

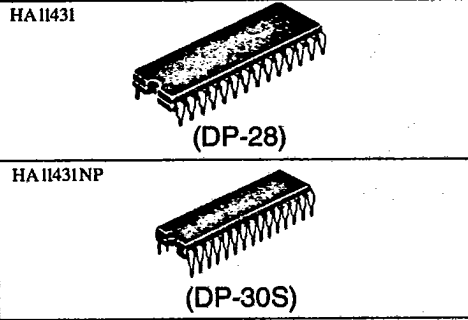
HA11431

T-77-07-09

Color TV Luminance-Chroma System

Functions

- Secondary differential sharpness control on DC
- Contrast control
- Pedestal clamp
- Brightness control
- Blanking
- Chroma amp (peak detection auto color control (ACC))
- Color sync (auto phase control (APC))
- Color demodulation (color difference output)



Features

- Current amplifying secondary differential video tone control
- Controlled preshoot and overshoot provide clear contour lines
- DC control
- Internal blanking circuit
- Complete luminance-chroma system
- Low external parts count
- Variable resistor adjustable VCO (voltage controlled oscillator) output frequency
- Capable of low voltage operation ($V_{CC} = 9\text{ V}$)
- Demodulation on color difference
- Can be used with VCR system
- Video amp high frequency response ($f_c = 6.5\text{ MHz typ}$)

Ordering Information

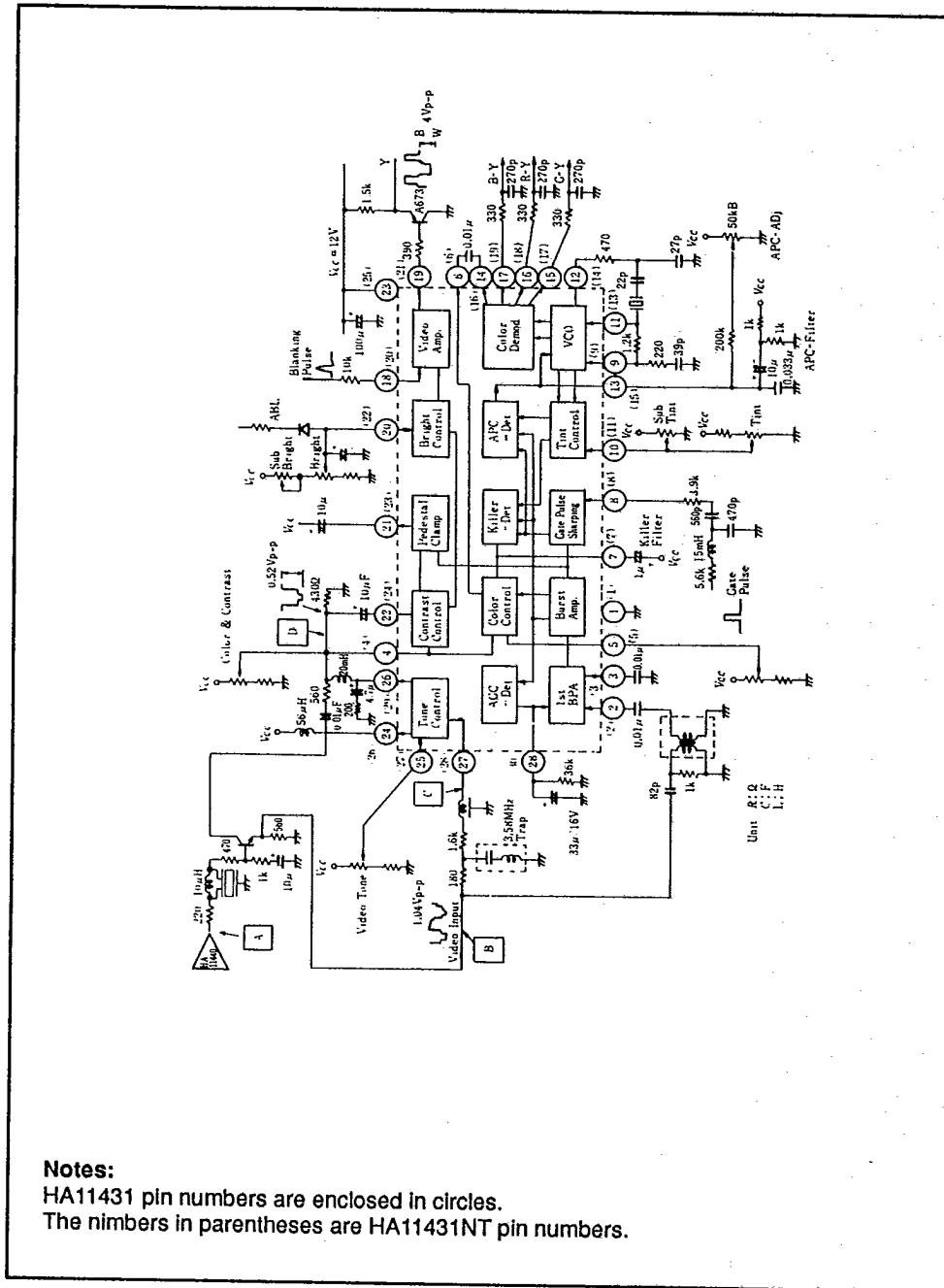
Type No.	Package
HA11431	600 mil 28 pin plastic DIP (DP-28)
HA11431NP	400 mil 30 pin plastic shrink DIP (DP-30S)



