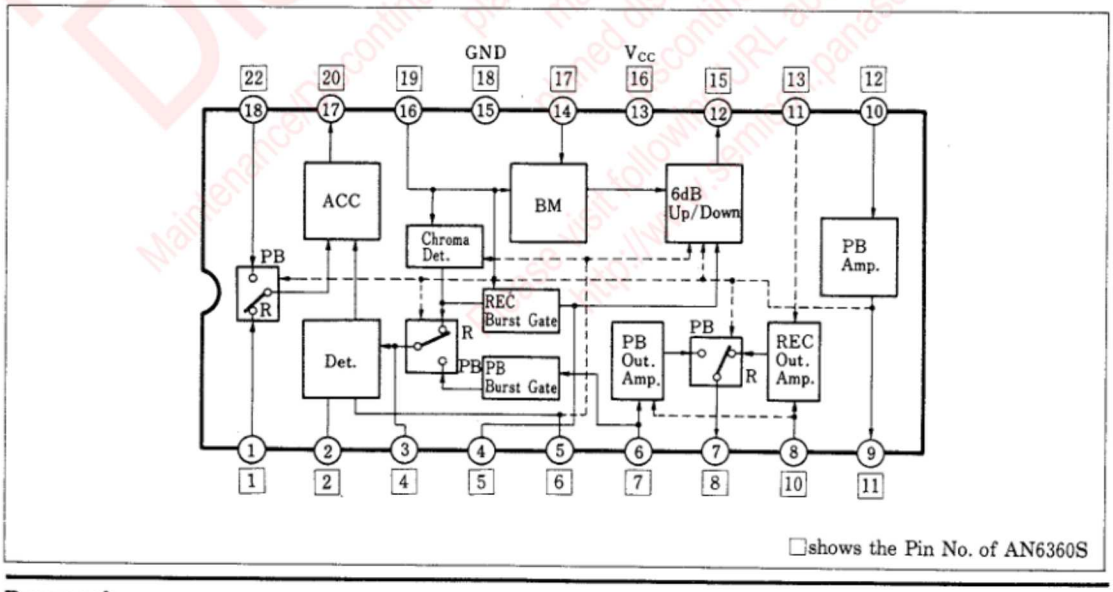
18-Lead DIL Plastic Package

AN6360S Unit : mm



22-Lead PANAFLAT Package (SO-22D)

■ Block Diagram



□shows the Pin No. of AN6360S

■ Pin

( ) shows the Pin No. of AN6360S

Pin No.	Pin Name	Pin No.	Pin Name
1 (1)	ACC Rec. Input	9 (11)	P.B. Amp. Output R/P.B. Select
2 (2)	Burst Detect		
3 (4)	Burst Output	10 (12)	P.B. Amp. Input
4 (5)	Burst Gate Pulse Input	11 (13)	Rec. Current Select
5 (6)	Chroma Select Burst 6 dB up/down Select	12 (15)	B.M. Output
		13 (16)	V_{cc}
6 (7)	Output Amp. P.B. Chroma Input	14 (17)	Carrier Input
		15 (18)	GND
7 (8)	Chroma Output	16 (19)	Signal Input
8 (10)	Output Amp. Rec. Chroma Input C/B/B/W Select	17 (20)	ACC Output
		18 (22)	ACC P.B. Input

In case of AN6460S, Pin No.③,⑨,⑭,㉑ are NC

■ Absolute Maximum Ratings (Ta=25℃)

Item		Symbol	Rating	Unit
Supply voltage		V_{CC}	14.4	V
Power dissipation (Ta=70℃)	AN6360	P_D	550	mW
	AN6360S		270*	
Operating ambient temperature		T_{opr}	−20~+70	℃
Storage temperature	AN6360	T_{stg}	−40~+150	℃
	AN6360S		−40~+125	

* Indicates a package capability.

