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NTE818 Integrated Circuit TV Luminance Processor

Features:

- Luma/Chroma Tracking
- Automatic Beam Limiter
- DC Restoration
- Luma/Chroma Vertical Blanking
- Single DC Gain Control
- Low External Component Count

Description:

A single DC picture control adjusts the gain of both the low-level video and chroma amplification in color TV receivers which employ the NTE818 Luminance Processor. Automatic brightness limiting (ABL) and vertical maintaining a constant black level. During the horizontal blanking interval, the black level is determined by clamping the black-level reference (the “back porch”). This allows for 100% DC restoration.

Absolute Maximum Ratings:

Supply Voltage, V_{CC} 15V
 Luma Sink Current, I_g 30mA
 Package Power Dissipation, P_D 670mW
 Derate Above 70°C 8.3mW/°C
 Operating Temperature Range, T_A -40° to +85°C
 Storage Temperature Range, T_S -65° to +150°C

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Test Pin	Position of Test Switches							Min	Max	Unit
		A	B	C	D	E	F	G			
Static Characteristics											
Supply Current	14	1	4	2	1	5	2	3	15	30	mA
Luma Input Current	15	1	4	2	1	5	2	3	425	570	μA
Luma Output Voltage	13	1	4	2	1	5	2	2	1.8	4.5	V
	9	2	2	2	2	3	1	1	5.3	7.5	V
	9	2	3	2	2	3	1	1	11.6	13.0	V
	9	2	1	2	2	1	1	1	14.1	15.7	V
Luma Blanking Current	9	3	1	2	2	3	1	1	–	1.0	μA
Video Output Short Circuit Current	11	1	4	1	1	5	2	2	5.0	14	mA
Clamped Video Level	12	1	4	2	1	1	1	1	2.5	3.9	V
Clamp Leakage Current	12	1	4	2	1	4	1	1	0	365	nA
Chroma Output Voltage	6	2	4	2	1	5	2	3	7.3	9.1	V
	6	3	1	2	2	3	1	1	10.3	11.6	V
Gate Leakage Current	10	1	4	2	1	2	1	1	0	400	nA
Loop Filter Voltage	1	1	4	2	1	2	1	1	5.0	5.8	V

Electrical Characteristics (Cont'd): ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Test Pin	Position of Test Switches							Min	Max	Unit
		A	B	C	D	E	F	G			
Dynamic Characteristics											
Video Output	Minimum	9	1	1	1	2	(Test 1)		0.20	0.56	V_{rms}
	Mid	9	2	1	1	2			0.80	1.50	V_{rms}
	Maximum	9	3	1	1	2	(Test 2)		1.50	2.60	V_{rms}
Video Gain Ratio			Test 2/Test 1 (Test A)					5.0	8.5		
Video Frequency Response	9	3	1	1	2	f = 3.58MHz		1.0	2.6	V_{rms}	
Limited Video Gain	9	3	1	2	2			0.2	0.4	V_{rms}	
Chroma Output	Minimum	6	1	2	1	1	(Test 3)		50	150	mV_{rms}
	Mid	6	2	2	1	1			260	440	mV_{rms}
	Maximum	6	3	2	1	1	(Test 4)		400	750	mV_{rms}
Chroma Gain Ratio			Test 4/Test 3 (Test B)					5.0	8.5		
Limited Chroma Gain	6	3	2	2	1			35	150	mV_{rms}	
Video/Chroma Gain Ratio			Test A/Test B					0.85	1.15		

Pin Connection Diagram

