

AN5440

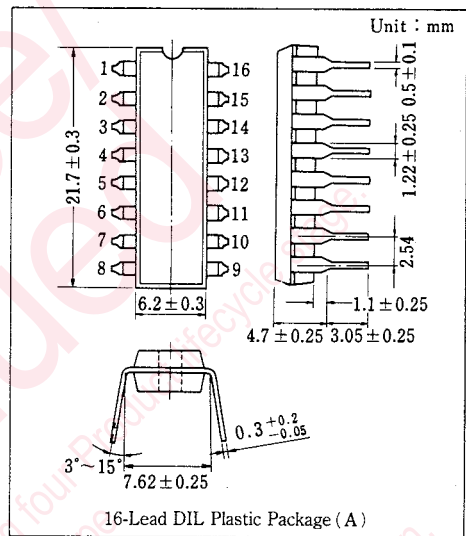
TV Deflection Signal Processing Circuit

Outline

The AN5440 is an integrated circuit designed for TV deflection signal processing circuit.

Features

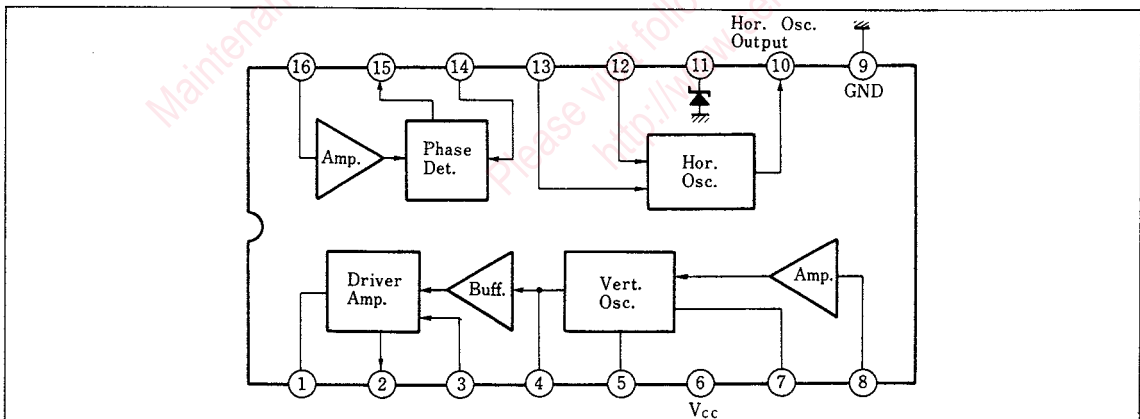
- Stable vertical and horizontal oscillation circuit against changes in supply voltage and temperature
- High voltage protection circuit incorporated
- Highly efficient vertical deflection signal generator incorporated



Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	Phase Compensation	9	GND
2	Vert. Output	10	Hor. Output
3	Feedback Terminal	11	V _{cc} (Hor.)
4	Vert. Osc. Timing	12	Hor. Osc. Timing
5	Vert. Osc. Timing	13	X-Ray Protection Input
6	V _{cc} (Vert.)	14	AFC Ref. Signal
7	Vert. Hold Volume	15	AFC Low Pass Filter
8	Vert. Sync. Output	16	Sync. Input

