



**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,  $T_{\text{opr}}$  .....  $-20^{\circ}$  to  $+85^{\circ}\text{C}$   
 Storage Temperature Range,  $T_{\text{stg}}$  .....  $-55^{\circ}$  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
<b>Chroma</b>						
ACC Amplitude Characteristic	$ACC_1$		-3	0	+3	dB
	$ACC_2$		-7	0	+2	dB
ACC Phase Characteristic	$ACC_{\phi 1}$		-	0	$\pm 3$	deg
	$ACC_{\phi 2}$		-	0	$\pm 7$	deg
Maximum B-Y Demodulation Output	B-Y <sub>max</sub>		5.0	-	-	V <sub>PP</sub>
Unicolor Amplitude Characteristic	$\Delta GU$		-	17	-	dB
Tint Change Range	$\Delta T$		-	110	-	deg
APC Pull-In Range	$f_{APC}$		$\pm 300$	-	-	
Color Difference Output DC Voltage	$E_{RGB}$		6.7	7.2	7.7	V
Color Difference DC Difference Voltage	$E_{\Delta RGB}$		-	-	$\pm 300$	mV
R-Y Relative Demodulation Angle	$\angle R-Y/B-Y$		-	104	-	deg
G-Y Relative Demodulation Angle	$\angle G-Y/B-Y$		-	-122	-	deg
R-Y Demodulation Ratio	R-Y/B-Y		-	0.9	-	
G-Y Demodulation Ratio	G-Y/B-Y		-	0.3	-	
<b>Video</b>						
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	$\Delta G_C$		-	18	-	dB
Frequency Response	$\Delta G_V$	$f = 5\text{MHz}$	-5	-	-	dB
<b>Synchronization, Deflection</b>						
Sync Separation Input DC Level	$V_{S\bullet S}$		-	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	-	$\mu\text{s}$
Horizontal Sync Pull-In Range	$f_{PULL}$		$\pm 400$	-	-	Hz

### Pin Connection Diagram

