AN3125

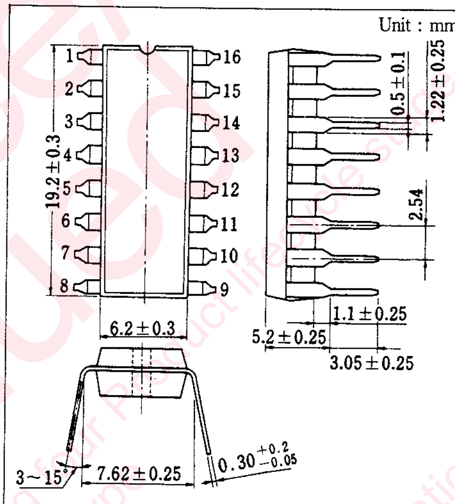
RF Converter Circuit

■ Outline

The AN3125 is an integrated circuit designed for VHF band RF converter.

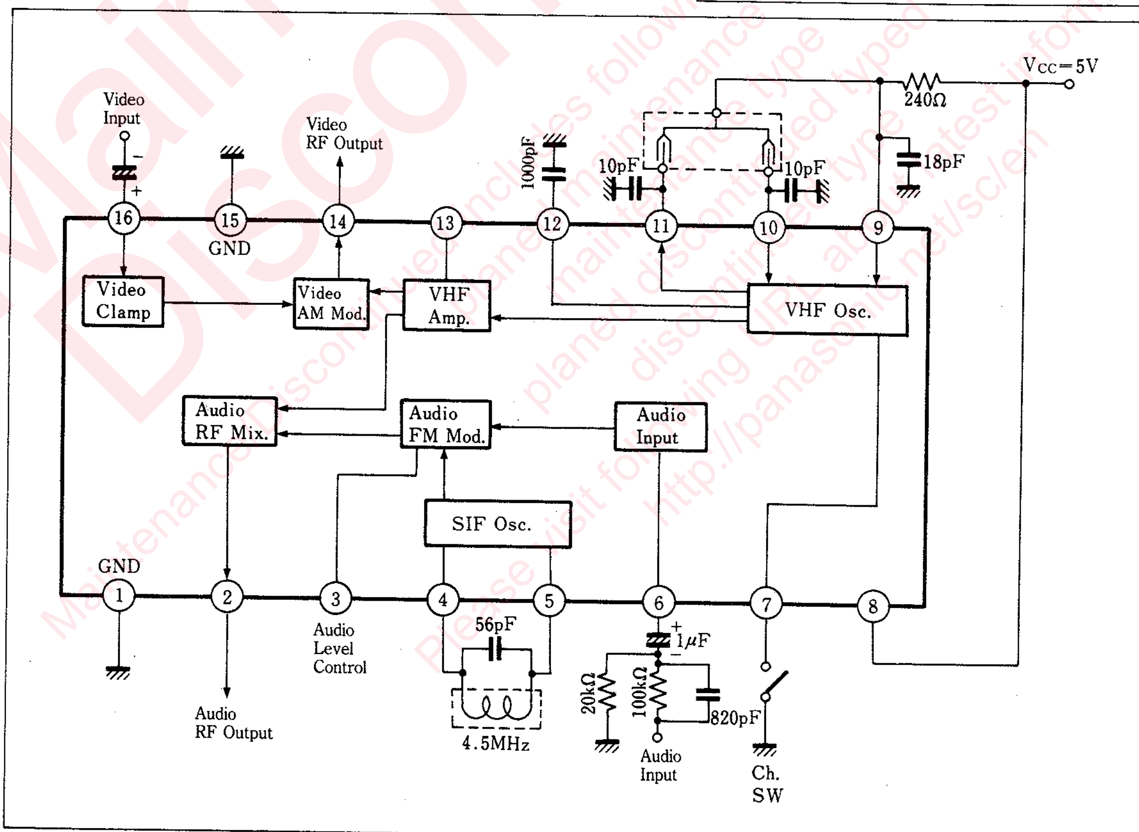
■ Features

- Audio output power increases rapidly.
- Few parts required.
- Incorporates a voltage regulator.



16-Lead DIL Plastic Package (b)

■ Block Diagram



■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	GND	9	VHF Osc. Collector
2	Audio RF Output	10	VHF Osc. Base (1)
3	Audio Level Control	11	VHF Osc. Base (2)
4	SIF Osc. (1)	12	VHF Osc. Emitter
5	SIF Osc. (2)	13	VHF Amp. By-pass
6	Audio Input	14	Video RF Output
7	Ch. SW.	15	GND
8	Vcc	16	Video Input

