

# AN5755

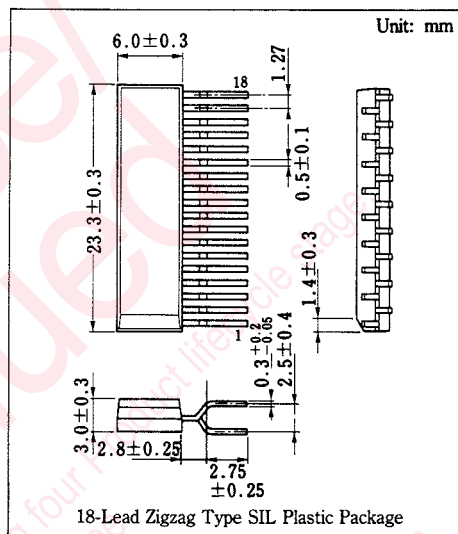
## Low Voltage TV Deflection Signal Processor Circuit

### Outline

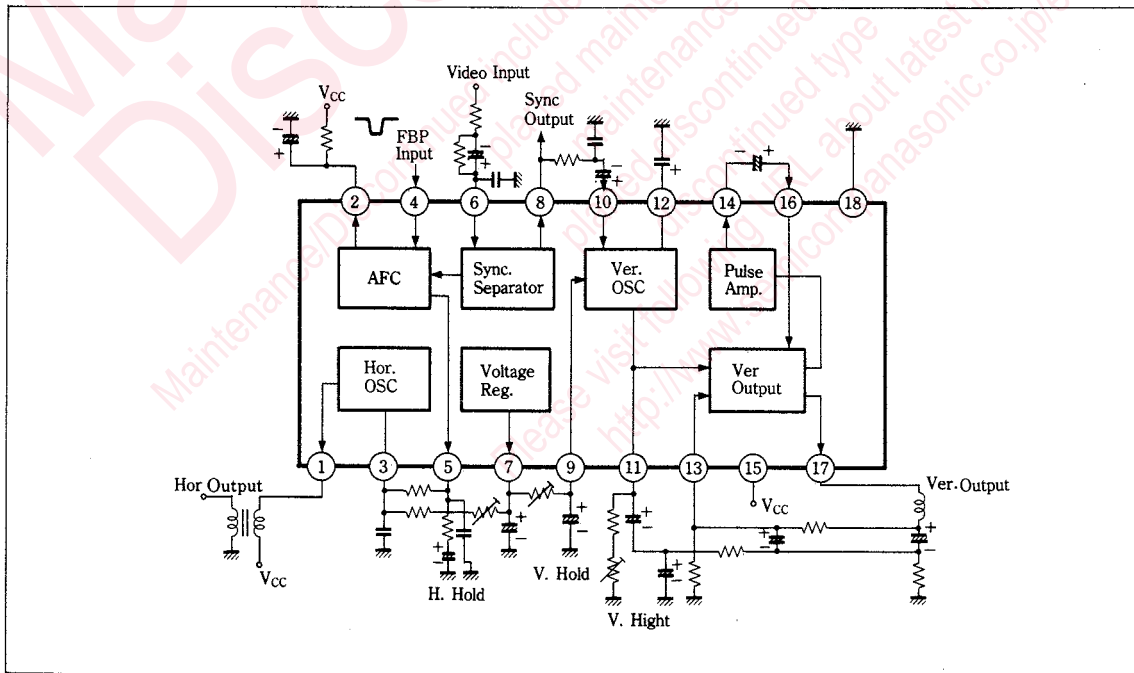
The AN5755 is an integrated circuit designed for low voltage deflection signal processing circuit.

### Features

- B/W tube: about 5 inches; color tube: about 3 inches
- Level switch type oscillator circuits are incorporated, giving economical circuitry with fewer external components.
- Oscillator circuit featuring highly stable operation against changes in temperature and supply voltage.
- Flyback pulse processing is highly efficient by pulse-up system.