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Block Diagram and Typical Application



Notes:
 HA11431 pin numbers are enclosed in circles.
 The numbers in parentheses are HA11431NT pin numbers.



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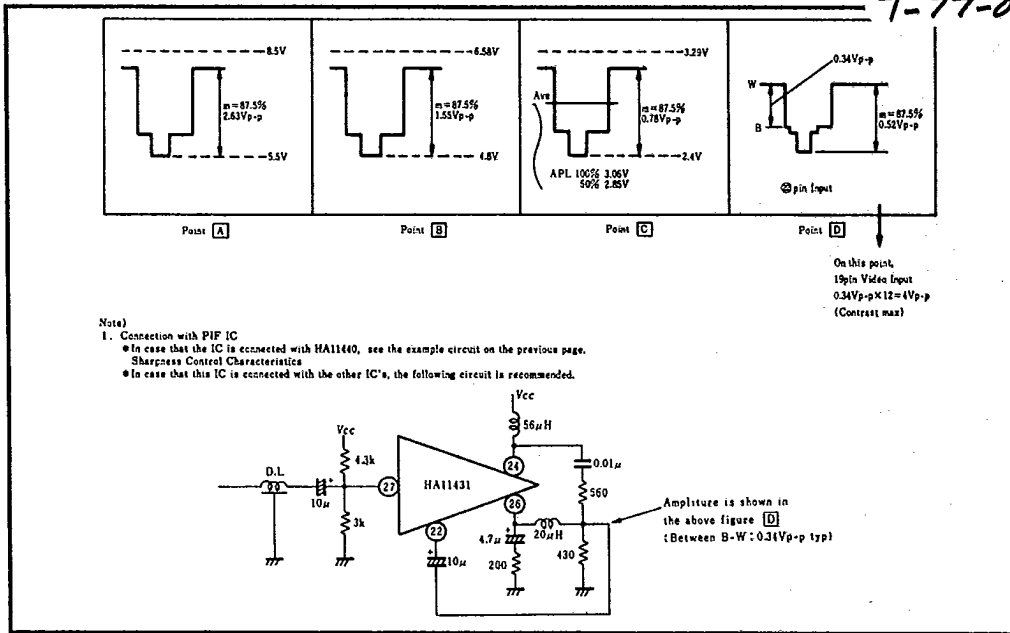


