

AN5421N

TV Synchronous Signal Detection IC

Overview

The AN5421N is an integrated circuit designed for TV synchronous signal detection circuit.

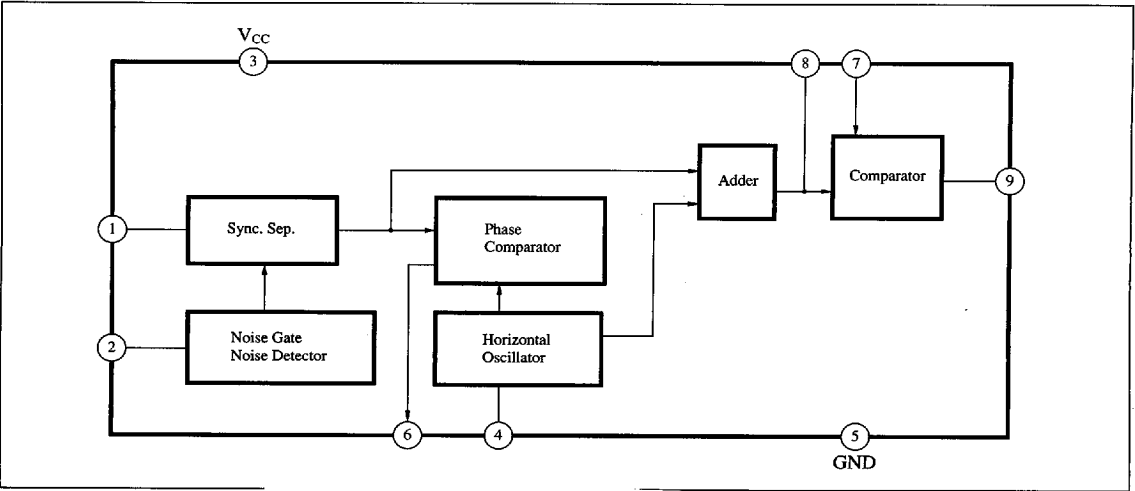
Features

- Signal detection circuit providing stable operation against changes in supply voltage and temperature built-in
- Signal separating circuit providing stable operation against noise built-in

Pin Descriptions

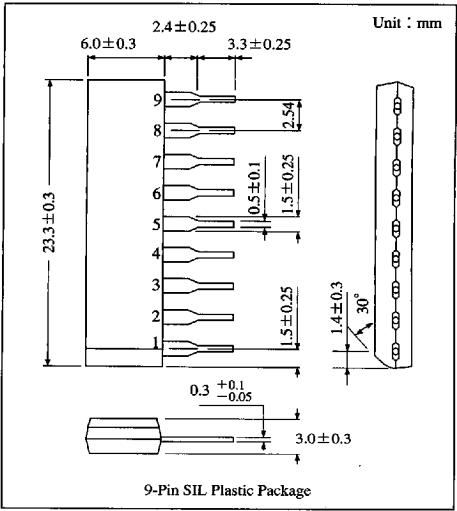
Pin No.	Pin name
1	Video input
2	Noise gate input
3	V _{CC}
4	Hor. Osc. CR
5	GND
6	Hor. AFC output
7	Comp. voltage input
8	Integral capacitor
9	Sync. Det. output

Block Diagram



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■ Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Rating		Unit
Voltage	Supply voltage	V _{3.5}	14.4		V
	Circuit voltage	V _{7.5}	0	V _{3.5}	V
		V _{8.5}	0	V _{3.5}	V
		V _{9.5}	0	V _{3.5}	V
Current	Supply current	I ₃	35		mA
	Circuit current	I ₁	−3	0	mA
		I ₂	−1	3	mA
		I ₄	0	5	mA
		I ₆	−3	3	mA
		I ₇	0	1	mA
		I ₈	−15	1	mA
		I ₉	0	10	mA
Power dissipation (Ta=70℃)		P _D	510		mW
Temperature	Operating ambient temperature	T _{opr}	−20 to +70		℃
	Storage temperature	T _{stg}	−55 to +150		℃

