

# HA11244

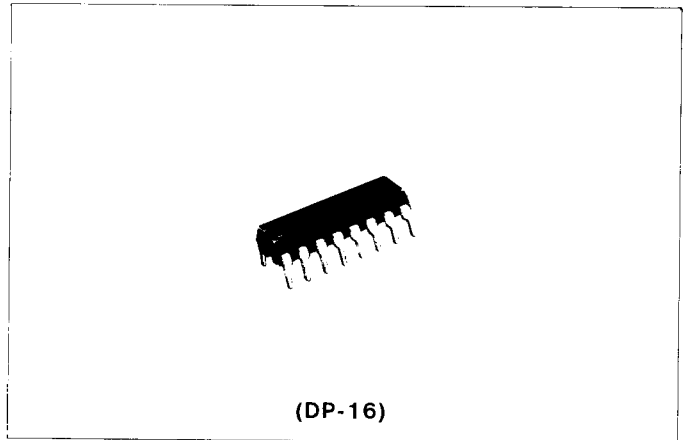
## TV Synchronous Processor

### FUNCTIONS

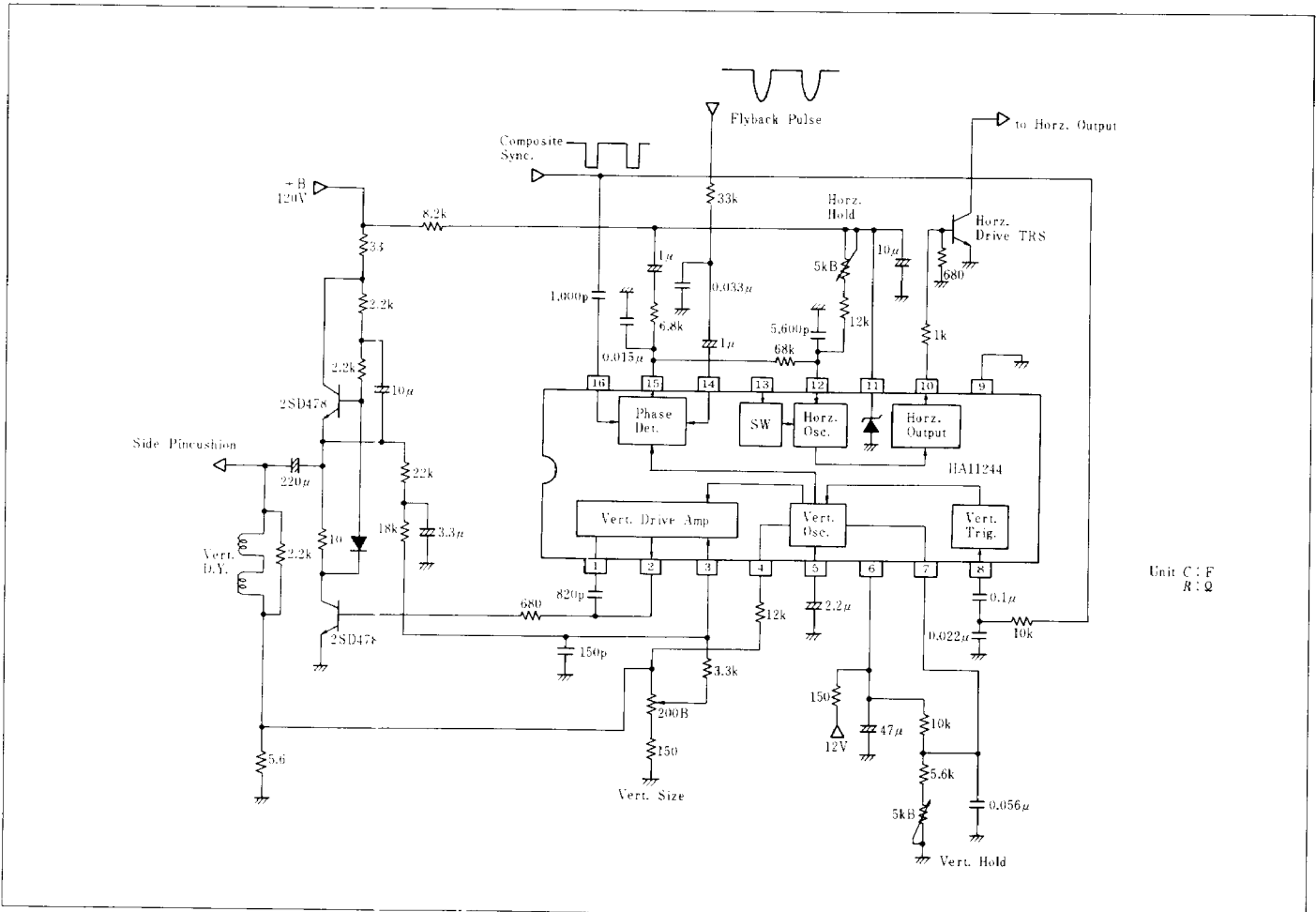
- Horizontal AFC
- Horizontal Oscillator
- X-radiation Protector
- Vertical Oscillator
- Vertical Driver