Block Diagram



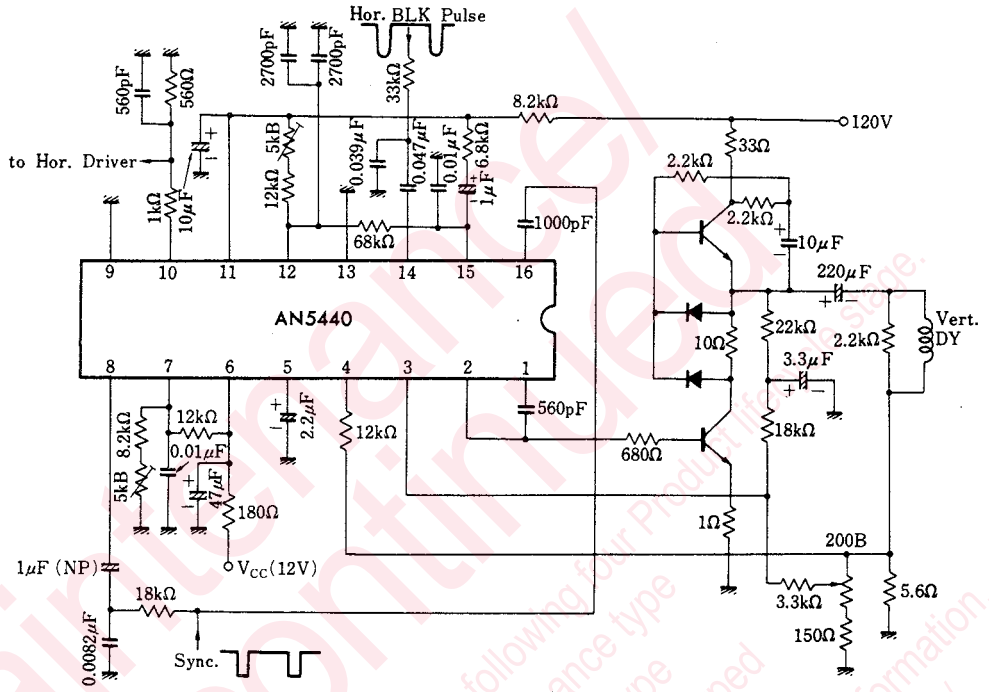
■ Absolute Maximum Rating (Ta=25°C)

Item		Symbol	Rating		Unit
Voltage	Supply Voltage	V ₆₋₉	14.4		V
	Circuit Voltage	V ₁₋₉ , V ₃₋₉	0	V ₆₋₉	V
		V ₁₄₋₉	0	+5	V
Current	Supply Current	I ₆	16		mA
		I ₁₁	20		mA
	Circuit Current	I ₂	-15	+1	mA
		I ₄	-5	0	mA
		I ₁₀	-15	0	mA
		I ₁₆	-1.5	+1	mA
Power Dissipation		P _D	500		mW
Temperature	Operating Ambient Temperature	T _{opr}	-20~+70		°C
	Storage Temperature	T _{stg}	-55~+150		°C

■ Electrical Characteristics (Ta=25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
(Horizontal)							
Regulate Voltage	V _{CC} ①	1	I _{CC} = 15mA	12.1	12.8	13.5	V
Pull-in Range	f _{HP}	3	f _{HP} = f - 15.734kHz	±450	±650		Hz
Oscillation Frequency	f _{HO}	1	R _{Hold} = 2 kΩ	14.734	15.734	16.734	kHz
AFC Loop Gain	f _{AFC}	3	f _C = f(3μ) - f(2μ)		610		Hz/μs
Phase Detection Sensitivity	μ	3	Obtain by f _c /β		18.3		μA/μs
f _{HO} Control Sensitivity	β	3			33.5		Hz/μA
Horizontal Output Pulse Width	t _{w(H)}	3	When f _{HO} = 15.734kHz	20.0	22.5	25.0	μs
Oscillation Frequency	Temperature Characteristics	Δf _{HO} /Ta	1	IC unit only		-3	Hz/°C
	Supply Voltage Stability	Δf _{HO} /V _{CC}	1	V ₁₁₋₉ variation for -10%		±100	Hz
	Initial Variation	Δf _{HO} /WD	1	After SW on, t = 5 sec~20min		±100	Hz
Horizontal Output Voltage	V _{OH}	3	Peak DC Voltage	4.4	5.0	5.6	V
(Vertical)							
Oscillation Frequency	f _{VO}	2	R _{Hold} = 2.9 kΩ	55	60	65	Hz
Pull-in Range	f _{VP}	3			-10	-7.5	Hz
Oscillation Frequency	Temperature Characteristics	Δf _{VO} /Ta	2	IC unit only		±1.2	Hz
	Supply Voltage Stability	Δf _{VO} /V _{CC}	2	Δf _{VO} /V _{CC} = f _{VO} _{14.4V} - f _{VO} _{9.6V}		±2	Hz
	Initial Variation	Δf _{VO} /WD	2	After SW on, t = 5 sec~20min		±1	Hz
K Terminal output Voltage	V _K	3		3.8	4.0	4.2	V
Vertical Oscillation Pulse Width	t _{w(V)}	3		455	650	845	μs
Vertical Oscillation Starting Voltage	V _{OSC-S(V)}	2				7.0	V

■ Application Circuit



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