

AN6337, AN6337S

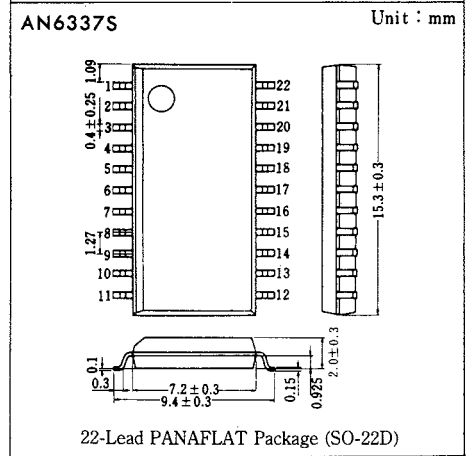
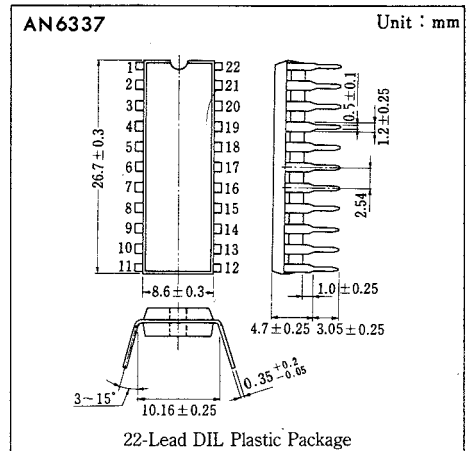
VTR Playback Video Signal Processing Circuits

■ Outline

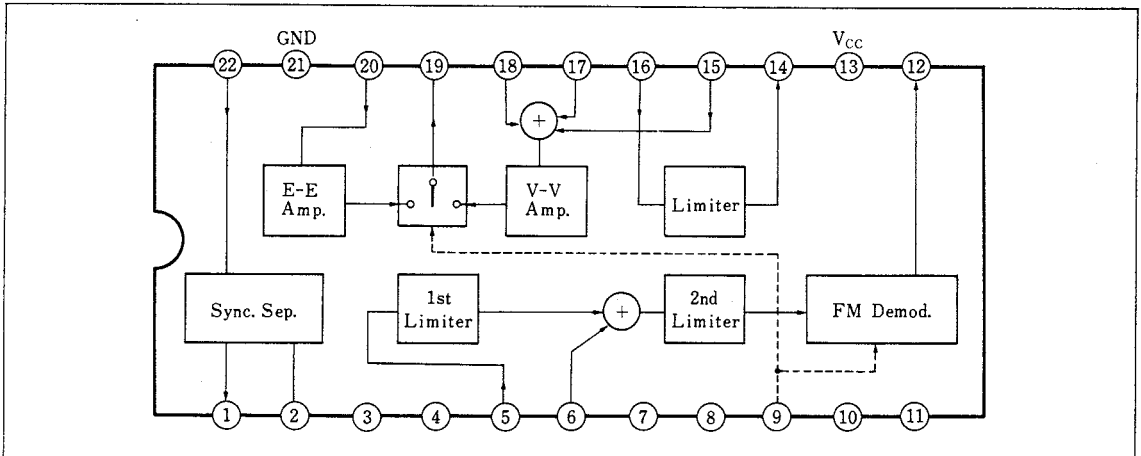
The AN6337 and the AN6337S are integrated circuits designed for VTR's playback video signal processing.

■ Features

- The functions consist of:
 - FM demodulator
 - Double limiter circuit
 - Noise—canceller circuit
 - Mixer Amplitude circuit
 - Synchro signal separator
- Supply voltage: 5V



■ Block Diagram



■ Pin


Pin No.	Pin Name	Pin No.	Pin Name
1	Sync. Sep. Output	12	FM Demod. Output
2	Sync. Sep. Peak Det.	13	V _{cc}
3	FM-Sub Limiter Cap. (1)	14	Noise Canceller Output
4	FM-Sub Limiter Cap. (2)	15	Noise Canceller Mix Amp.
5	FM-Sub Limiter Input	16	Noise Canceller Input
6	FM-Main Limiter Input	17	Video Amp. Color Input
7	FM-Main Limiter Cap. (1)	18	Video Amp. Y Input
8	FM-Main Limiter Cap. (2)	19	Video Amp. Y/C Output
9	Mode Select SW	20	E-E, Amp. Input
10	FM Demod. Cap. (1)	21	GND
11	FM Demod. Cap. (2)	22	Sync. Sep. Input

