HA11441/MP

Synchronous Processor

Functions

- Horizontal AFC
- Horizontal oscillator
- Sync separator
- Vertical oscillator
- Vertical driver

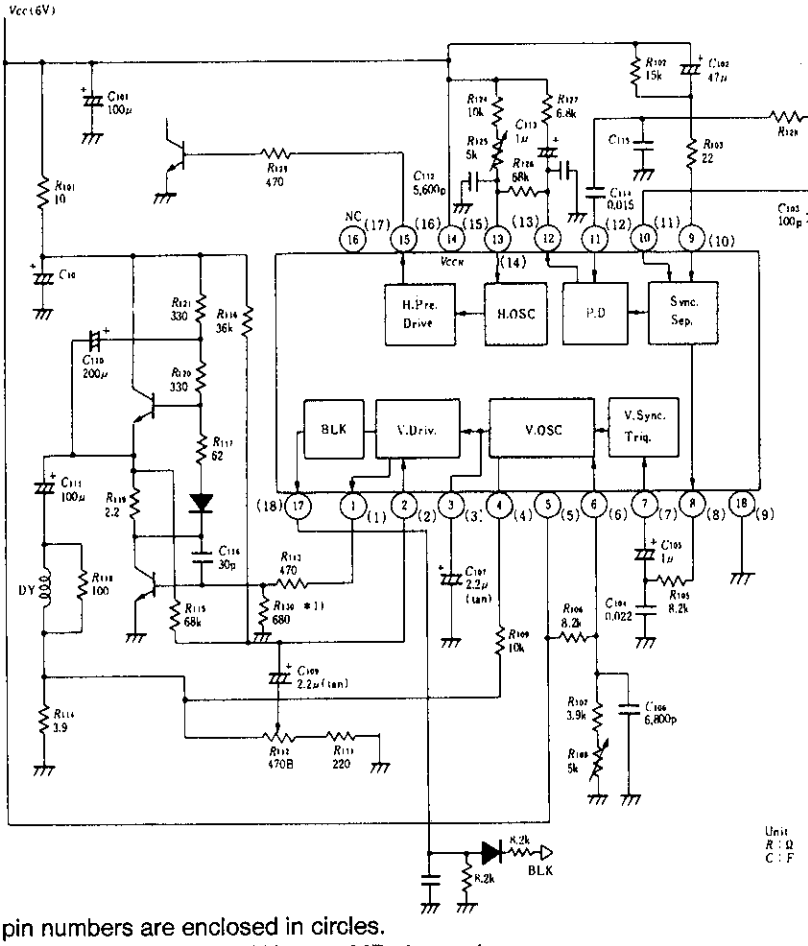
Ordering Information

Type No.	Package
HA11441	300 mil 18 pin plastic DIP (DP-16-2)
HA11441MP	18 pin plastic QFI (MP-18)

Features

- Operates at low voltages, 3.5–7 V
- Emitter time constant sync separator
- Vertical blanking circuit

Block Diagram and Typical Application



Notes:
HA11441 pin numbers are enclosed in circles.
The numbers in parentheses are HA11441MP pin numbers.

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Vertical supply voltage	$V_{CC(V)}$	12	V
Horizontal supply voltage	$V_{CC(H)}$	12	V
Vertical output current	I_{OV}	10	mA
Horizontal output current	I_{OH}	5	mA
Power dissipation	P_T	200	mW
Operating temperature	T_{opr}	–20 to +75	°C
Storage temperature	T_{stg}	–55 to +125	°C

Electrical Characteristics (V_{CC} = 5 V, Ta = 25°)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Horizontal supply current	I_{CCH}	—	4.2	—	mA	V_{CC} = 5 V, mounted
Vertical supply current	I_{CCV}	—	3.5	—	mA	V_{CC} = 5 V, drive output = 0
Horizontal oscillation frequency	f_{OH}	14.75	15.75	16.75	kHz	V_{CC} = 5 V, typical external circuit
Vertical oscillation frequency	f_{OV}	50	55	60	Hz	V_{CC} = 5 V, typical external circuit
Horizontal AFC DC loop gain	f_C	450	650	1000	Hz/µs	
Horizontal output pulse width	t_{HW}	22.0	24.5	27	µs	f_{OH} = 15.75 kHz
Sync separation pulse width	t_{sy}	4.5	5.0	5.5	µs	Input 5 µs
Horizontal pull-in range	Δf_{PH}	±450	±650	—	Hz	Pull-in range from f_{OH} = 15.75 kHz

Typical Performance Curves

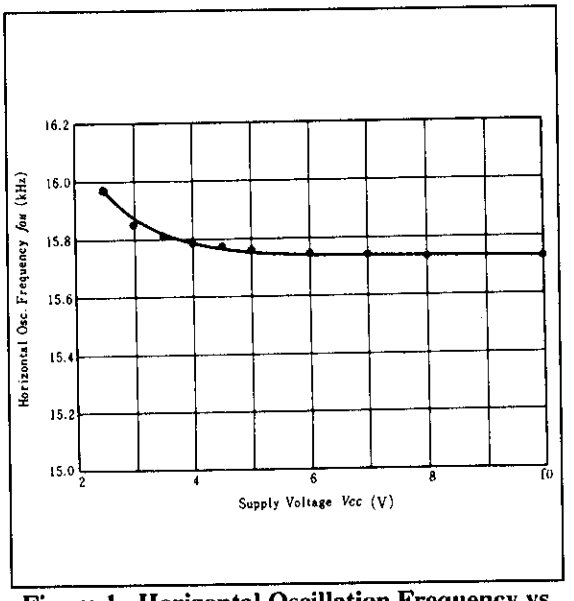


Figure 1 Horizontal Oscillation Frequency vs. Supply Voltage

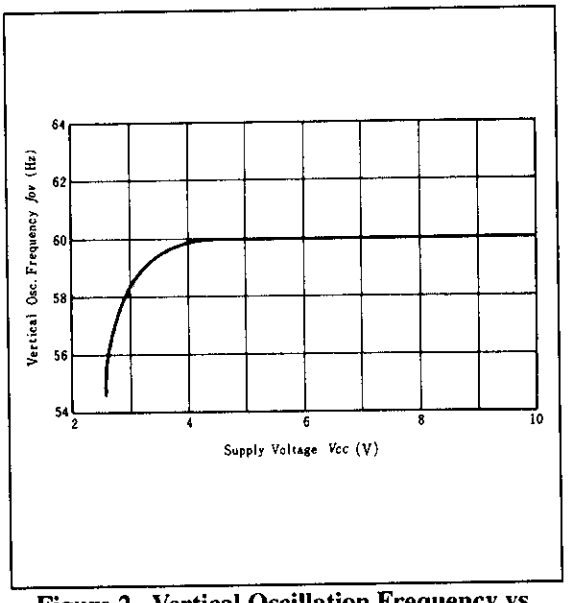


Figure 2 Vertical Oscillation Frequency vs. Supply Voltage