### Block Diagram



## ■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	Hor. Drive Output	10	Sync. Input
2	Hor. Circuit Vcc	11	Height Adj.
3	Hor. Osc. CR	12	Decoupling
4	F. B. Pulse Input	13	Feedback
5	AFC Output	14	Blanking
6	Video Input	15	Vert. Circuit Vcc
7	Reference Voltage	16	Pulse Amp. Output
8	Hor. Sync. Sep. Out	17	Vert. Output
9	Vert. Osc. CR	18	GND

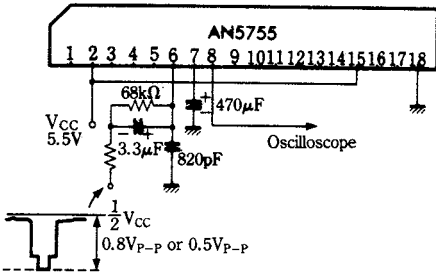
## ■ Absolute Maximum Ratings(Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	6.5	V
Supply Current	I <sub>2</sub> +I <sub>15</sub>	109	mA
Power Dissipation	P <sub>D</sub>	710	mW
Operating Ambient Temperature	T <sub>opr</sub>	-20~+70	°C
Storage Temperature	T <sub>stg</sub>	-40~+150	°C

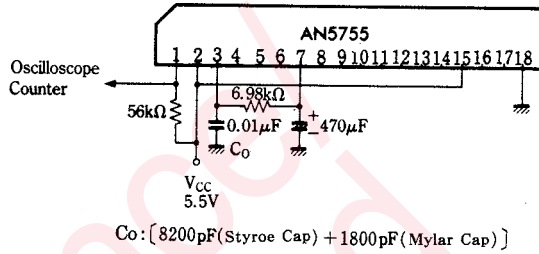
## ■ Electrical Characteristics(Ta=25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Sync. Sep. Pulse Width	τ(sync)	1	Video input signal 4.5μs APL50%, 0.8V <sub>P-P</sub>	4.3	4.6	4.9	μs
Sync. Sep. Pulse Width	τ(sync)	1	Video input signal 4.5μs APL50%, 0.8V <sub>P-P</sub>	4.5	4.8	5.1	μs
Sync. Sep. Amplitude	v(sync)	1	Video input signal 4.5μs APL50%	4			V
Oscillation Starting Voltage (H. Osc)	V <sub>OSC-S(1)</sub>	2	f <sub>HO</sub> =11kHz~21kHz	3			V
Oscillation Pulse Width(Duty)	τ <sub>HO(duty)</sub>	2	V <sub>CC</sub> =5.5V	23	28.5	33	%
Horizontal Oscillation Frequency	f <sub>HO</sub>	2	V <sub>CC</sub> =5.5V	15.0	15.75	16.5	kHz
Horizontal Oscillation Change with Supply Voltage	Δf <sub>HO</sub> /V <sub>CC</sub>	2	V <sub>CC</sub> =3.5V~6.5V			200	Hz
Horizontal Oscillation Change with Ambient Temperature	Δf <sub>HO</sub> /Ta	2	Ta=-20°C~60°C			150	Hz
Horizontal Oscillation Frequency Control Sensitivity	β	3	Δf <sub>O</sub> =±25μA	67	77	85	Hz/μA
DC Loop Gain	f <sub>DC</sub>		μ×β		440		Hz/μA
Oscillation Starting Voltage(V. Osc)	V <sub>OSC-(2)</sub>	4	It shall be within f <sub>VO</sub> =40~70Hz	3.0			V
Oscillation Starting Frequency	f <sub>VO</sub>	4	V <sub>CC</sub> =5.5V	47	50	53	Hz
Oscillation Starting Change with Supply Voltage	Δf <sub>VO</sub> /V <sub>CC</sub>	4	V <sub>CC</sub> =3.5V~6.5V		0.4	1.5	Hz
Oscillation Starting Change with Ambient Temperature	Δf <sub>VO</sub> /Ta	4	Ta=-20°C~60°C		2	3	Hz
Vertical Pulse	τ <sub>VO</sub>	5	V <sub>CC</sub> =5.5V, Sync. State	155	240	325	μs
Vertical Pull-in Range	f <sub>VP</sub>	5	V <sub>CC</sub> =5.5V, RH=40kΩ	18	20	25	Hz
Deflection Current(Peak Value)	I <sub>y(P-P)</sub>	6	V <sub>CC</sub> =5.5V, RH=40kΩ RH=51kΩ } Difference	290	325	360	mA <sub>P-P</sub>
Deflection Current Difference	ΔI <sub>y(P-P)</sub>	6	V <sub>CC</sub> =5.5V, RH=51Ω	50	65	80	mA <sub>P-P</sub>
Center Voltage	V <sub>MID</sub>	6	V <sub>CC</sub> =5.5V, RH=51Ω	2.4	2.7	3.0	V
Flyback Pulse Width	V <sub>(FBP)</sub>	6	V <sub>CC</sub> =5.5V, RH=51Ω	11.5			V
Blanking Pulse Width	τ <sub>(BLP)</sub>	—	V <sub>CC</sub> =5.5V, RH=51Ω	350	420	505	μs

