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NTE844
Integrated Circuit
Single Chip TV Chroma/Luminance Processor

Description:

The NTE844 is an integrated circuit in a 28–Lead DIP type package and contains all the required circuits functions between the video detector and the picture tube RGB driver stages of a color television receiver. The NTE844 decodes the chrominance signals and then produces three different color signals that are internally combined with the luminance to develop the RGB signals. The picture saturation, hue and brightness DC controls are externally adjustable. The AFPC, ACC, Dynamic flesh control, Beam limiting and Gate black level (Brightness)control are servo loops used to stabilize the RGB output and reduce frequent manual adjustment. The automatic beam limiter circuit reduces picture contrast and brightness to prevent excessive drive output at the picture tube.

Features:

- All chroma processing and demodulating circuitry on a single chip.
- Phase–locked subcarrier regeneration utilizing sample–and–hold techniques.
- Supplementary ACC with overload detector
- Linear DC controls for chroma gain and tint
- Dynamic “flesh correction”
- Balanced chroma demodulators with low output impedance for direct coupling
- Internal RF filtering
- Few external components
- Automatic beam limiter
- Chroma luminance tracking picture control

Absolute Maximum Ratings:

DC Supply Voltage Between Pin23 and Pin8 . . . . . 14.0V
Device Dissipation (Up to T_A = +55°C), P_D 1.27W
Derate Above T_A = +55°C . . . . . 13.3mW/°C
Operating Ambient Temperature Range, T_{opr} . . . . . –40° to +85°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Lead Temperature (During Soldering, 1/16” from case, 10sec max), T_L . . . . . +265°C

Typical Performance Characteristics:

Function	Typical Data	
Nominal Supply	11.2V	
Nominal Dissipation	500mW	
Oscillator Stability Supply Variation 10^{-14} V	5Hz	
Variation with Temperature ($\Delta T = +50°C$)	25Hz	
AFPC Characteristics DC Loop Gain	33Hz/Degree	
Pull–In Range	±500Hz	
ACC Characteristic 100% Chroma Input Level	$250mV_{p-p}$ on Red Bar	
3dB Point	at 20% Nominal Input Level	
Hue–Control Range	100°	
Saturation–Control Range	40dB Min	
Demodulator Characteristics:	**Relative Amplitude**	**Angle**
R – Y	1.0	93°
B – Y	1.2	2°
G – Y	0.3	258°
Bandwidth (Chroma)	900kHz	
Flesh Control	Primary Control in the +1 Half–Plane	
Chroma Overload Control	Two Levels	
Picture Control	40dB	
Brightness Control	Black Level Clamped on 3V to 5V Level	
Beam Limiting	On Picture and Brightness Controls	
Luma Bandwidth	5MHz Min	
Sandcastle Input 1.2V to 2.3V	Blanking	
> 3.3V	Burst gate	
Maximum Linear Output R	5V	
G	3V	
B	3.7V	

Pin Connection Diagram