ICs for
TV

■ Electrical Characteristics (Ta=25℃)

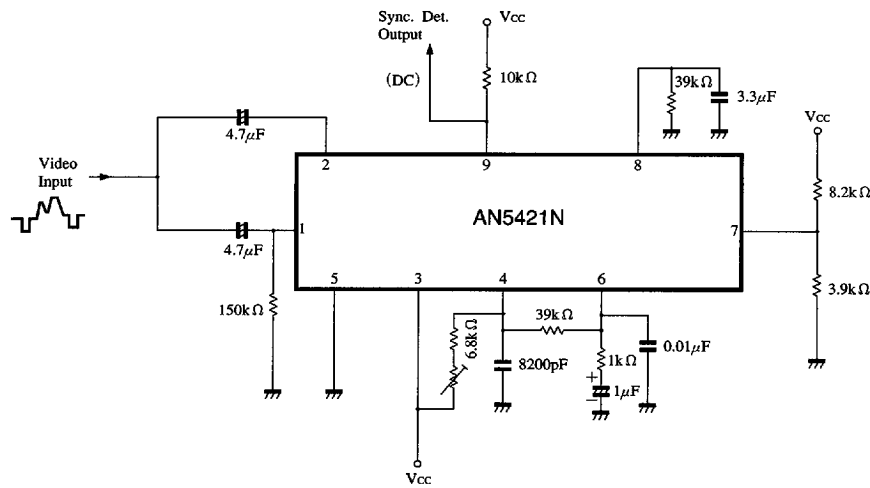
Parameter	Symbol	Condition	min	typ	max	Unit
Circuit current	I ₃	V _{CC} =12V	17	24	31	mA
Circuit voltage	V ₁₋₅	V _{CC} =12V	6.2	6.6	7.0	V
	V ₂₋₅		5.8	6.2	6.6	V
	V ₈₋₅		10.1	10.5	10.9	V
Noise detector (1)	V ₈₋₅₍₁₎	V _{CC} =12V	9.8	10.4	11.0	V
Noise detector (2)	V ₈₋₅₍₂₎		—	—	0.2	V
Video signal discrimination (1)	V ₈₋₅	V _{CC} =12V	—	—	0.2	V
Video signal discrimination (2)	V ₈₋₅		—	—	0.2	V
Video signal discrimination (3)	V ₈₋₅		—	—	0.2	V
Video signal discrimination (4)	V ₈₋₅		9.8	10.4	11.0	V
Horizontal oscillation frequency	f _{HO}	V _{CC} =12V	14.9	15.6	16.3	kHz
f _{HO} supply voltage dependency	Δf _{HO} /V _{CC}	f _{HO} difference between at V _{CC} =6V and at V _{CC} =14.4V	—	45	65	Hz/V
f _{HO} cotrol sensitivity	β	f _{HO} difference at flow-in of I ₀ =±100μA	23.0	25.5	28.0	Hz/μA
Video signal discriminative video input *	V _{i(min.)}	Video input for V ₈ ≤0.2V	—	—	0.2	V _{P-P}
f _{HO} ambient temperature dependency *	Δf _{HO} /T _a	V _{CC} =12V,T _a =-20℃ to +70℃	—	-3.5	—	Hz/℃
AFC loop gain *	f _{AFC}	μ · β	—	1.1	—	kHz/μs
Filter voltage (1) *	V ₈₍₁₎	Video input signal detected	—	—	0.2	V
Filter voltage (2) *	V ₈₍₂₎	Video input signal not detected	—	6.2	—	V
Horizontal sync pulse width *	τ _{sync.}	V _i =0.3V _{P-P}	—	8.0	—	μs
Horizontal oscillation pulse width *	τ _{HO}	V _{CC} =12V	—	3.2	—	μs

* Reference value for design

■ 6932852 0014320 T24 ■

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■ Application Circuit



■ 6932852 0014321 960 ■

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