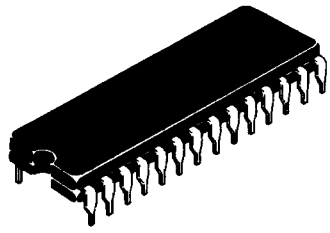
HA11412A

Color TV Chroma Video System

■ FUNCTIONS

- Secondary Differential Video Tone Control Circuit, DC Control Type
- Contrast Control Circuit, DC Control Type
- Pedestal Clamp
- Chroma Amplifier
- Color Sync. Circuit
- Color Demodulator
- Brightness Control Circuit

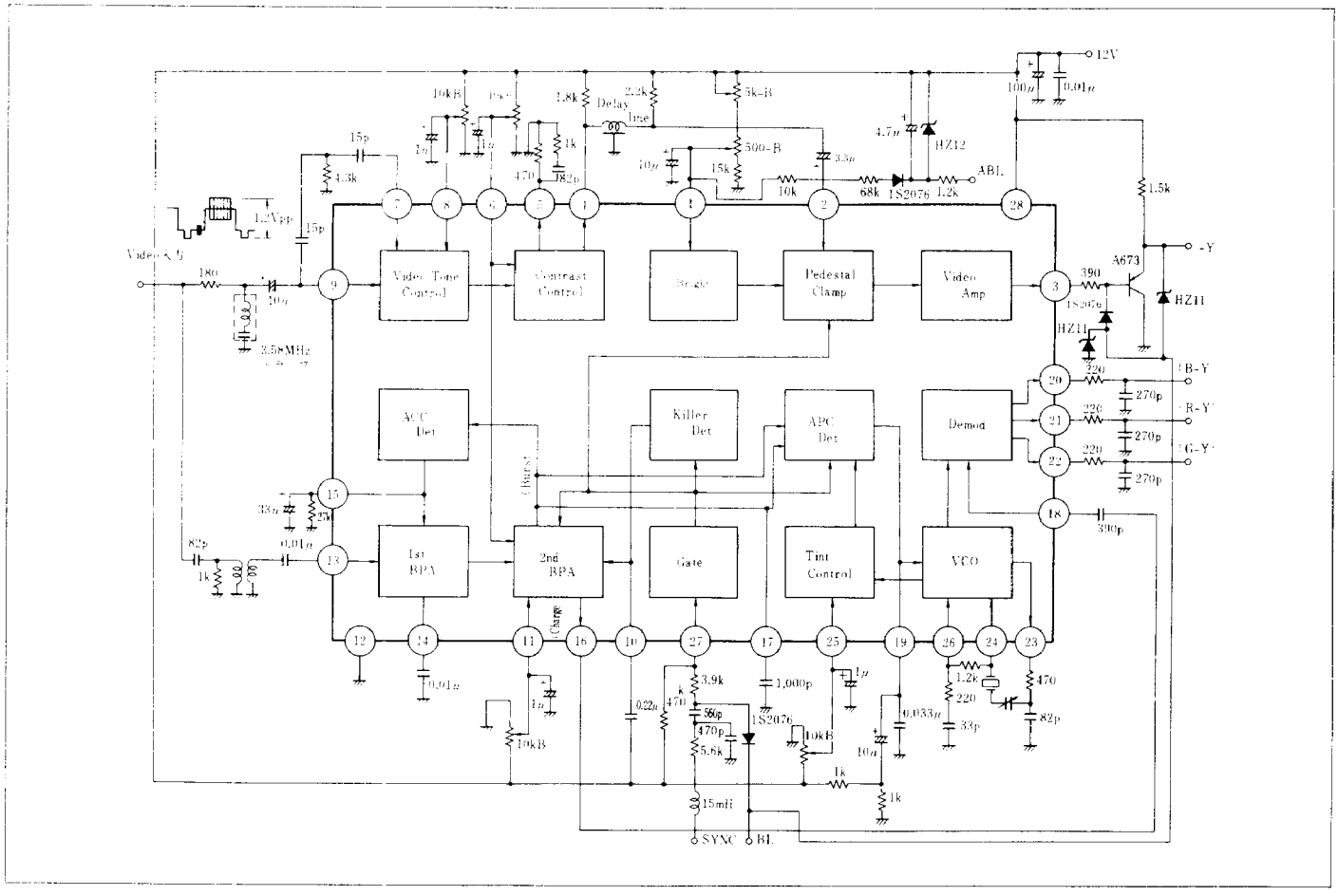


(DP-28)