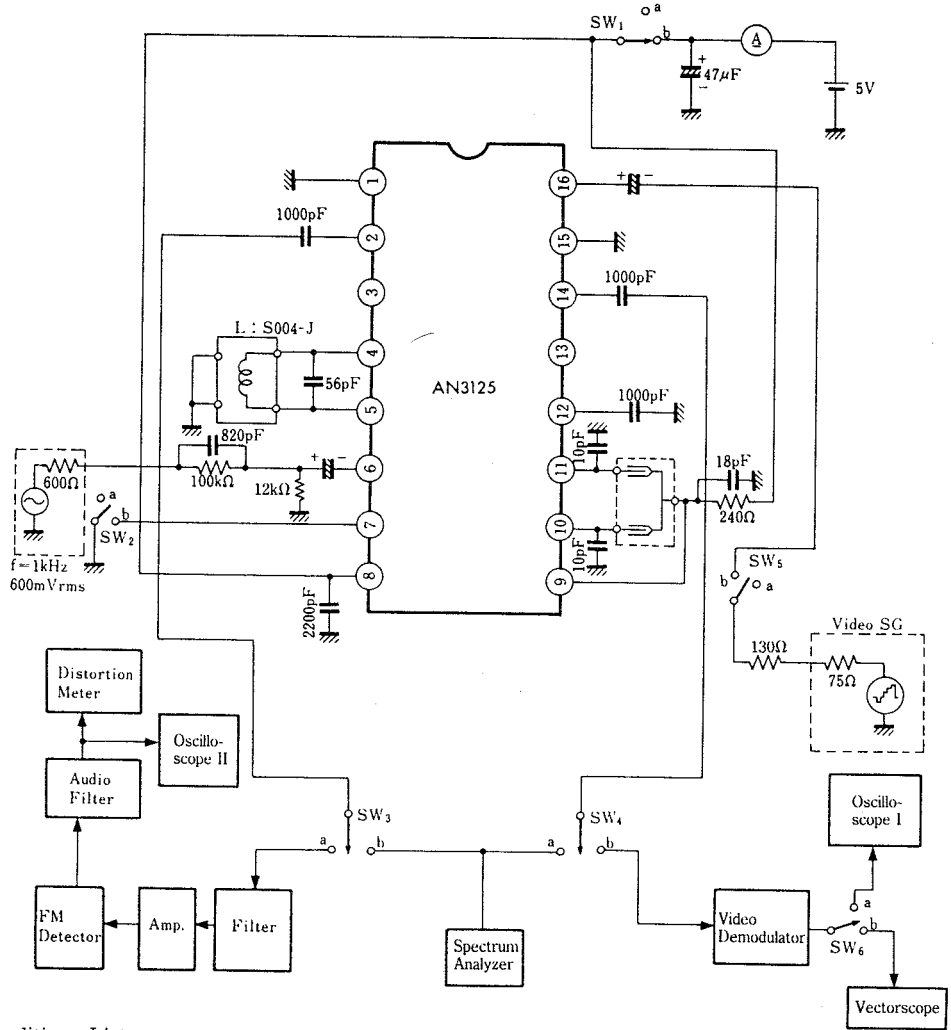
■ Absolute Maximum Ratings (Ta=25℃)

Item	Symbol	Rating	Unit
Supply voltage	V_{CC}	6	V
Supply current	I_{CC}	42	mA
Power dissipation	P_D	250	mW
Operating ambient temperature	T_{opr}	−20~+75	℃
Storage temperature	T_{stg}	−55~+150	℃

■ Electrical Characteristics (Ta=25℃)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Supply current	I_{CC}	1		16	21	27	mA
Video carrier wave output level	V_P	1		84	86	88	dBμ
Max. video modulation degree	$m_{max.}$	1		90	95		%
Video modulation degree	m	1	$V_{in}=0.6V_{P-P}$	63		83	%
Sync. distortion	Sync	1		−8.5		+4	%
Differential gain	DG	1	m=75%	−5		+5	%
Differential phase	DP	1	m=75%	−5		+5	deg
Video modulation degree inter-channel difference	Δm	1		−3		+3	%
Sound sub-carrier wave output level	V_S	1	Pin③ Open	82.5		86.5	dBμ
Sound FM modulation sensitivity	Δf_{FM}	1	$A_{in}=600mV_{rms}$, 1kHz	±17.5	±22.5	±32.5	kHz
Sound S/N ratio	SN_S	1		55			dB

Test Circuit 1



Measuring Conditions List

Item	Switch Operation						Measuring Instrument
	SW1	SW2	SW3	SW4	SW5	SW6	
I_{CC}	b	a/b	–	–	–	–	DC ammeter
V_P	b	b	a	a	b	–	Spectrum analyzer
$m_{max.}$	b	b	a	a	b	–	Spectrum analyzer
m	b	b	a	a	b	–	Spectrum analyzer
Sync	b	b	–	b	b	a	Oscilloscope I
DG	b	b	–	b	b	b	Vectorscope
DP	b	b	–	b	b	b	Vectorscope
Δm	b	a/b	a	a	b	–	Spectrum analyzer
V_S	b	b	b	a	a	–	Spectrum analyzer
Δf_{FM}	b	b	a	–	a	–	FM linear detector
SN_S	b	b	a	–	–	–	Oscilloscope II

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