

# HA11517BNT

T-77-07-11

## Display Deflection Signal Processor

The HA11517BNT is a horizontal and vertical deflection signal processing IC for display use constructed in a bipolar IIL process.

### Functions

- Horizontal AFC
- Horizontal oscillator
- X-Ray protection
- Horizontal drive
- Vertical pre-drive
- Blanking

### Features

- Wide horizontal frequency range: 15 kHz to 100 kHz
- Clamp pulse for pedestal clamp
- Composite blanking pulse output with horizontal phase adjustment
- Variable horizontal pulse width
- Variable horizontal display position
- Separated sync. signal and composite sync. signal with either polarity is acceptable.
- Vertical and horizontal oscillating frequency become higher, without sync. signal.

### Ordering Information

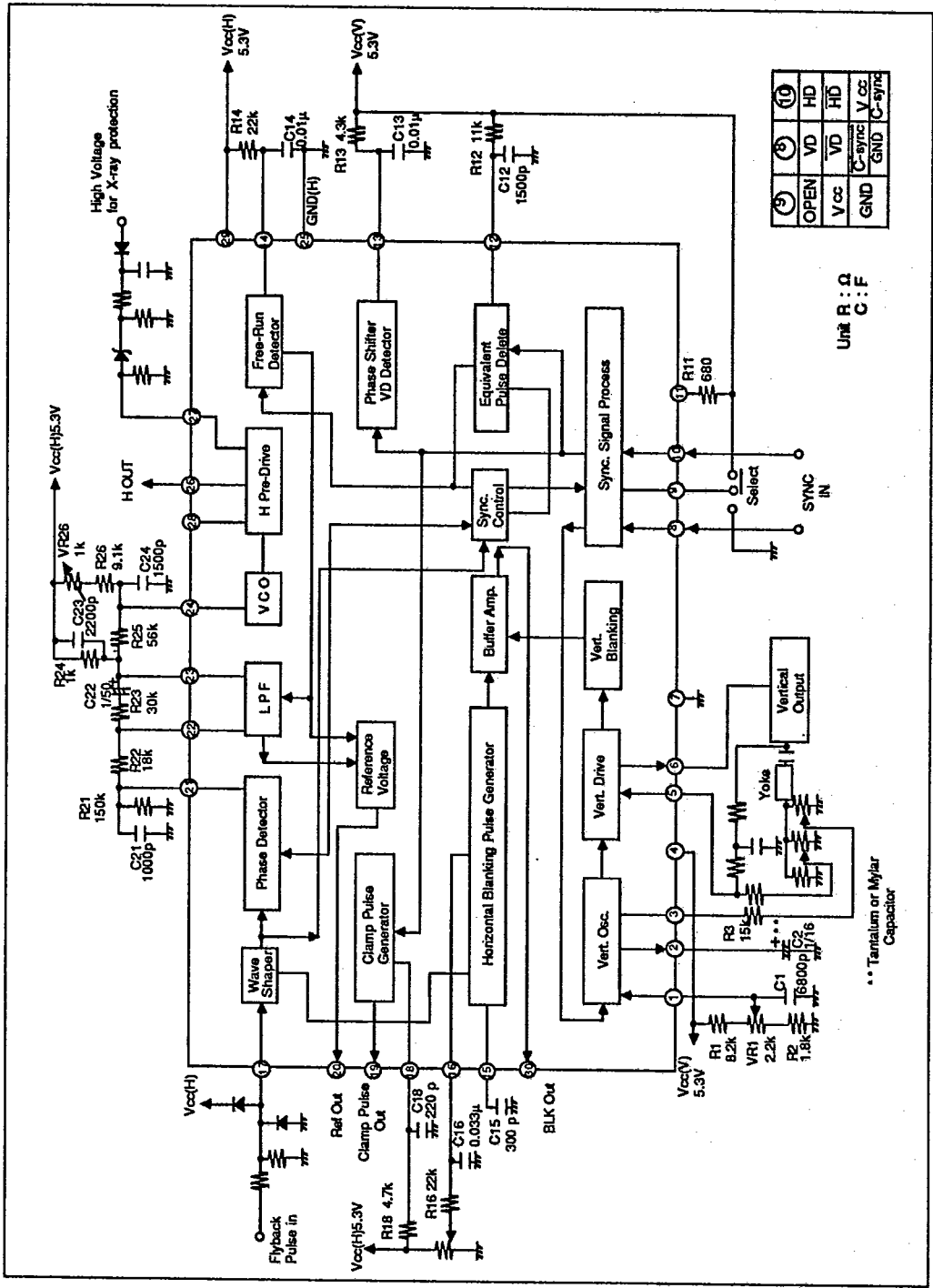
Type No.	Package
HA11517BNT	DP-30S



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Block Diagram



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Table 1 Pin Function

Pin No.	Function
1	Determination of the vertical OSC. frequency
2	Connected to capacitor for vertical OSC
3	Connected to resistor for the determination of the vertical OSC. discharging time constant
4	Power supply for vertical oscillator
5	Feedback input for the vertical DC/AC output voltage
6	Vertical output
7	Ground for vertical oscillator
8	VD or negative composite sync. signal input
9	Sync. signal input selector
10	HD or positive composite sync. signal input
11	Power supply for IIL
12	Determination of the time constant in order to delete the equivalent pulse
13	Determination of the phase shift time for the horizontal display position adjustment
14	The time constant for the free-run detector
15	Connected to capacitor for the horizontal blanking phase adjustment
16	The horizontal blanking phase adjustment
17	Fly-back pulse input
18	Clamp pulse width adjustment
19	Clamp pulse output
20	Reference voltage output for multi-scanning purpose
21	Output for the horizontal phase detector
22	Input for the low pass filter
23	Output DF the low pass filter



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**Pin Function (cont)**

<b>24</b>	<b>Connected to the horizontal oscillator CR</b>
<b>25</b>	<b>Ground for horizontal oscillator</b>
<b>26</b>	<b>Horizontal output</b>
<b>27</b>	<b>Input for X-RAY protector</b>
<b>28</b>	<b>Horizontal pulse width adjustment</b>
<b>29</b>	<b>Power supply for the horizontal oscillator</b>
<b>30</b>	<b>Composite blanking output</b>



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Table 2 Absolute Maximum Ratings (Ta = 25 °C)

Item	Symbol	Rating	Unit
Vertical supply voltage	Vcc	7	V
Horizontal supply voltage	Vcc	7	V
Power dissipation	Pr	850	mW
Operating temperature	Topr	0 to +70	°C
Storage temperature	Tstg	-55 to +125	°C

Table 3 Electrical Characteristics (Ta = 25 °C, Vcc = 5.3 V)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Power supply voltage	Vcc	5.0	5.3	5.5	V	
Horizontal supply current	IccH	—	38	—	mA	
Horizontal oscillator	Vos	—	—	4.0	V	
Starting supply voltage	START					
Horizontal pull-in range	$\Delta f_{PH}$	$\pm 10$	—	—	%	
Horizontal output pulse duty		—	40	—	%	
Vertical supply current	IccV	—	7	—	mA	
Vertical oscillator frequency	fv	—	55	—	Hz	
Vertical pull-in range	$\Delta f_{V}$	—	-13	—	Hz	
Vertical blanking pulse raising delay time		—	30	—	$\mu s$	
X-RAY protection operating voltage		—	0.8	—	V	