Figure 1 Video Input Signal Output Waveform

Electrical Characteristics

Item	Symbol	Min	Typ	Max	Unit	Notes
BPA Chroma Max Output Voltage	$E_c \text{ max}$	0.54	0.67	0.85	V _{p-p}	Burst/chroma = 1
ACC Range	E_a	0.38	0.55	0.74	V _{p-p}	-20 dB input
Killer Sensitivity	E_k	—	-44	—	dB	
Conversion Gain	G_{R-Y}	4.5	6.2	—		
Matrix Ratio (1)	E_{B-Y}/E_{R-Y}	1.05	1.20	1.35		$\angle(R-Y) - (B-Y) = 105^\circ \text{ typ, adjustable externally}$
Matrix Ratio (2)	E_{G-Y}/E_{R-Y}	0.30	0.40	0.50		
DC Output Voltage	E_{ODC}	6.4	7.0	7.6	V	
DC Output Voltage Difference	E_{ODC}	-0.3	0	+0.3	V	
Video Amp Voltage Max Gain	G_V	10.5	12	13.5		
Video Amp Frequency Response	f_c	—	6.5	—	MHz	
DC Reproduce		—	75	—	%	
Blanked Output Voltage		11	—	—	V	



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Typical Performance Curves

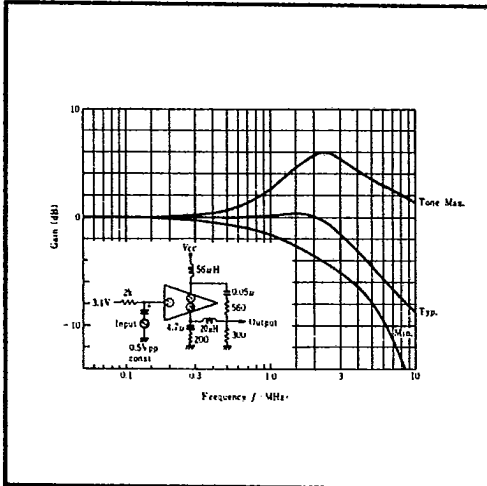


Figure 2 Tone Control Characteristics

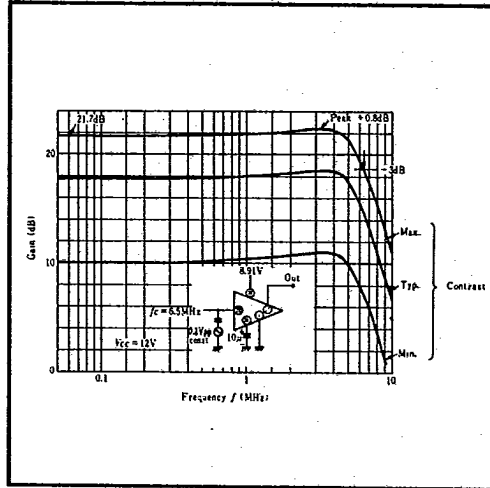


Figure 3 Contrast Amp/Video Amp Frequency Characteristics

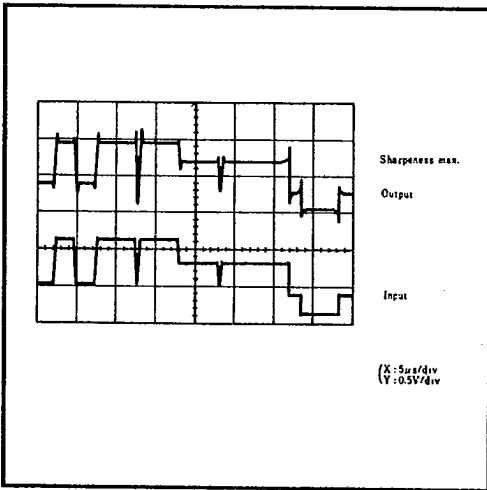


Figure 4 Sharpness Control Characteristics (1)