■ FEATURES

- Video tone can be controlled on DC.
- A pin controls color saturation and contrast.
- Low external components count
- Only two adjustments are needed; osc frequency, sub-color control.

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless otherwise specified)

Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	15	V
Power Dissipation	P_T	850*	mW
Operating Temperature Range	T_{opr}	−15 to +70	°C
Storage Temperature Range	T_{stg}	−55 to +125	°C

* Value at Ta=70°C

HITACHI

■ ELECTRICAL CHARACTERISTICS

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Supply Current	I_{CC}	V_{CC}=12V	31	41	59	mA
BPA Chroma Output	Ec	burst : chroma=1 : 1 burst=90mVp-p	0.77	0.96	1.20	Vp-p
ACC Range	Ea	burst : chroma=1 : 1 burst=13mVp-p	0.44	0.68	0.95	Vp-p
Killer Threshold	Ek	burst=90mVp-p=0dB	—	−43	—	dB
APC-Det. Detection Sensitivity	μ	gate pulse width=5μs	—	16	—	mV/deg.
VCO Control Sensitivity	β		—	5	—	Hz/mV
APC Pull in Range	f_p		±300	—	—	Hz
Free-Running Frequency	f_o	Gate OFF	−250	0	+250	Hz
VCO Output	V_{vco}	measured at pin 4	—	0.9	—	Vp-p
C-Demod. Maximum Output	E_{bmax}	B-Y output f(beat)=10kHz	3.70	5.1	—	Vp-p
C-Demod. Conversion Gain	G_{r-y}	R-Y output	—	7.8	—	times
C-Demod. Conversion Ratio	$\frac{E_{b-y}}{E_{r-y}}$	B-Y output/R-Y output	—	1.28	—	times
C-Demod. Conversion Ratio	$\frac{E_{g-y}}{E_{r-y}}$	G-Y output/R-Y output at (R-Y)-(B-Y)=105°	—	0.40	—	times
C-Demod. Carrier Leakage	e_{car1}	no signal input measured with 3.58MHz BPF	—	—	0.2	Vp-p
C-Demod. Harmonic Leakage	e_{car2}	1.2Vp-p CW input measured with HPF	—	—	3.5	Vp-p
Color Killer Leakage	e_{k1}	burst : chroma=1 : 1 rainbow color-bar	—	—	1.25	mVrms
Color Control Leakage	e_{c1}	same as the above	—	—	1.25	mVrms
C-Demod. Output Voltage	E_{odc}	no signal input VCO free runned	6.4	7.0	7.6	V
C-Demod. Output Differential DC Voltage	$\triangle E_{odc}$	same as the above (B-Y)-(R-Y), (R-Y)-(G-Y),(G-Y)-(B-Y)	−0.3	0	+0.3	V
Video Tone Response	$A_{5\ 1}$	f=2MHz/f=100kHz at pin 5. $V_8=V_{CC}$, V_4 open	—	8.4	—	dB
Video Tone Response	$A_{5\ 2}$	f=2MHz/f=100kHz at pin 5 V_8=0, V_4 open	—	0	—	dB
Contrast Amp. Gain	$A_{5\ 3}$	V_{in}=2Vp-p at pin 7, f=100kHz $V_6=V_{CC}$, Measured at pin 5	—	1.03	—	times
Contrast Amp. Gain	$A_{5\ 4}$	V_{in}=2Vp-p at pin 7 V_6=0, f=100kHz	—	0.27	—	times
Video Amp. Gain	$G_{3\ 2}$	V_{in}=1.5Vp-p at pin 2 f=100kHz, Measured at pin 3	—	2.6	—	times