

AN6337, AN6337S

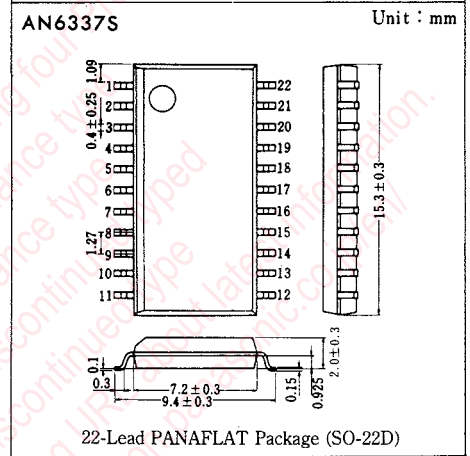
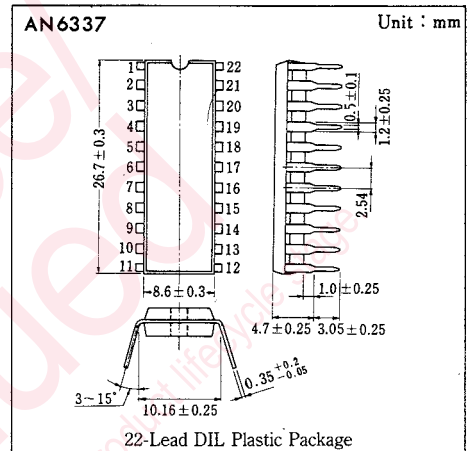
VTR Playback Video Signal Processing Circuits

■ Outline

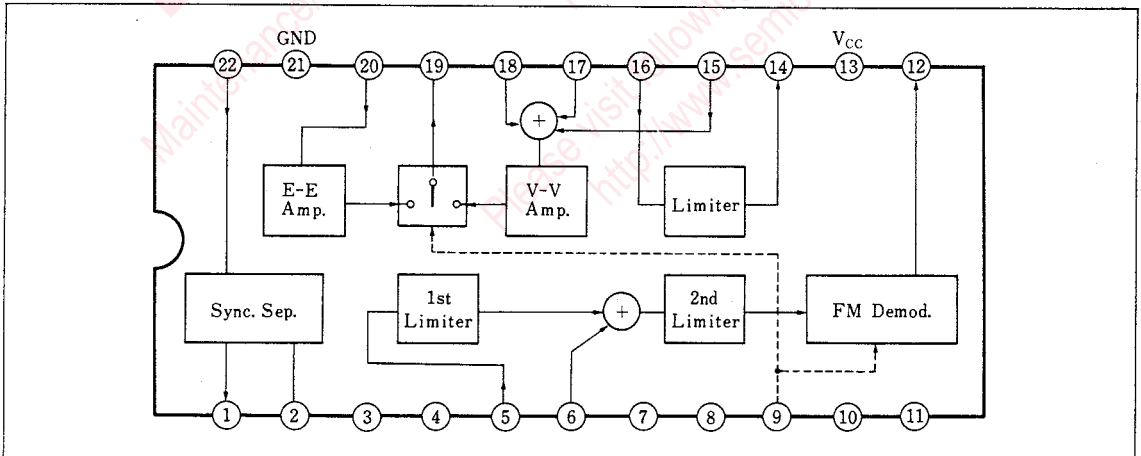
The AN6337 and the AN6337S are integrated circuits designed for VTR's playback video signal processing.

■ 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	

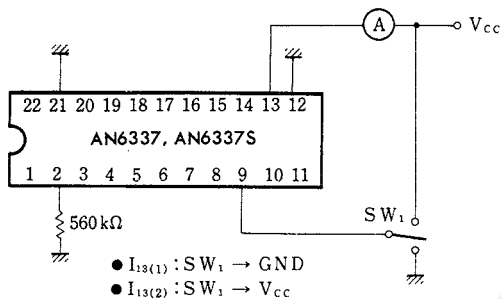
* Indicates a package capability.

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

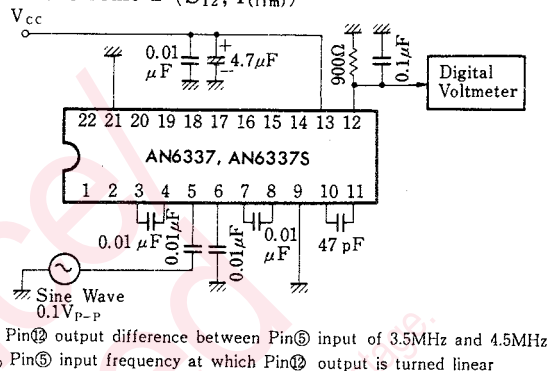
Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Circuit current (1)	I ₁₃₍₁₎	1	Pin⑩GND(V-V mode)	35		65	mA
Circuit current (2)	I ₁₃₍₂₎	1	Pin⑩V _{cc} (E-E mode)	20		40	mA
Demodulator detection sensitivity	S ₁₂	2	C=47pF, R ₁₂ =900Ω, f=3.5~4.5MHz	80		140	mV/MHz
Demodulator detection limit	f _(lim)	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 canceller mix amp. gain	G _{V15-18}	7	1MHz, 0.7V _{P-P} , Input	-10.8		-7.2	dB
Noise canceller amp. gain	G _{G16-14}	7	1MHz, 30mV _{P-P} , Input	18.2		21.8	dB
Noise canceller amp. output amplitude	v _{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	v _{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