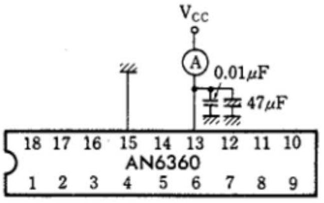
■ Electrical Characteristics (V_{cc}=12V, Ta=25℃±2℃)

Item		Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Circuit current	AN6360	I_{13}	1		20		40	mA
	AN6360S	I_{16}						
Rec. AGC output amplitude(Burst AGC)	AN6360	V_{17-1}	2	v_1 Chroma, 0.2V_{P-P}	0.3		0.65	V_{P-P}
	AN6360S	V_{20-1}						
Rec. AGC control sensitivity (Burst AGC)	AN6360	Δv_{17-1}	2	+6dB~−15dB			3.5	dB
	AN6360S	Δv_{20-1}						
Rec. AGC control sensitivity (Chroma AGC)	AN6360	ΔV_{17-2}	2	CY Signal	2		5	dB
	AN6360S	ΔV_{20-2}						
Rec./PB cross talk	AN6360	CT_{17}	3	v_1=3.58MHz, 0.1V_{P-P}			−40	dB
	AN6360S	CT_{20}						
Rec. burst gate gain	AN6360	G_{V16-3}	4	v_{16} Chroma Signal, 0.4V_{P-P}	12.9		16.1	dB
	AN6360S	G_{V19-4}						
PB burst gate gain	AN6360	G_{V6-3}	4	v_6 Chroma Signal, 0.2V_{P-P}	18.4		21.6	dB
	AN6360S	G_{V7-4}						
B.M. output amplitude	AN6360	v_{O12}	5		1		1.5	V_{P-P}
	AN6360S	v_{O15}						
B.M. carrier leak	AN6360	CL_{12}	5				−40	dB
	AN6360S	CL_{15}						
Burst emphasis amount		$G_{(Emph)}$	5		5		7	dB
Burst de-emphasis amount		$G_{(D-Emph)}$	5		−7		−5	dB
PB amp. gain	AN6360	G_{V10-9}	6	v_{10} 0.2V_{P-P}	16		20	dB
	AN6360S	G_{V12-11}						
Rec. output amp. gain(1)	AN6360	G_{V8-1}	7	SP mode	12		15	dB
	AN6360S	G_{V10-1}						
Rec. output amp. gain(2)	AN6360	G_{V8-2}	7	LP mode	0.5		2.5	dB
	AN6360S	G_{V10-2}						
PB output amp. gain	AN6360	G_{V6-7}	7		7		10	dB
	AN6360S	G_{V7-8}						
Monochrome/color cross talk	AN6360	CT_7	8				−40	dB
	AN6360S	CT_8						
Rec./PB select sensitivity	AN6360	S_9	3	P.B.→Rec.	9			V
	AN6360S	S_{11}						
Rec. output amp. LP/SP select sensitivity	AN6360	S_{11}	7	SP→LP	9			V
	AN6360S	S_{13}						
Monochrome/color select sensitivity	AN6360	S_8	8	Color→ monochrome			1.5	V
	AN6360S	S_{10}						

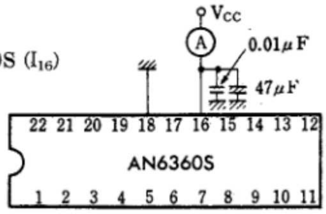
Note) Operating supply voltage range $V_{CC(opr)}$=8.5~13V

Test Circuit 1

● AN6360 (I_{13})

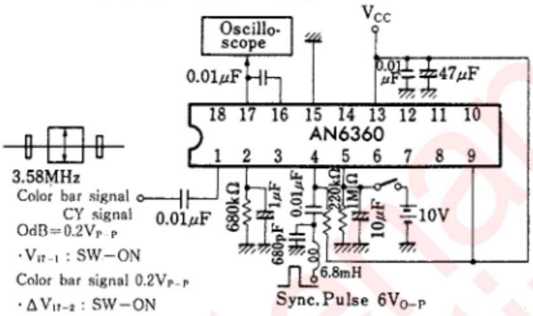


● AN6360S (I_{16})



Test Circuit 2

● AN6360 (V_{17-1}, Δv_{17-1}, ΔV_{17-2})



· V_{17-1} : SW−ON

Color bar signal 0.2V_{P-P}

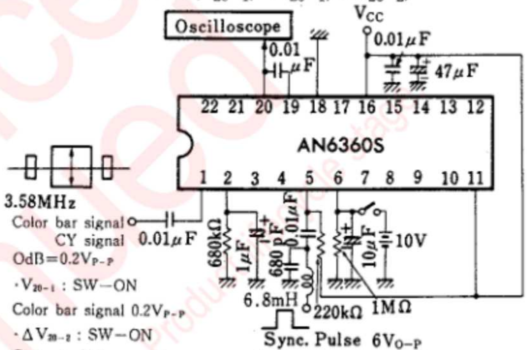
· ΔV_{17-2} : SW−ON

Output difference between color bar signals + 6dB and −15dB

· ΔV_{17-2} : SW−OFF

Burst output difference between CY section 0.2 V_{P-P} and 0, with CY signal 0.2 V_{P-P}

