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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°C unless otherwise specified)

Maximum Supply Voltage, V_{16}max 14V
Maximum Supply Current, I_{22}max 15mA
Allowable Power Dissipation ($T_A \le +65°C$), $P_d$max 1100mW
Operating Temperature Range, T_{opr} . . . . . –20° to +85°C
Storage Temperature Range, T_{stg} . . . . . –55° to +125°C

Recommended Operating Conditions: (T_A = +25°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°C, V_{16} = 12V, I_{22} = 10mA 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	$ACC_{Ø1}$		–	0	±3	deg
	$ACC_{Ø2}$		–	0	±7	deg
Maximum B–Y Demodulation Output	B–Ymax		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	$E_{\Delta RGB}$		–	–	±300	mV
R–Y Relative Demodulation Angle	∠R–Y/B–Y		–	104	–	deg
G–Y Relative Demodulation 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	–	
Video						
Video Tone Control Characteristic	$G_P$min		–5	–3	–1	dB
	$G_P$max		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



