

AN5436N

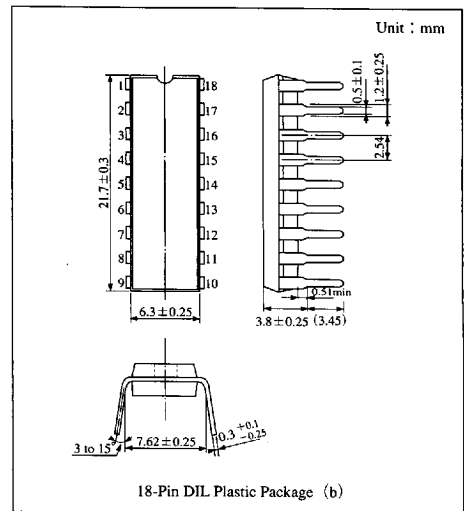
Color TV Deflection-Signal Processing IC

Overview

The AN5436N is an integrated circuit designed for color TV deflection-signal processing circuit. It can operate with 12V power supply and is suitable for compact and mediumsize color TV set.

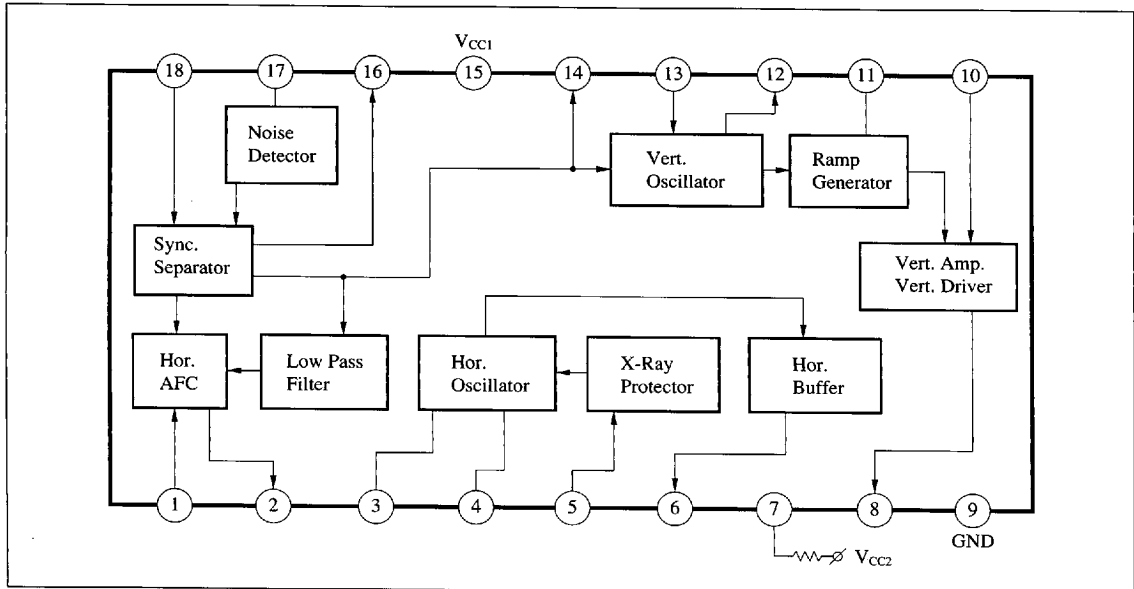
Features

- Built-in vertical deflection driver circuit
- Incorporating vertical and horizontal oscillator circuit, it operates with high stability against changes of supply voltage and temperature
- Highly stable synchronous separation circuit against noise
- Built-in high voltage-protection circuit (X-ray protection)
- 12V supply voltage operation



ICs for TV

Block Diagram



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Pin Descriptions

Pin No.	Pin name	Pin No.	Pin name
1	AFC ref. signal input	10	DC, AC feedback input
2	Hor. AFC output	11	Vert. saw-tooth capacitor
3	Hor. hold volume	12	Vert. pulse output
4	Hor. osc. capacitor	13	Vert. hold volume
5	X-ray protector input	14	Vert. integral capacitor
6	Hor. output	15	V _{CC1}
7	V _{CC2}	16	Sync. sep. output
8	Vert. output	17	Noise det. input
9	GND	18	Video signal input

Absolute Maximum Ratings (T_a = 25°C)

Parameter		Symbol	Rating		Unit
Voltage	Supply voltage	V ₇₋₉	10.5		V
		V ₁₅₋₉	14.4		V
	Circuit voltage	V ₁₋₉	0	10	V
		V ₁₀₋₉	0	V ₁₅₋₉	V
		V ₁₂₋₉	0	10	V
		V ₁₇₋₉	0	6	V
		V ₁₈₋₉	-3	2	V
Current	Supply current	I ₇	16		mA
		I ₁₅	23		mA
	Circuit current	I ₂	-3	3	mA
		I ₃	-5	0	mA
		I ₄	-3	3	mA
		I ₅	-1	1	mA
		I ₆	-30	0	mA
		I ₈	-30	0	mA
		I ₁₂	-2	1	mA
		I ₁₃	0	30	mA
Power dissipation		P _D	500		mW
Temperature	Operating ambient temperature	T _{opr}	-20 to +70		°C
	Storage temperature	T _{stg}	-55 to +150		°C

Note) "+" and "-" are flow-in and flow-out currents to/from the circuit, respectively.