● AN6360S (V_{20-1}, Δv_{20-1}, ΔV_{20-2})



OdB=0.2V_{P-P}

· V_{20-1} : SW−ON

Color bar signal 0.2V_{P-P}

· ΔV_{20-2} : SW−ON

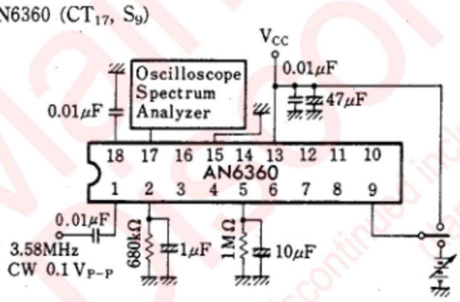
Output difference between color bar signals + 6dB and −15dB

· ΔV_{20-2} : SW−OFF

Burst output difference between CY section 0.2 V_{P-P} and 0, with CY signal 0.2 V_{P-P}

Test Circuit 3

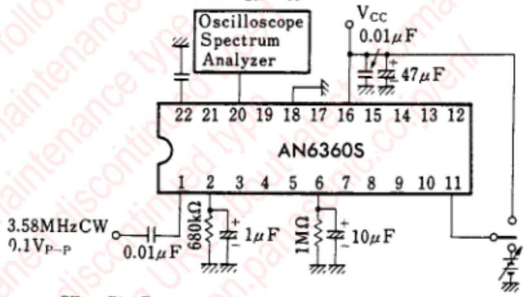
● AN6360 (CT_{17}, S_9)



• CT_{17} : Pin ⑰ output difference between Pin ⑨ V_{CC} and Open

• S_9 : Pin ⑨ voltage when Pin ⑰ output is normally made

● AN6360S (CT_{20}, S_{11})

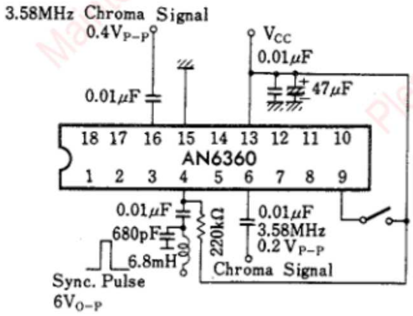


• CT_{20} : Pin ⑳ output difference between Pin ⑪ V_{CC} and Open

• S_{11} : Pin ⑪ voltage when Pin ⑳ output is normally made

Test Circuit 4

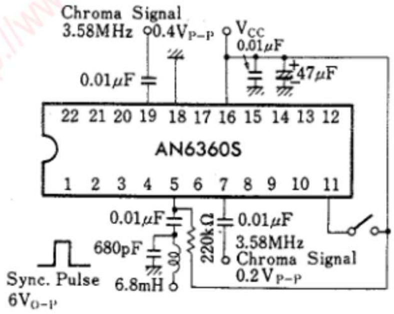
● AN6360 (G_{V16-3}, G_{V6-3})



· G_{16-3} : Input Pin ⑯ SW−ON

· G_{6-3} : Input Pin ⑥ SW−OFF

● AN6360S (G_{V19-4}, G_{V7-4})

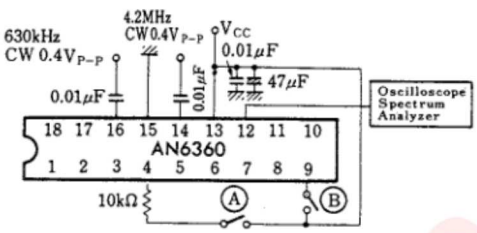


· G_{V19-4} : Input Pin ⑲ SW−ON

· G_{V7-4} : Input Pin ⑦ SW−OFF

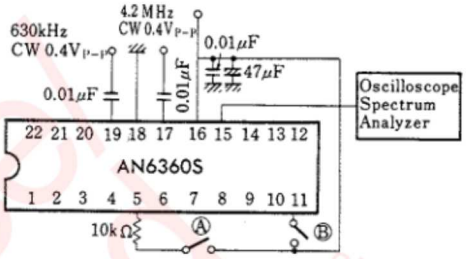
Test Circuit 5

● AN6360 (v_{O12}, CL_{12}, $G_{(Emph)}$, $G_{(D-Emph)}$)