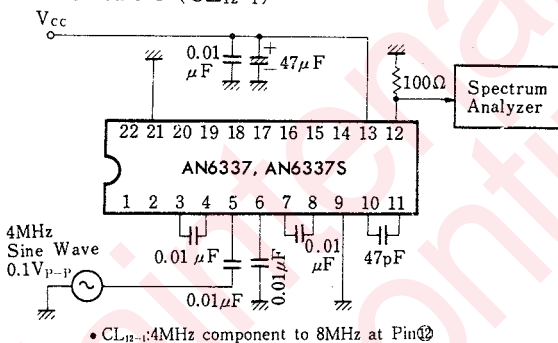
Test Circuit 1 ($I_{13(1)}$, $I_{13(2)}$)



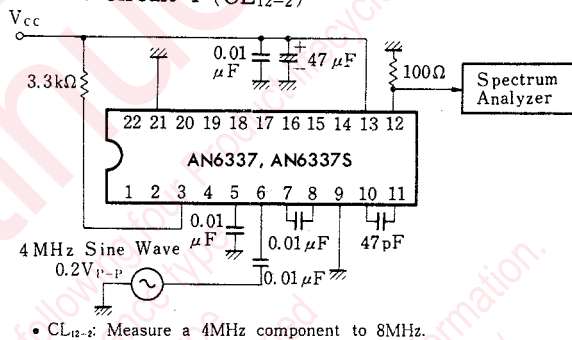
Test Circuit 2 (S_{12} , $f_{(lim)}$)



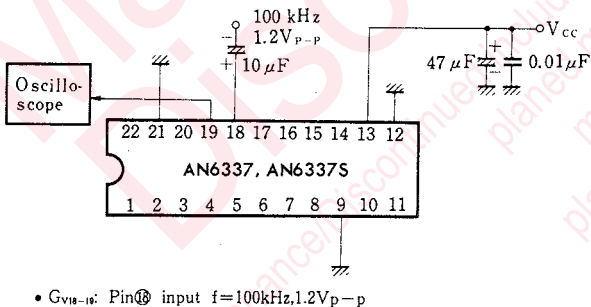
Test Circuit 3 (CL_{12-1})



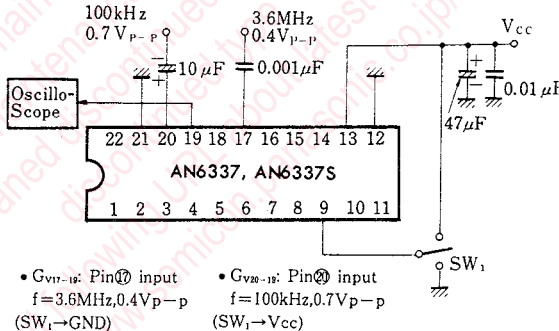
Test Circuit 4 (CL_{12-2})



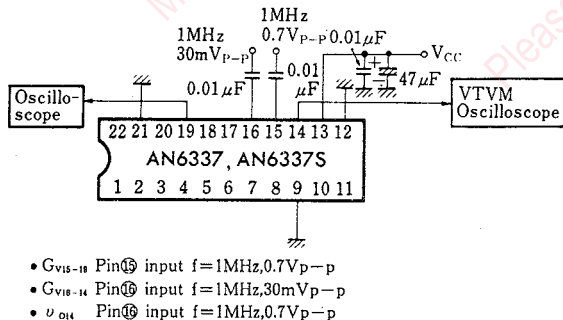
Test Circuit 5 (G_{V18-19})



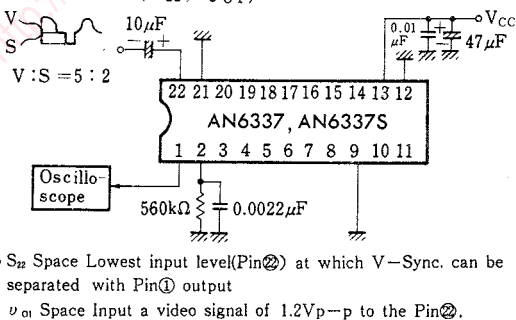
Test Circuit 6 (G_{V17-19} , G_{V20-19})



