

# HA11412A

## Color TV Chroma Video System

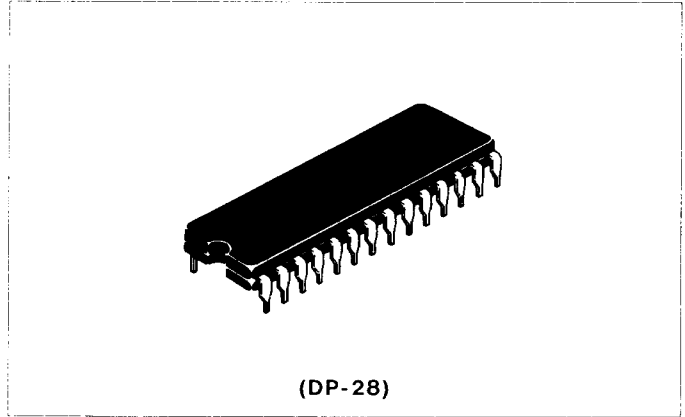
### FUNCTIONS

- 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

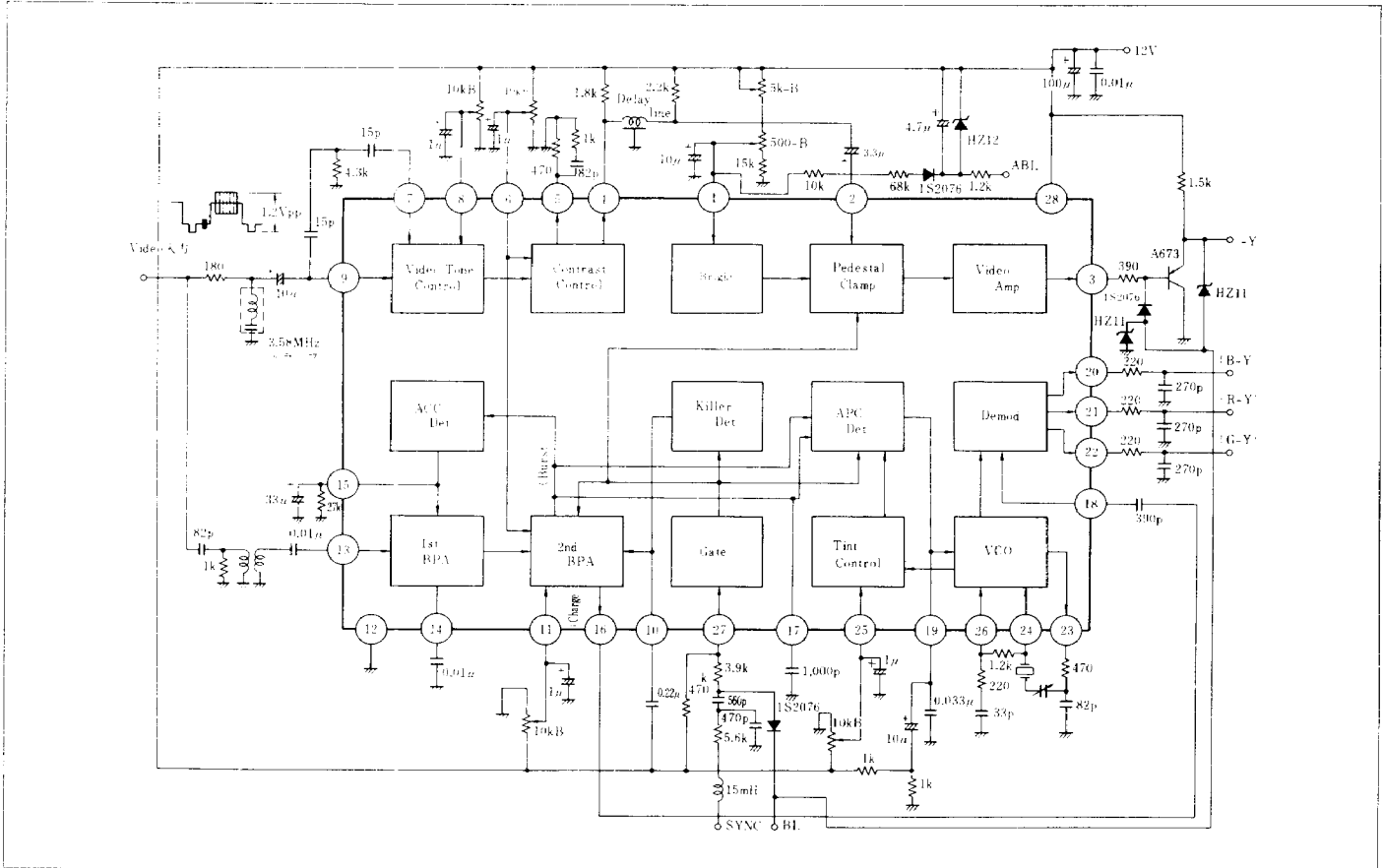
### FEATURES

- 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



(DP-28)



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

Item	Symbol	Rating	Unit
Supply Voltage	$V_{CC}$	15	V
Power Dissipation	$P_T$	850*	mW
Operating Temperature Range	$T_{op}$	-15 to +70	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +125	$^\circ\text{C}$

\* Value at  $T_a=70^\circ\text{C}$

### ■ ELECTRICAL CHARACTERISTICS

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Supply Current	$I_{cc}$	$V_{cc}=12V$	31	41	59	mA
BPA Chroma Output	$E_c$	burst : chroma=1 : 1 burst=90mVp-p	0.77	0.96	1.20	Vp-p
ACC Range	$E_a$	burst : chroma=1 : 1 burst=13mVp-p	0.44	0.68	0.95	Vp-p
Killer Threshold	$E_k$	burst=90mVp-p=0dB	—	-43	—	dB
APC-Det. Detection Sensitivity	$\mu$	gate pulse width=5 $\mu$ s	—	16	—	mV/deg.
VCO Control Sensitivity	$\beta$		—	5	—	Hz/mV
APC Pull in Range	$f_p$		$\pm 300$	—	—	Hz
Free-Running Frequency	$f_o$	Gate OFF	-250	0	+250	Hz
VCO Output	$V_{cco}$	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	$\frac{E_{b-z}}{E_{r-y}}$	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	$\Delta E_{odc}$	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, $f=100kHz$ $V_8=V_{cc}$ , Measured at pin 5	—	1.03	—	times
Contrast Amp. Gain	$A_{5-4}$	$V_{in}=2Vp-p$ at pin 7 $V_8=0$ , $f=100kHz$	—	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