・V_{12}, Lfc_{12} : SW−OFF
・$G_{(Emph)}$: SWA ON/OFF difference with SWB−ON
・$G_{(D-Emph)}$: SWA ON/OFF difference with SWB−OFF

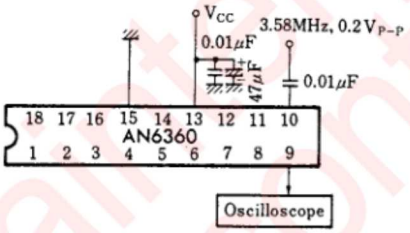
● AN6360S (v_{O15}, CL_{15}, $G_{(Emph)}$, $G_{(D-Emph)}$)



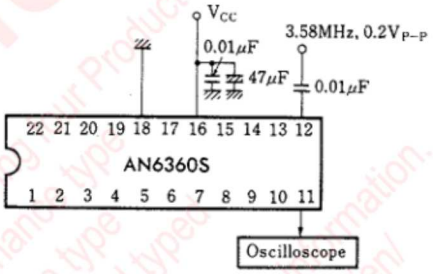
・V_{15}, CL_{15} : SW−OFF
・$G_{(Emph)}$: SWA ON/OFF difference with SWB−ON
・$G_{(D-Emph)}$: SWA ON/OFF difference with SWB−OFF

Test Circuit 6

● AN6360 (G_{V10-9})

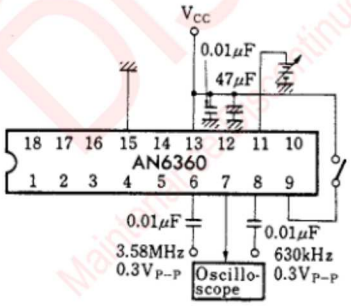


● AN6360S (G_{V12-11})



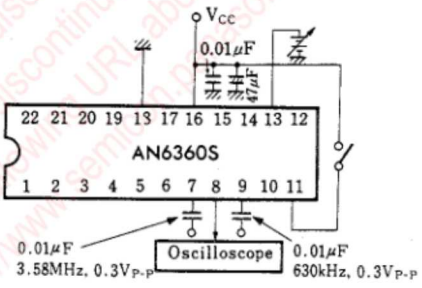
Test Circuit 7

● AN6360 (G_{V8-1}, G_{V8-2}, G_{V6-7}, S_{11})



・G_{V8-1}:
SW−ON, Pin⑪ 0V, V_I ⑧ f=630kHz, $0.3V_{P-P}$
・G_{V8-2}:
SW−ON, Pin⑪ V_{CC}, V_I ⑧ f=630kHz, $0.3V_{P-P}$, Obtain at a ratio to G_{V8-1}.
・G_{V6-7}:
SW−OFF, V_I ⑥ f=3.58MHz, $0.3V_{P-P}$
・S_{11}
SW−ON, V_I ⑧ f=630kHz, $0.3V_{P-P}$. Voltage when Pin ⑦ output goes up by about 1.5 dB by increasing a Pin ⑪ voltage from 0V.

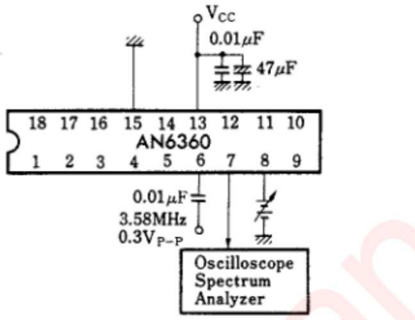
● AN6360S (G_{V10-1}, G_{V10-2}, G_{V7-8}, S_{13})



・G_{V10-1}:
SW−ON, Pin⑬ 0V, V_I ⑩ f=630kHz, $0.3V_{P-P}$
・G_{V10-2}:
SW−ON, Pin⑬ V_{CC}, V_I ⑩ f=630kHz, $0.3V_{P-P}$, Obtain at a ratio to G_{V10-1}.
・G_{V7-8}:
SW−OFF, V_I ⑦ f=3.58MHz, $0.3V_{P-P}$
・S_{13}
SW−ON, V_I ⑩ f=630kHz, $0.3V_{P-P}$. Voltage when Pin ⑧ output goes up by about 1.5 dB by increasing a Pin ⑬ voltage from 0V.