### FEATURES

- Low external components count.
- A voltage regulator included in the horizontal block.
- DC loop gain of horizontal AFC:  $640 \text{ Hz}/\mu\text{s}$ .
- A nonstable multivibrator provided for vertical oscillation.
- One high-stable (Tantalum) capacitor at the vertical stage enables vertical oscillator waveform to drive vertical output stage.
- DC feedback to pin-3 stabilizes the vertical output stage.
- Automatic adjustment of vertical linearity.



### RECOMMENDED OPERATING CIRCUIT



**■ ABSOLUTE MAXIMUM RATINGS** ( $T_a=25^\circ\text{C}$  unless otherwise specified)

Item	Symbol	Rating	Unit
Supply Voltage (pin 6)	$V_6$	15	V
Supply Current (pin 11)	$I_{11}$	20	mA
Power Dissipation	$P_T$	500*	mW
Operating Temperature Range	$T_{opr}$	-20 to +75	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +125	$^\circ\text{C}$

\* Value at  $T_a=75^\circ\text{C}$ 
**■ ELECTRICAL CHARACTERISTICS**

Item		Symbol	Test Condition	min.	typ.	max.	Unit
Horizontal Block	Regulated Voltage	$V_{11}$	$I_{11}=15\text{mA}$	—	12.8	—	V
	Free-running Frequency	$f_{oh}$	H. Hold Vol = 2k $\Omega$	14,734	15,734	16,734	Hz
	Pull-in Range	$f_{ph}$		$\pm 450$	$\pm 650$	—	Hz
	DC loop gain (1)	$f_{c1}$		512	640	853	Hz/ $\mu\text{s}$
	DC loop gain (2)	$f_{c2}$	Vertical Interval	1,540	2,000	2,860	Hz/ $\mu\text{s}$
	$f_{oh}$ Temperature Coefficient	$\Delta f_{oh}/\Delta T$		-6	-3	0	Hz/ $^\circ\text{C}$
	Output Pulse Width	$t_{HW}$	Pin 10	20	22.5	25	$\mu\text{s}$
Osc. stop voltage	$V_{D13}$	$I_{13}=10\mu\text{A}$	0.665	0.715	0.765	V	
Vertical Block	Free-running Frequency	$f_{ov}$	V. Hold Vol = 2.9k $\Omega$	55	60	65	Hz
	Pull-in Range	$f_{pv}$		—	-10	-7.5	Hz
	$f_{ov}$ Temperature Coefficient	$\Delta f_{ov}/\Delta T$		-0.03	0	+0.03	Hz/ $^\circ\text{C}$
	$f_{ov}$ $V_{CC}$ Coefficient	$\Delta f_{ov}/\Delta V_{CC}$	$f_{ov}=f_{ov}(14.4\text{V})=f_{ov}(9.6\text{V})$	-2	0	+2	Hz
	Voltage of Pin 4	$V_4$		3.8	4.0	4.2	V