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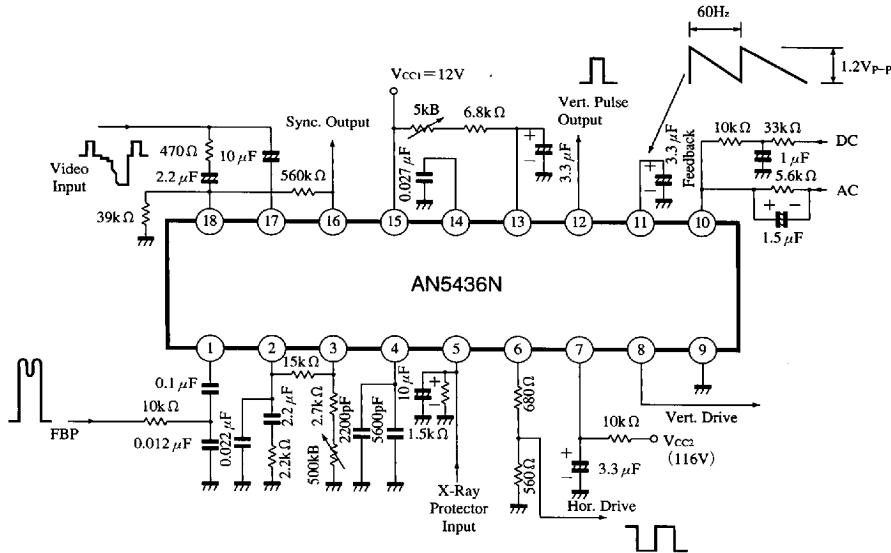
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Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	min	typ	max	Unit
Circuit current	I ₇	Apply 12V with 200 to Pin⑦	7.5	12.0	15.5	mA
Circuit current	I ₁₅	V ₁₅₋₉ =12V	18.0	25.0	33.0	mA
Protector operating voltage	V ₅₋₉	Apply 12V with 200 to Pin⑦	0.73	—	0.86	V
Oscillation starting voltage (V · O _{SC})	V _{OSC-S(1)}	f _{VO} =40 to 60Hz, 0.7V _{P-P} or more	—	—	6	V
Vertical oscillation frequency	f _{VO}	V _{CC1} =12V, R _{OSC(V)} =9.5kΩ	47	50	53	Hz
f _{VO} supply voltage dependency	Δf _V /Ta	f _{VO} 9.6V to f _{VO} 14.4V	0	1.0	1.3	Hz
Pulse Width (V · O _{SC})	τ	V _{CC1} =12V, R _{OSC(V)} =9.5kΩ	420	600	780	μs
Vertical pull-in range	f _{VP}	V _{CC1} =12V, R _{OSC(V)} =9.5kΩ	—	43	47	Hz
Vertical saw-tooth wave amplitude	v _(saw)	V _{CC1} =12V, R _{OSC(V)} =9.5kΩ	0.9	1.2	1.5	V _{P-P}
f _{VO} ambient temperature dependency *	Δf _V /Ta	Ta=-20 to +70°C	—	0.8	—	Hz/°C
v _(saw) ambient temperature dependency *	Δv _(saw) /Ta	Ta=-20 to +70°C	—	—	30	mV _{P-P} /°C
Oscillation-starting voltage	V _{OSC-S(2)}	f _{HO} =10 to 20kHz, 1V _{P-P} or more	—	—	6	V
Horizontal oscillation frequency	f _{HO}	V _{CC2} =12V, R _{OSC(H)} =2.95kΩ	15.0	15.75	16.25	kHz
f _{HO} supply voltage dependency	Δf _{HO} /V _{CC}	f _{HO} 9.6V to f _{HO} 14.4V	0	100	200	Hz
Pulse width duty ratio (H · O _{SC})	τ	V _{CC2} =12V	31.5	35.4	38.9	%
f _{HO} control sensitivity	β	I _O =±100μA	19	21	23	Hz/μA
f _{HO} ambient temperature dependency *	Δf _{HO} /Ta	Ta=-20 to +70°C	-1.67	—	1.67	Hz/°C
AFC loop gain *	f _{AFC}	μ × β	6	8	10	kHz/tra

* Reference value for design

Application Circuit



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