Test Circuit 8

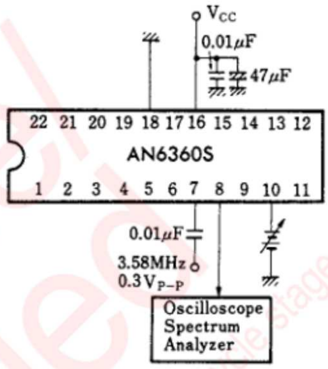
● AN6360 (CT_7, S_8)



・CT_7:
Pin ⑦ output difference between Pin ⑧ Open and 0V

・S_8:
Pin ⑧ voltage when Pin ⑦ output is normally made by increasing a Pin ⑧ voltage from 0V.

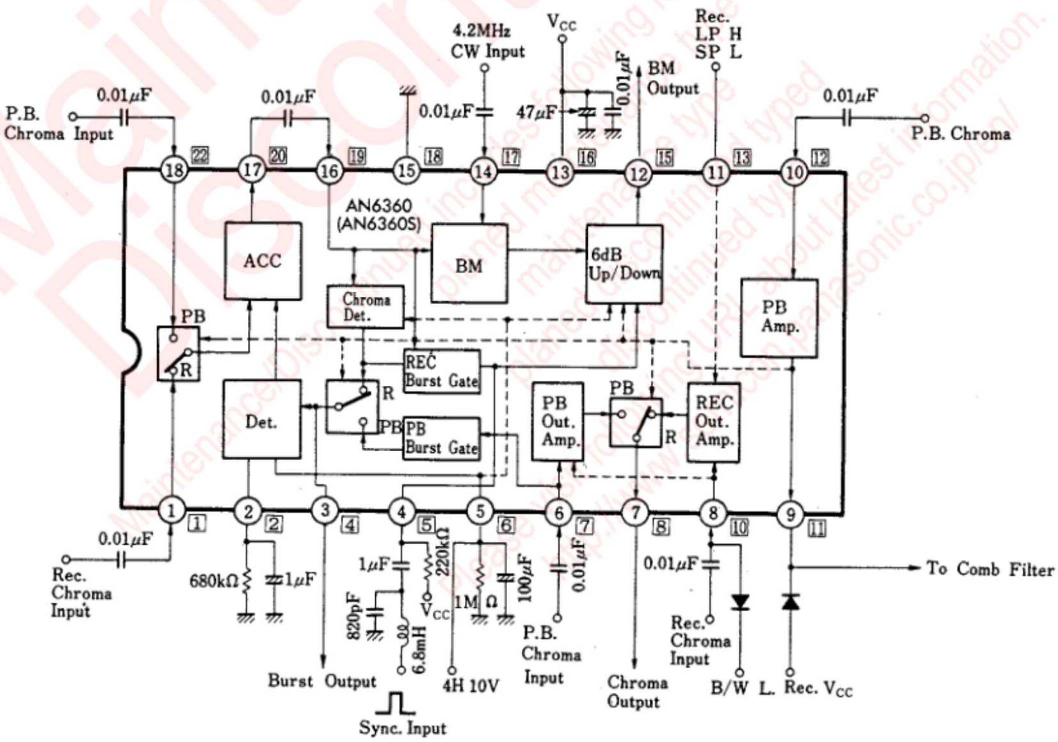
● AN6360S (CT_8, S_{10})



・CT_8:
Pin ⑧ output difference between Pin ⑩ Open and 0V

・S_{10}:
Pin ⑩ voltage when Pin ⑧ output is normally made by increasing a Pin ⑩ voltage from 0V.

■ Application Circuit



□shows the Pin No. of AN6360S

Precautions for Use

1. Set a Pin ⑤ H voltage (burst 6 dB up/down stop) within a range of 8V to 10V. (AN6360S: Pin ⑥)
2. Set the Pin ⑪ to V_{CC} or Open when a recording current is not switched. (AN6360S: Pin ⑬)

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