

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	$\text{ACC}\phi_1$		-	0	± 3	deg
	$\text{ACC}\phi_2$		-	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	$E_{\Delta\text{RGB}}$		-	-	± 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}	$f = 5\text{MHz}$	-5	-	-	dB
Synchronization, Deflection						
Sync Separation Input DC Level	$V_{\text{S}\bullet\text{S}}$		-	9.3	-	V
Vertical Free-Running Frequency	f_{V}		-	$f_{\text{H}}/296.5$	-	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

Color Control	1	30	Chroma Amp Input
Video Input	2	29	ACC Filter
Sharpness Control	3	28	GND
Delay Input	4	27	Sync Separator
Contrast Control	5	26	Burst Gate Pulse
Clamp Filter	6	25	Vert Sync Separator
Brightness Control	7	24	Ramp Generator
Y Output	8	23	Vert Driver Output
R – Y	9	22	Horiz V _{CC}
G – Y	10	21	AFC
B – Y	11	20	Horiz OSC
Color Killer	12	19	Horiz OSC X'tal
Tint Control	13	18	X'Ray Protect Input
VCO	14	17	Horiz Pre-Drive Output
Filter	15	16	V _{CC}