■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply voltage	V _{cc}	6.0	V
Power dissipation (Ta=70°C)	AN6337	380	mW
	AN6337S	270*	
Operating ambient temperature	T _{opr}	-20~+70	°C
Storage temperature	AN6337	-55~+150	°C
	AN6337S	-40~+125	

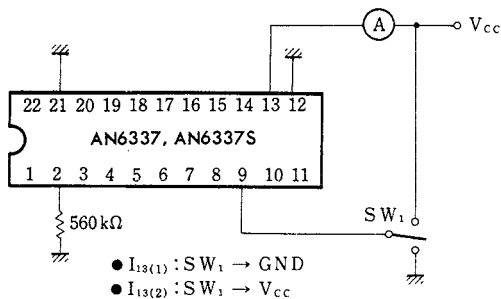
* Indicates a package capability.

■ Electrical Characteristics (Ta=25°C ± 2°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Circuit current (1)	I ₁₃₍₁₎	1	Pin⑩GND(V-Vmode)	35		65	mA
Circuit current (2)	I ₁₃₍₂₎	1	Pin⑩V _{cc} (E-E mode)	20		40	mA
Demodulator detection sensitivity	S ₁₂	2	C=47pF, R ₁₂ =900Ω, f=3.5~4.5MHz	80		140	mV/MHz
Demodulator detection limit	f _(lim)	2	C=47pF, Input 0.1V _{P-P}	7.0			MHz
Demodulator carrier leak (1)	CL ₁₂₋₁	3	C=47pF, 4MHz, 0.1V _{P-P} , Input			-30	dB
Demodulator carrier leak (2)	CL ₁₂₋₂	4	C=47pF, 4MHz, 0.2V _{P-P} , Input			-30	dB
Video amp. gain	G _{V18-18}	5	100kHz, 1.2V _{P-P} , Input	3.2		6.4	dB
Chroma amp. gain	G _{V17-18}	6		7.2		10.8	dB
Noise cancellor mix amp. gain	G _{V15-18}	7	1MHz, 0.7V _{P-P} , Input	-10.8		-7.2	dB
Noise cancellor amp. gain	G _{G16-14}	7	1MHz, 30mV _{P-P} , Input	18.2		21.8	dB
Noise cancellor amp. output amplitude	ν _{O14}	7	1MHz, 0.7V _{P-P} , Input	0.5		0.83	V _{P-P}
E-E amp. gain	G ₂₀₋₁₈	6	100kHz, 0.7V _{P-P} , Input	7.9		11.5	dB
Sync. sep. input sensitivity	S ₂₂	8	Video Input, V/S ratio5:2	0.4			V _{P-P}
Sync. Sep. output amplitude	ν _{O1}	8		3.0		4.6	V _{P-P}
E-E/V-V select sensitivity	S ₉₋₁	9	STB→V-V			0.8	V
Input sensitivity (STB)	S ₉₋₂	9		2.2		2.8	V
Muting sensitivity	S ₁₇	10				0.8	V
E-E/V-V cross talk	CT ₁₉₋₁	9	Pin⑩Input, 3MHz, 0.7V _{P-P}			-40	dB
Muting cross talk	CT ₁₉₋₂	10	Pin⑩Input, 1MHz, 1.2V _{P-P}			-40	dB

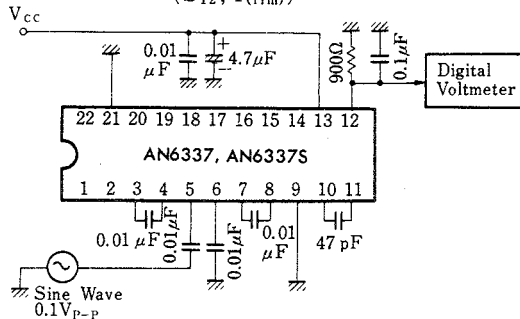
Note) Operating supply voltage range V_{cc(opr)}=4.5~5.5

Test Circuit 1 ($I_{13(1)}$, $I_{13(2)}$)



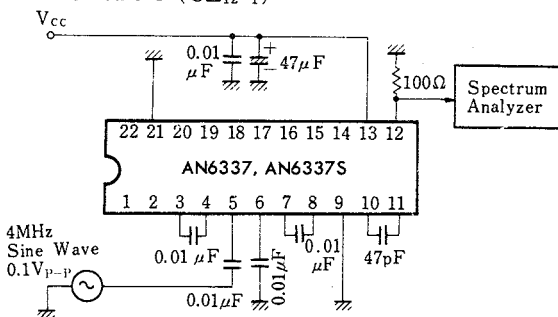
- $I_{13(1)}$: SW₁ → GND
- $I_{13(2)}$: SW₁ → V_{CC}

