# HA11412A

## Color TV Chroma Video System

### ■ FUNCTIONS

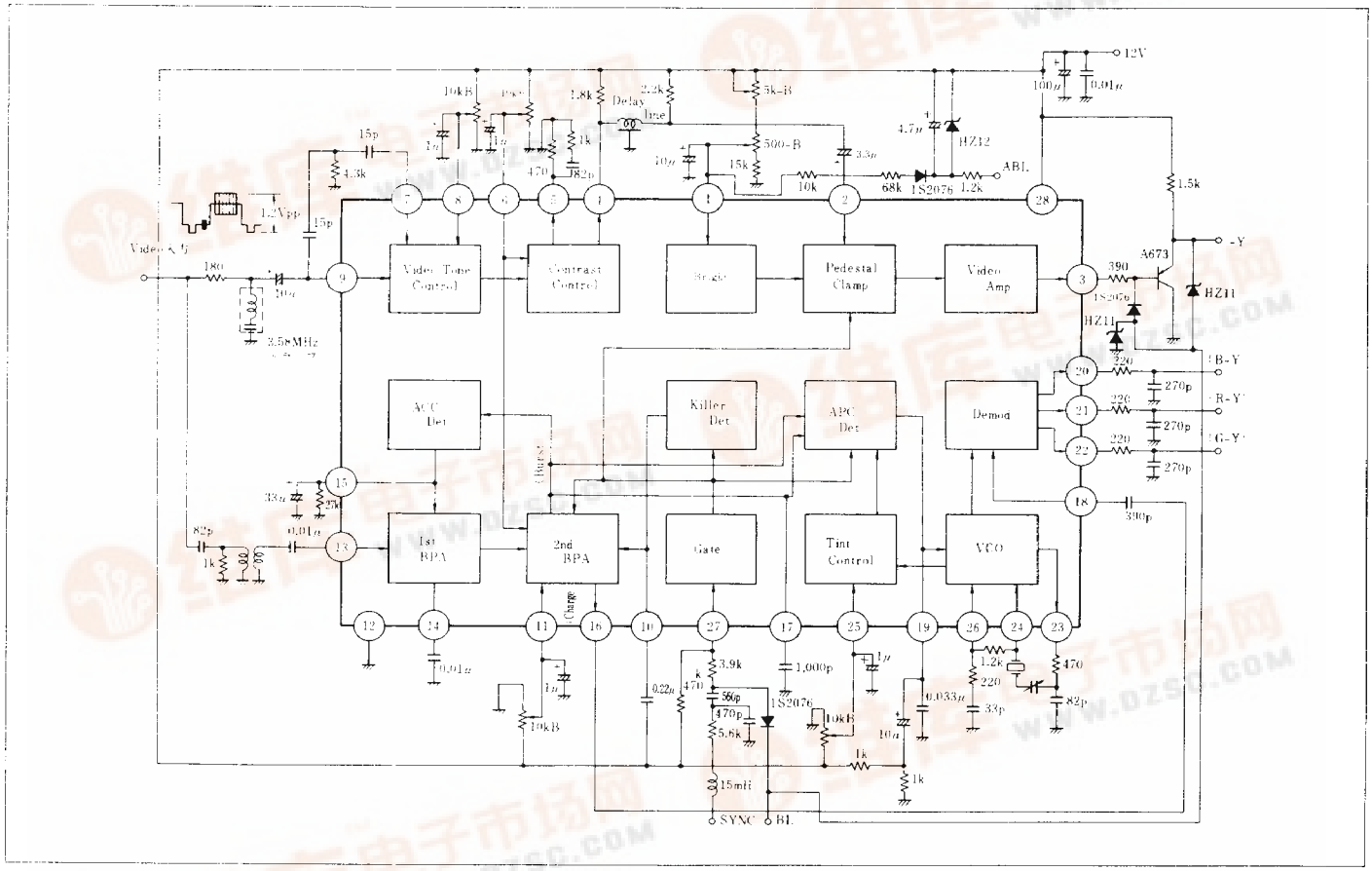
- Secondary Differential Video Tone Control Circuit, DC Control Type
- Contrast Control Circuit, DC Control Type
- Pedestal Clamp
- Chroma Amplifier
- Color Sync. Circuit
- Color Demodulator
- Brightness Control Circuit

(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<br>burst=90mVp-p | 0.77 | 0.96 | 1.20 | Vp-p |
| ACC Range | $Ea$ | burst : chroma=1 : 1<br>burst=13mVp-p | 0.44 | 0.68 | 0.95 | Vp-p |
| Killer Threshold | $Ek$ | 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 | $f_p$ | | ±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<br>(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),<br>(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.<br>$V_8=V_{CC}$, $V_4$ open | — | 8.4 | — | dB |
| Video Tone Response | $A_{5\ 2}$ | $f$=2MHz/$f$=100kHz at pin 5<br>$V_8$=0, $V_4$ open | — | 0 | — | dB |
| Contrast Amp. Gain | $A_{5\ 3}$ | $V_{in}$=2Vp-p at pin 7, $f$=100kHz<br>$V_6=V_{CC}$, Measured at pin 5 | — | 1.03 | — | times |
| Contrast Amp. Gain | $A_{5\ 4}$ | $V_{in}$=2Vp-p at pin 7<br>$V_6$=0, $f$=100kHz | — | 0.27 | — | times |
| Video Amp. Gain | $G_{3\ 2}$ | $V_{in}$=1.5Vp-p at pin 2<br>$f$=100kHz, Measured at pin 3 | — | 2.6 | — | times |