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NTE1589 Integrated Circuit Color TV Luminance Chroma System

Description:

The NTE1589 is a multi-operational integrated circuit in a 28-Lead DIP type package which has all the necessary functions for video-chroma: such as second differential video tone control circuit (DC controlling available), contrast control, pedestal clamp, brightness adjustment circuit, video blanking circuit, BPA amplifier (peak detection shaped ACC detector), color synchronizer (APC type), and color recovery (color difference output).

Characteristics:

- Because of its second differential video tone control method of current amplifying type, amplitude of pre-shoot and over-shoot can be restrained, and sharp outline correction is available.
- 'fo' adjustment of V_{CO} is available by variable resistor
- Because of its color difference output, frequency response of video amplifier is very good.
- Because its control is all D.C. controlling, remote control is available.

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

Power Supply Voltage, V_{CC} 15V
 Power Consumption, P_D 850mW
 Operating Temperature Range, T_{opr} -15° to $+65^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+125^\circ\text{C}$

Electrical Characteristics:

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
BPA Chroma Output	E_e	burst: chroma = 1.1, burst = 100mV_{p-p}	0.54	0.67	0.85	V_{p-p}
ACC Range	E_a	burst: chroma = 1.1, burst = 10mV	0.30	0.55	0.74	V_{p-p}
Killer Sensitivity	E_k	burst $100\text{mV}_{p-p} = 0\text{dB}$	–	–44	–	dB
Color Recovery Conversion Benefit	G_{r-y}	R–Y output	6.4	7.0	7.6	V
	E_{b-y}	B–Y output/R–Y output	1.05	1.20	1.35	times
	E_{r-y}					
	E_{g-y}	G–Y output/R–Y output Angle (R–Y) – Angle (B–Y) = 105°	0.30	0.40	0.50	times
Color Recovery Output Voltage	$E_{O(DC)}$	Non-signal input, V_{CO} free-run	6.4	7.0	7.6	V

Electrical Characteristics (Cont'd):

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Color Recovery Output Operational DC Voltage	$E_{O(DC)}$	Non-signal input, VCO free-run (B-Y) - (R-Y) (R-Y) - (G-Y) (G-Y) - (B-Y)	-0.3	0	+0.3	V
Video Amplifier Benefit	G_V	At terminal 22, $V = 0,3V_{p-p}$, $f = 100\text{kHz}$ examined Pin19	10.5	12.0	13.5	times
Video Amplifier Frequency Response	f_e	Measured with -3dB, 0dB when $f = 100\text{kHz}$	-	6.5	-	MHz
Direct Current Reproduction Rate			-	75	-	%
Blanking Output Voltage			11	-	-	V

Pin Connection Diagram