Test Circuit 2 (S_{12} , $f_{(lim)}$)



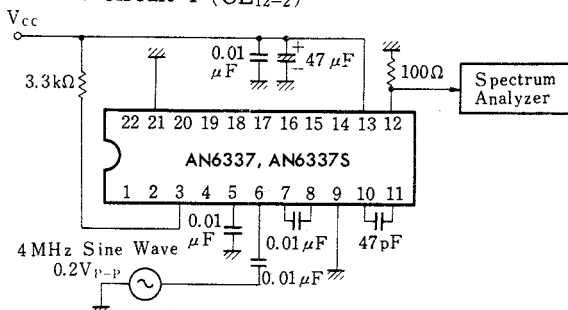
- S_{12} Pin[Ⓚ] output difference between Pin[Ⓚ] input of 3.5MHz and 4.5MHz
- $f_{(lim)}$ Pin[Ⓚ] input frequency at which Pin[Ⓚ] output is turned linear

Test Circuit 3 (CL_{12-1})



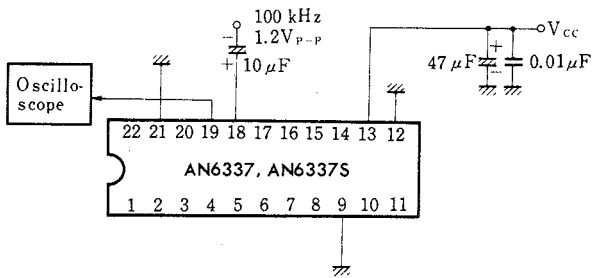
- CL_{12-1} : 4MHz component to 8MHz at Pin[Ⓚ]

Test Circuit 4 (CL_{12-2})



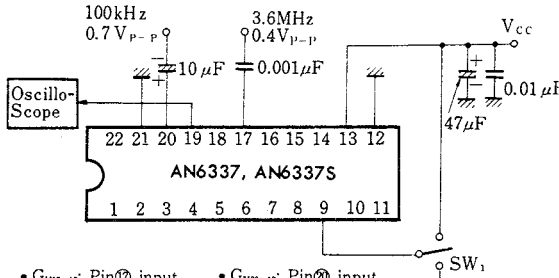
- CL_{12-2} : Measure a 4MHz component to 8MHz.

Test Circuit 5 (G_{V18-19})



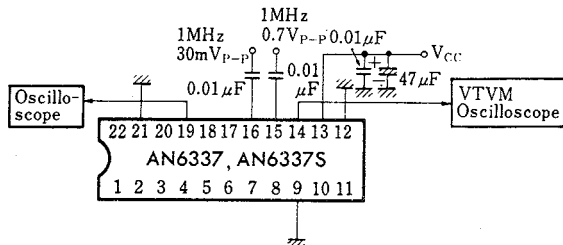
- G_{V18-19} : Pin[Ⓚ] input $f=100\text{kHz}$, 1.2V_{p-p}

Test Circuit 6 (G_{V17-19} , G_{V20-19})



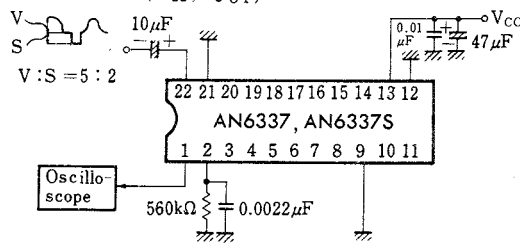
- G_{V17-19} : Pin[Ⓚ] input $f=3.6\text{MHz}$, 0.4V_{p-p}
- G_{V20-19} : Pin[Ⓚ] input $f=100\text{kHz}$, 0.7V_{p-p} (SW₁ → V_{CC})

Test Circuit 7 (G_{V15-19} , G_{V16-14} , v_{O14})



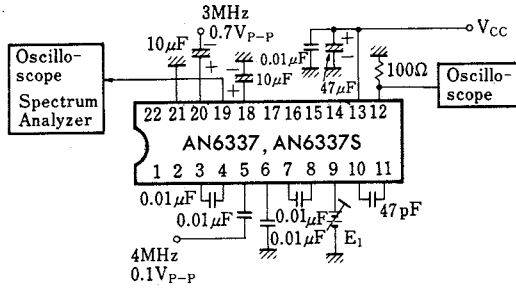
- G_{V15-19} : Pin[Ⓚ] input $f=1\text{MHz}$, 0.7V_{p-p}
- G_{V16-14} : Pin[Ⓚ] input $f=1\text{MHz}$, 30mV_{p-p}
- v_{O14} : Pin[Ⓚ] input $f=1\text{MHz}$, 0.7V_{p-p}

