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NTE1177
Integrated Circuit
TV Luminance Processor

Description:

The NTE1177 is a monolithic silicon integrated circuit in a 14–Lead DIP type package that performs the luminance processing functions of amplification; contrast, brightness and peaking control; blanking; and black–level clamping.

Features:

- Black–Level Clamping
- Linear DC Controls for Brightness, Contrast, and Peaking
- Horizontal and Vertical Blanking
- Operates with Standard or Tapped Delay Line

Absolute Maximum Ratings;

DC Supply Current (Into Pin13, Note 1), V_{CC} 59.5mA
Device Dissipation (Up to T_A = +55°C, Note 1), P_D 750mW
Derate Above 55°C . . . . . 7.9mW/°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

Note 1. Although the NTE1177 is rated for maximum dissipation of 750mW, it is recommended that the current into Pin13 be limited by external circuit resistance to 39mA for a typical voltage at Pin13 of 11.8V.

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions: Switch Numbers S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	Min	Typ	Max	Unit
		Switch Positions For Characteristic Measurements														
Static Characteristics (Bias Voltage = 6.1V)																
Voltage at Pin13	V_{13}	2	1	1	2	2	4	1	2	2	1	1	11.0	11.8	13.2	V
Quiescent Voltage	V_4	2	1	1	2	2	3	1	2	2	1	1	3.3	4.0	5.7	V
	V_7	2	1	1	2	2	2	1	2	2	1	1	7.1	7.7	8.3	V
Current Into Pin13 Pin13 Connected to +11V	I_{13}	2	1	1	2	2	3	1	2	2	1	2	10	19	30	mA

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Test Conditions: Switch Numbers S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	Min	Typ	Max	Unit
	Switch Positions For Characteristic Measurements														
Dynamic Characteristics (Bias Voltage = 5.8V)															
Wide–Band Gain (Note 2)	1	1	1	2	1	2	1	1	1	2	1	6.0	8.3	11.0	dB
Contrast Gain Reduction (Note 3)	1	1	1	2	1	2	1	1	2	2	1	27	30	–	dB
Peaking Gain (Note 2)	1	1	2	2	1	2	1	1	1	2	1	15.0	18.4	22.0	dB
Peaking Gain Reduction (Note 4)	1	1	2	2	1	2	1	1	1	2	1	16	18	–	dB
Max. Intermodulation Distortion 2V (Note 5)	1	–	1	1	1	2	–	2	1	2	1	–	20	–	%
3V (Note 6)	1	–	1	1	1	2	–	2	1	2	1	–	40	–	%

Note 2. Set 50kHz generator for 100mV$_{P-P}$ Adjust R1 Peaking Control for minimum setting. Measure wide–band gain at Pin7.

Note 3. Set 50kHz generator for 100mV$_{P-P}$. Adjust R1 for minimum setting. Measure contrast gain reduction at Pin7.

Note 4. Set 50kHz generator for 100mV$_{P-P}$. Adjust R1 for maximum setting. Measure peaking gain reduction at Pin7.

Note 5. Adjust R1 for minimum setting. With S2 at switch position 1 and S7 at switch position 3, set 50kHz generator for 2V$_{P-P}$. Then with S2 at switch position 2, set 1MHz generator for 100mV$_{P-P}$. Then with S7 at switch position 2, measure downward modulation of the 1MHz signal due to the 50kHz signal.

Note 6. Repeat step 5 except that the 50kHz generator must be set at 3V$_{P-P}$.

Pin Connection Diagram