



### 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 <sub>CC1</sub>
7	V <sub>CC2</sub>	16	Sync. sep. output
8	Vert. output	17	Noise det. input
9	GND	18	Video signal input

### Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

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

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

6932852 0014329 151

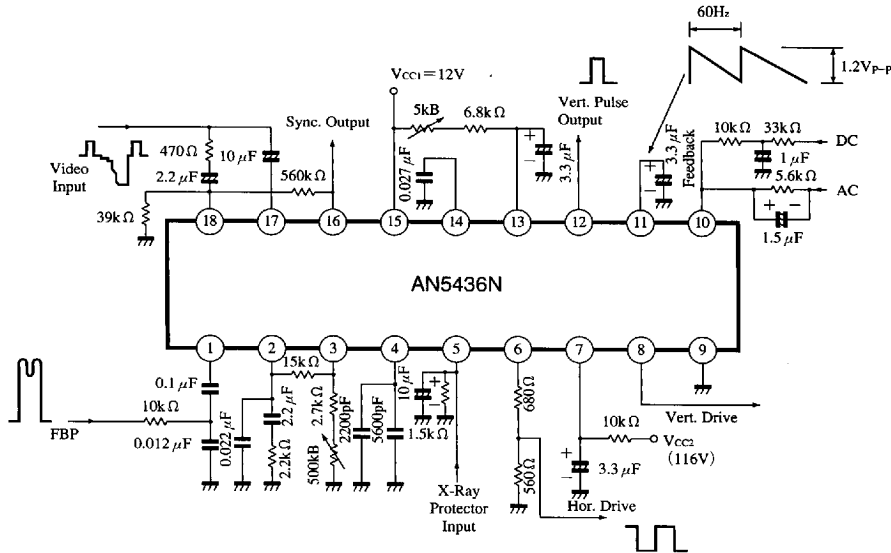
Panasonic

**Electrical Characteristics** (Ta=25°C)

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

\* Reference value for design

**Application Circuit**



6932852 0014330 973

Panasonic