



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089

NTE1838 & NTE1856 Integrated Circuit Color TV Video/Chroma/Deflection Circuit

Description:

The NTE1839 and NTE1856 are small-sized multifunctional integrated circuits containing the “video, chroma, deflection” circuit of NTSC color TVs in a 30-Lead DIP type package. Besides being small-sized, they have such features as fewer external components and fewer adjustments. required. The NTE1838/NTE1856 can be used in conjunction with the NTE1728 for “VIF•SIF” use or the NTE1773/NTE1797 for “vertical output” use to perform all color TV signal processings.

The NTE1856 contains a peak clip circuit in the video circuit making it well suited for use in small-sized TV sets while the NTE1838 contains no peak clip circuit and is suited for large-sized TV sets.

Features:

- Small-Sized Package
- Minimum Number of External Components Required
- Fewer Adjustments Required (Non-Adjusting of Functions Shown Below)
 - Chroma VCO (APC)
 - Horizontal OSC (H-Hold)
 - Vertical OSC (V-Hold)
- Multifunctional

Absolute Maximum Ratings: ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Maximum Supply Voltage, $V_{16\text{max}}$ 14V
 Maximum Supply Current, $I_{22\text{max}}$ 15mA
 Allowable Power Dissipation ($T_A \leq +65^{\circ}\text{C}$), $P_{d\text{max}}$ 1100mW
 Operating Temperature Range, T_{opr} -20° to $+85^{\circ}\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+125^{\circ}\text{C}$

Recommended Operating Conditions: ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|----------------------------|----------|-----------------|-----|------|------|------|
| Recommended Supply Voltage | V_{16} | | 9.0 | 12.0 | 14.0 | V |
| Recommended Supply Current | I_{22} | | 8.5 | 10.0 | 15.0 | mA |

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, $V_{16} = 12\text{V}$, $I_{22} = 10\text{mA}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|---------------------------|-----------------|-----------|-----------------------|-----------|-----------------|
| Chroma | | | | | | |
| ACC Amplitude Characteristic | ACC ₁ | | -3 | 0 | +3 | dB |
| | ACC ₂ | | -7 | 0 | +2 | dB |
| ACC Phase Characteristic | ACC ϕ ₁ | | - | 0 | ± 3 | deg |
| | ACC ϕ ₂ | | - | 0 | ± 7 | deg |
| Maximum B-Y Demodulation Output | B-Y _{max} | | 5.0 | - | - | V _{PP} |
| Unicolor Amplitude Characteristic | ΔGU | | - | 17 | - | dB |
| Tint Change Range | ΔT | | - | 110 | - | deg |
| APC Pull-In Range | f _{APC} | | ± 300 | - | - | |
| Color Difference Output DC Voltage | E _{RGB} | | 6.7 | 7.2 | 7.7 | V |
| Color Difference DC Difference Voltage | E Δ _{RGB} | | - | - | ± 300 | mV |
| R-Y Relative Demodulation Angle | $\angle\text{R-Y/B-Y}$ | | - | 104 | - | deg |
| G-Y Relative Demodulation Angle | $\angle\text{G-Y/B-Y}$ | | - | -122 | - | deg |
| R-Y Demodulation Ratio | R-Y/B-Y | | - | 0.9 | - | |
| G-Y Demodulation Ratio | G-Y/B-Y | | - | 0.3 | - | |
| Video | | | | | | |
| Video Tone Control Characteristic | G _{pmin} | | -5 | -3 | -1 | dB |
| | G _{pmax} | | 12 | 15 | 18 | dB |
| Video Voltage Gain | V _G | | 12 | 15 | 18 | dB |
| Contrast Variable Range | ΔG_C | | - | 18 | - | dB |
| Frequency Response | ΔG_V | f = 5MHz | -5 | - | - | dB |
| Synchronization, Deflection | | | | | | |
| Sync Separation Input DC Level | V _{S•S} | | - | 9.3 | - | V |
| Vertical Free-Running Frequency | f _V | | - | f _H /296.5 | - | Hz |
| Vertical Blanking Pulse Width | T _{BL} | | - | 19H | - | |
| Vertical Drive Stage Voltage Gain | V _G | | - | 16 | - | dB |
| Horizontal Free-Running Frequency | f _H | | - | 15.734 | - | kHz |
| Horizontal Drive Output Pulse Width | T _H | | - | 24.5 | - | μs |
| Horizontal Sync Pull-In Range | f _{PULL} | | ± 400 | - | - | Hz |

Pin Connection Diagram