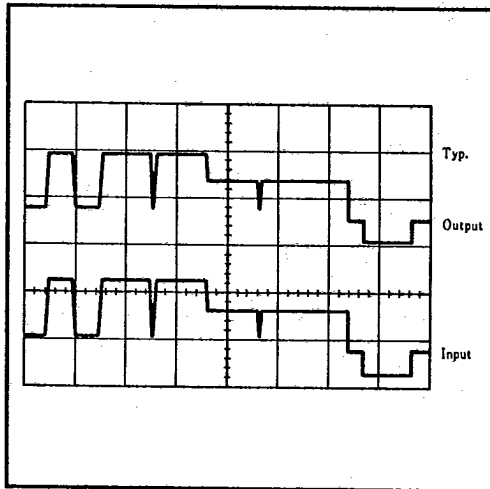


Figure 5 Sharpness Control Characteristics (2)



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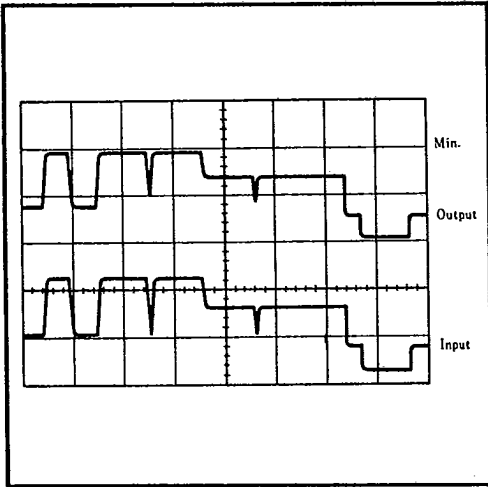


Figure 6 Sharpness Control Characteristics (3)

