

# AN5791

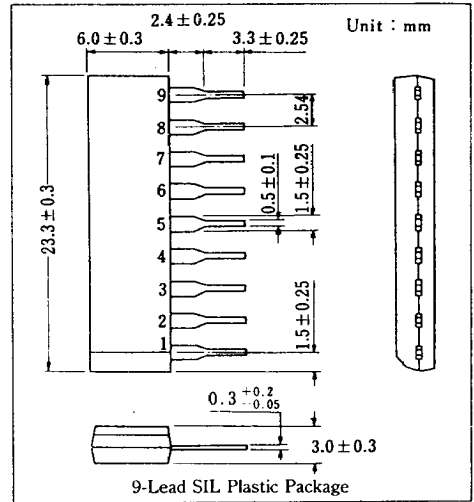
## Phase Shift Circuit for CRT Displays

### Outline

The AN5791 is an integrated circuit designed for phase shift circuit for CRT display.

### Features

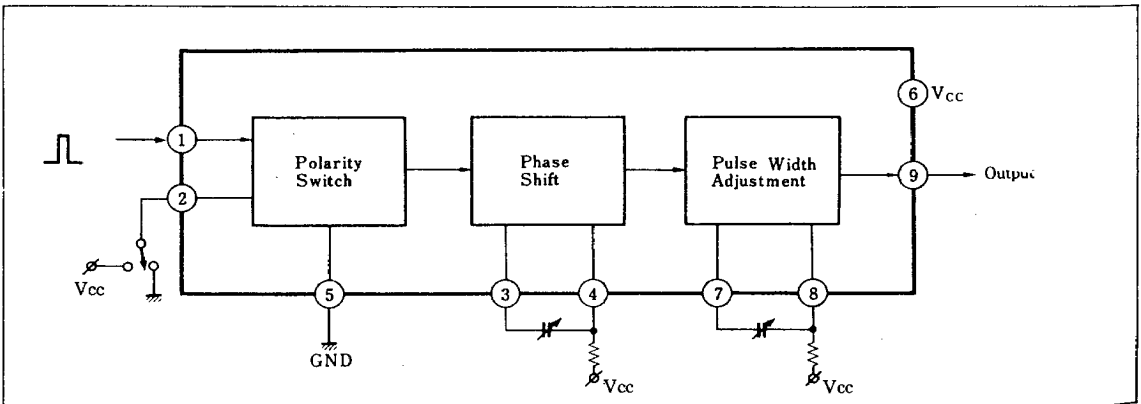
- Processing for both negative and positive sync. signals
- Wide range of possible phase shift ( $1\mu s \sim 40\mu s$ )
- Possible output pulse width  $2\mu s \sim 40\mu s$



### Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	H. Sync. Input	6	Vcc
2	Polarity Switch	7	Trigger for Pulse Width
3	Trigger for Phase Shift	8	Pulse Width Adj.
4	Phase Shift Adj.	9	Output
5	GND	-	-

### Block Diagram



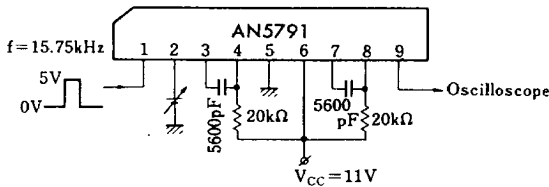
■ Absolute Maximum Ratings(Ta=25°C)

Item		Symbol	Rating	Unit
Supply Voltage		V <sub>CC</sub>	13.2	V
Power Dissipation		P <sub>D</sub>	640	mW
Temperature	Operating Ambient Temperature	T <sub>opr</sub>	-20~+70	°C
	Storage Temperature	T <sub>stg</sub>	-40~+150	°C

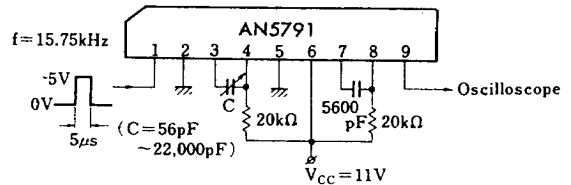
■ Electrical Characteristics(Ta=25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Circuit Current	I <sub>6</sub>		V <sub>CC</sub> =11V	18	25	32	mA
Circuit Voltage(1)	V <sub>3-5</sub>		V <sub>CC</sub> =11V	1.3	1.6	1.9	V
Circuit Voltage(2)	V <sub>7-5</sub>		V <sub>CC</sub> =11V	1.3	1.6	1.9	V
Polarity Changeover Voltage(1)	V <sub>2-5</sub>	1	Positive Polarity Signal Input	0		0.4	V
Polarity Changeover Voltage(2)	V <sub>2-5</sub>	1	Negative Polarity Signal Input	2.5		5.5	V
Phase Shift Time	t <sub>(1)</sub>	2	V <sub>CC</sub> =11V	4.5	5.0	5.5	μs
Enable Pulse Shift Time	t <sub>(2)</sub>	2	V <sub>CC</sub> =11V	1		40	μs
Change with Supply Voltage for Phase Modulation Time	Δt <sub>(1)</sub> /V <sub>CC</sub>	3	V <sub>CC</sub> =9.9V~12.1V			5	%
Change with Ambient Temperature for Phase Modulation Time	Δt <sub>(1)</sub> /Ta	3	V <sub>CC</sub> =11V, Ta=-20°C~60°C			5	%
Output Pulse Width	τ <sub>(HD1)</sub>	4	V <sub>CC</sub> =11V	4.4	4.9	5.4	μs
Enable Output Pulse Width	τ <sub>(HD2)</sub>	4	V <sub>CC</sub> =11V	2		40	μs
Change with Supply Voltage for Output Pulse Width	Δτ <sub>(HD1)</sub> /V <sub>CC</sub>	3	V <sub>CC</sub> =9.9V~12.1V			5	%
Change with Ambient Temperature for Output Pulse Width	Δτ <sub>(HD1)</sub> /Ta	3	V <sub>CC</sub> =11V, Ta=-20°C~60°C			5	%

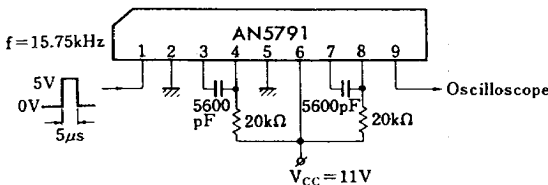
Test Circuit 1 (V<sub>2-5</sub>)



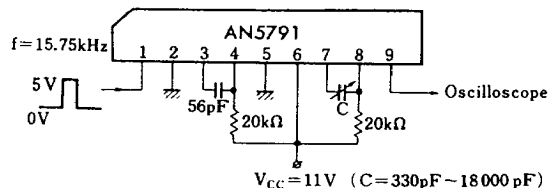
Test Circuit 2 (t<sub>(1)</sub>, t<sub>(2)</sub>)



Test Circuit 3 (Δt<sub>(1)</sub>/V<sub>CC</sub>, Δt<sub>(1)</sub>/Ta, Δτ<sub>(HD1)</sub>/V<sub>CC</sub>, Δτ<sub>(HD1)</sub>/Ta)



Test Circuit 4 (τ<sub>(HD1)</sub>, τ<sub>(HD2)</sub>)



■ Application Circuit

