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NTE15015 Integrated Circuit TV Video Processor

Description:

The NTE15015 is a small-sized multifunctional IC containing the “video, chroma, deflection” circuit of NTSC color TV in a shrink type 30-Lead DIP package. Besides being small-sized, it has such features as greatly reduced number of parts and fewer adjustments required. The device contains no peak clip circuit and is well suited for use in large-sized sets.

Features:

- Small-Sized Package
- Minimum Number of Parts Required
- Fewer Adjustments Required
- Chroma V_{CO} (APC)
- Horizontal OSC (H-Hold)
- Vertical OSC (V-Hold)
- Multifunction

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

Maximum Supply Voltage, $V_{16(\text{max})}$	14V
Maximum Supply Current, $I_{22(\text{max})}$	15.0mA
Allowable Power Dissipation ($T_A \leq +65^\circ\text{C}$), $P_{D(\text{max})}$	1100mW
Operating Temperature Range, T_{opg}	-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)

Recommended Supply Voltage, V_{16}	12V
Recommended Supply Current, I_{22}	10mA
Operating Voltage Range	9 to 14V
Operating Current Range	0.5 to 15.0mA

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 Characteristics	ACC1		-3	0	+3	dB
	ACC2		-7	0	+2	dB
ACC Phase Characteristics	ACC \emptyset 1		-	0	± 3	deg
	ACC \emptyset 2		-	0	± 7	deg
Maximum B-Y Demodulation Output	B-Y max		5.0	-	-	V_{P-P}
Unicolor Amplitude Characteristics	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 Characteristics	$G_{p\text{min}}$		-5	-3	-1	dB
	$G_{p\text{max}}$		12	15	18	dB
Video Voltage Gain	VG		12	15	18	dB
Contrast Variable Range	ΔGC		-	18	-	B
Frequency Response	ΔGV	$f = 5\text{MHz}$	-5	-	-	dB
Synchronization, Deflection						
Sync Separation Input DC Level	$V_{\text{S,S}}$		-	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	VG		-	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

2 nd BPA	1	30	1 st BPA
Sharp Video	2	29	ACC
Soft Video	3	28	GND
Contrast	4	27	Sync Separator
Contrast Control	5	26	Burst Gate Pulse
Pedestal Clamp	6	25	Vert Sync Separator
Brightness Control	7	24	Ramp Generator
Y Output	8	23	Vert Driver
R - Y	9	22	(+) B _H (110V)
G - Y	10	21	AFC
B - Y	11	20	(+) B _H
Color Killer	12	19	Horiz OSC
Tint Control	13	18	X-Ray Protect
VCO	14	17	Horiz Pre-Driver Output
APC	15	16	(+) B _H (12V)