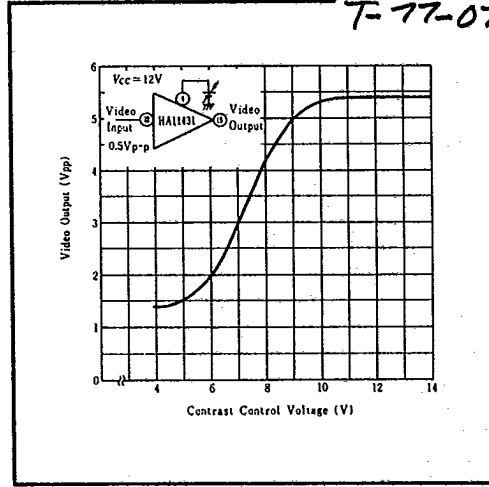


Figure 7 Contrast Control Characteristics

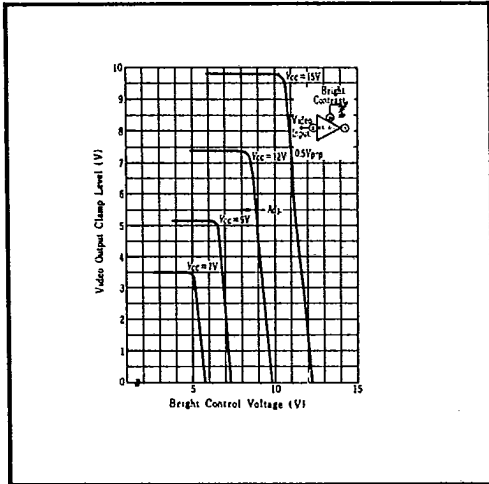


Figure 8 Brightness Control Characteristics

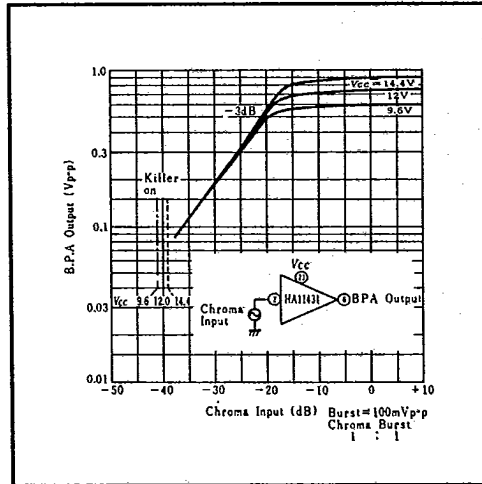


Figure 9 AGC Characteristics



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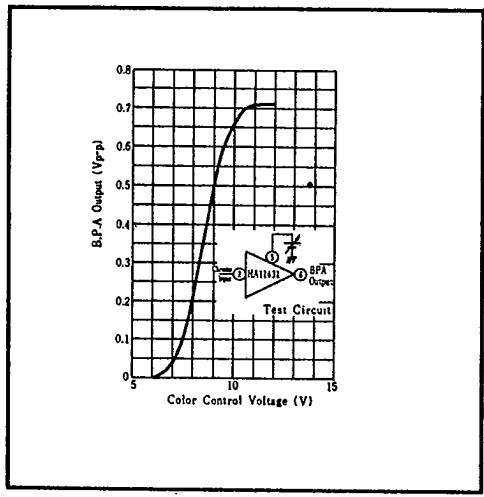


Figure 10 Color Control Characteristics

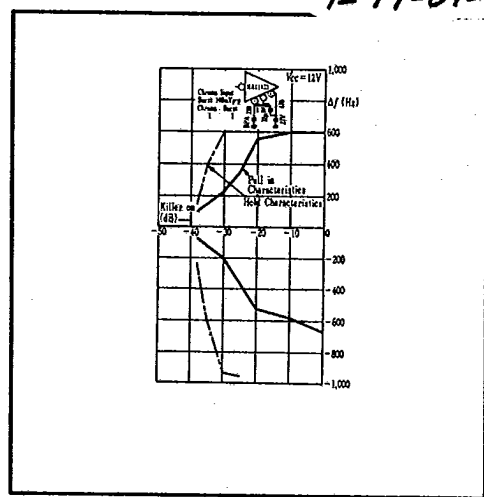


Figure 11 VCO Pull-In Characteristics



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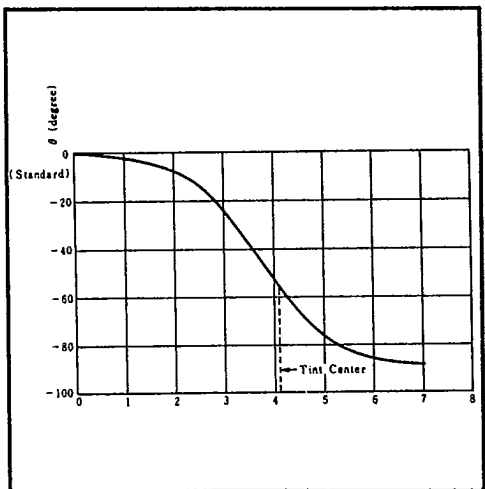


Figure 12 Tint Control Characteristics

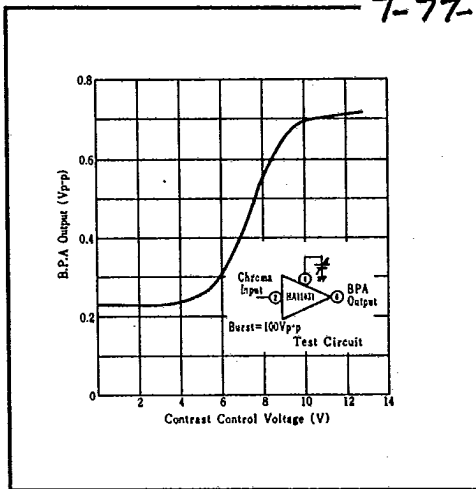


Figure 13 BPA Output Dependence on Contrast Voltage