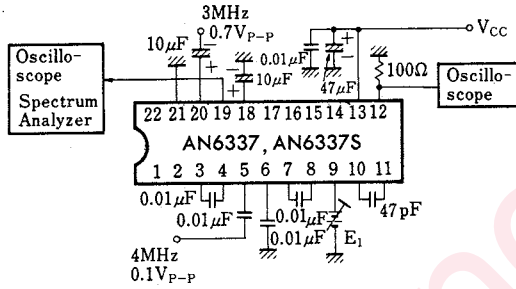
Test Circuit 7 (G_{V15-19} , G_{V16-14} , v_{O14})



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

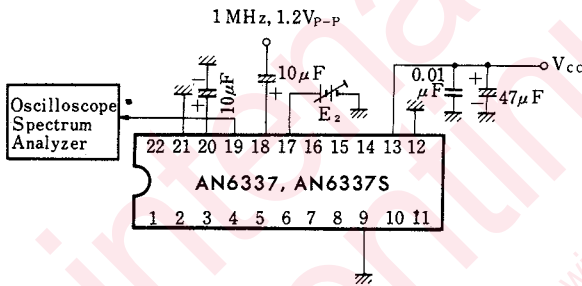


Test Circuit 9 (S₉₋₁, S₉₋₂, CT₁₉₋₁)



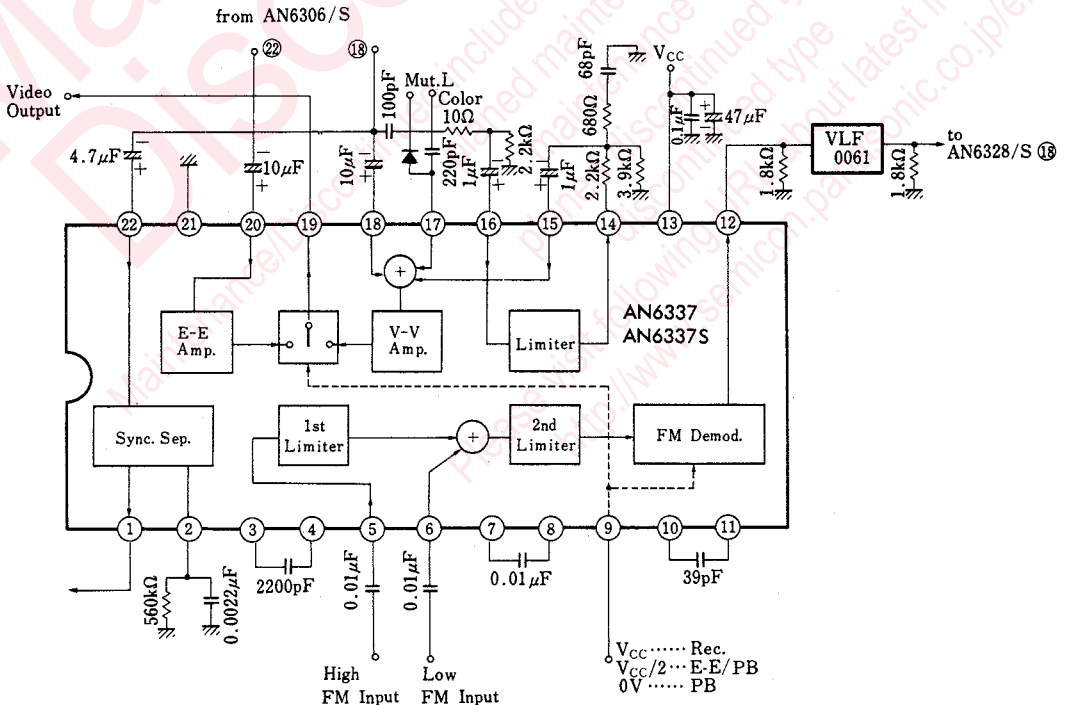
- S₉₋₁: Pin[®] voltage when Pin[®] output goes off
- S₉₋₂: Pin[®] voltage range when a signal is output to the Pins[®] and [®]
- CT₁₉₋₁: Pin[®] output level when Pin[®] is GND

Test Circuit 10 (S₁₇, CT₁₉₋₂)



- S₁₇: Pin[®] voltage when Pin[®] output goes off
- CT₁₉₋₂: Pin[®] output level when the Pin[®] is GND

■ Application Circuit



Request for your special attention and precautions in using the technical information and semiconductors described in this book

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products. No license is granted in and to any intellectual property right or other right owned by Panasonic Corporation or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).
Consult our sales staff in advance for information on the following applications:
 - Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
 - Any applications other than the standard applications intended.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
 - Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of our company.