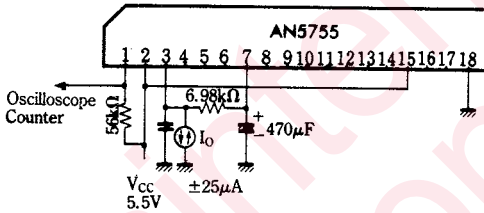
Test Circuit 1 ( $\tau_{sync}$ ,  $v_{sync}$ )



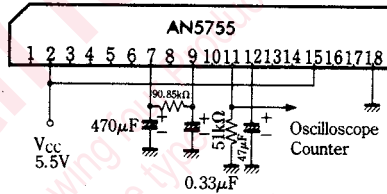
Test Circuit 2 ( $V_{OSC-S(1)}$ ,  $\tau_{HO(duty)}$ ,  $f_{HO}$ ,  $\Delta f_{HO}/V_{CC}$ ,  $\Delta f_{HO}/T_a$ )



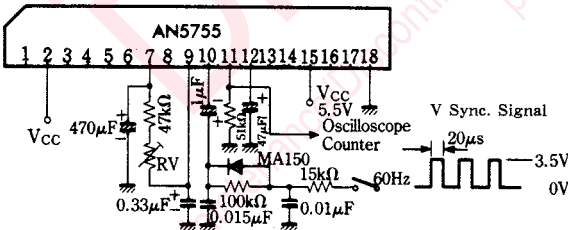
Test Circuit 3 ( $\beta$ )



Test Circuit 4 ( $V_{OSC-S(2)}$ ,  $f_{VO}$ ,  $\Delta f_{VO}/V_{CC}$ ,  $\Delta f_{VO}/T_a$ )



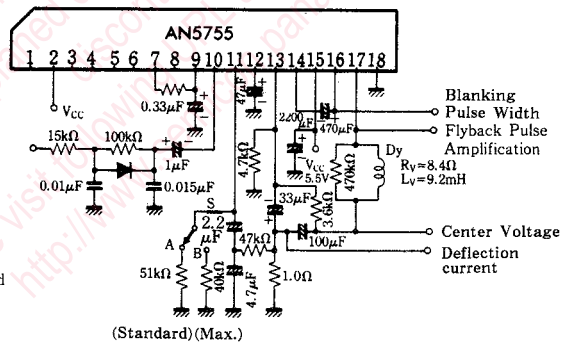
Test Circuit 5 ( $\tau_{VO}$ ,  $f_{VP}$ )



Set V sync. signal to ON, adjust frequency to the lowest level by using RV and then start making it larger gradually. When 60 Hz is pulled in, V sync. signal is set to OFF. Then, measure the free oscillation frequency  $f_{VL}$ . Measure Pull in frequency of high  $f_{VH}$  in the same way.

$$f_p(V) = f_{VH} - f_{VL}$$

Test Circuit 6 ( $I_{Y(P-P)}$ ,  $\Delta I_{Y(P-P)}$ ,  $V_{MID}$ ,  $V_{(FBP)}$ ,  $\tau_{(BLP)}$ )



V Sync. Signal

Amp. : 3.5Vp-p  
width: 20μs



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