Test Circuit 8 (S_{22} , v_{O1})



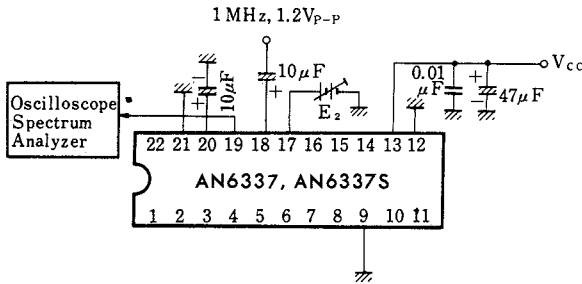
- S_{22} Space Lowest input level (Pin[Ⓚ]) at which V-Sync. can be separated with Pin[Ⓚ] output
- v_{O1} Space Input a video signal of 1.2V_{p-p} to the Pin[Ⓚ].

Test Circuit 9 (S₉₋₁, S₉₋₂, CT₁₉₋₁)



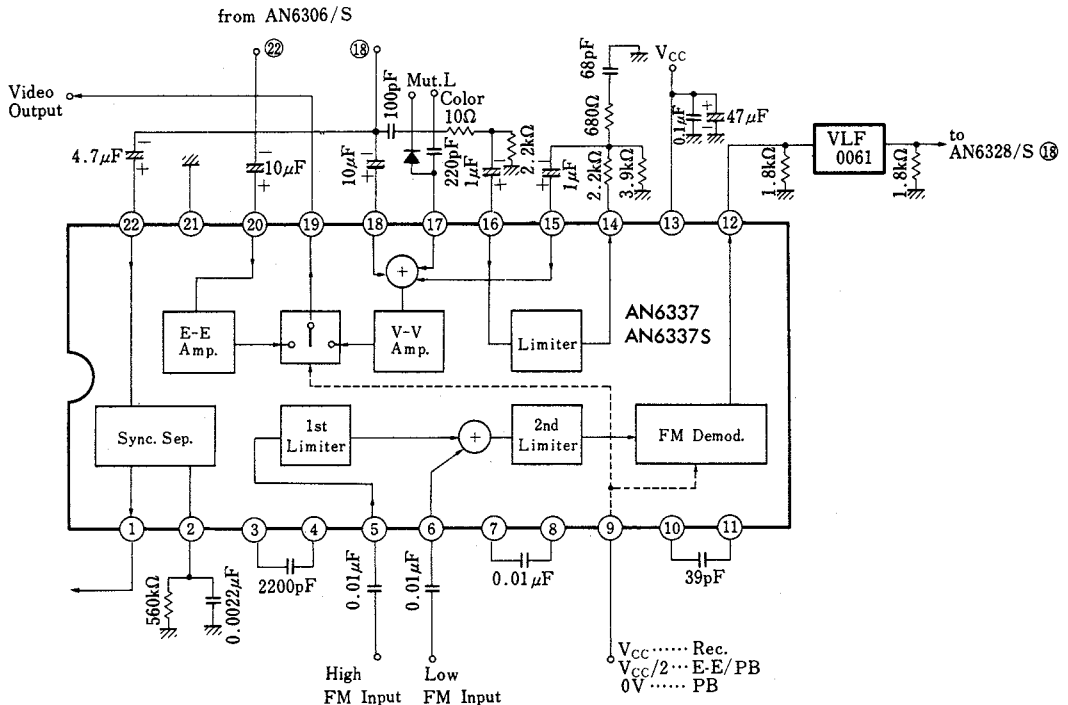
- S₉₋₁: Pin⑨ voltage when Pin⑫ output goes off
- S₉₋₂: Pin⑨ voltage range when a signal is output to the Pins⑫ and ⑬
- CT₁₉₋₁: Pin⑫ output level when Pin⑨ is GND

Test Circuit 10 (S₁₇, CT₁₉₋₂)



- S₁₇: Pin⑬ voltage when Pin⑫ output goes off
- CT₁₉₋₂: Pin⑫ output level when the Pin⑬ is GND

■ Application Circuit



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