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NTE1437 Integrated Circuit VIR Signal Processor

Description:

The NTE1437 is an integrated circuit designed for color TV VIR (Vertical Interval Reference) signal processing circuits (with auto tint compensation circuit).

Features:

- Incorporating VIR signal discriminator color control, tint control and Y signal amplifier on a single chip, easier for compact set design.
- Reduction in external components
- No adjustment required

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

Supply Voltage, V_{8-21}	14.4V
Supply Voltage, V_{17-21}	6.1V
Circuit Voltage, V_{5-21}	0 to 14.4V
Circuit Voltage, V_{6-21} , V_{7-21}	-3 to +6V
Circuit Voltage, V_{10-21} , V_{12-21} , V_{18-21}	0 to V_{8-21} V
Circuit Voltage, V_{24-21}	0V
Circuit Current, I_5	0 to 20mA
Circuit Current, I_9	-1 to +3mA
Circuit Current, I_{20}	-3 to +1mA
Circuit Current, I_{23}	-3 to 0mA
Power Dissipation, P_D	630mW
Operating Ambient Temperature Range, T_{opr}	-20° to +70°C
Storage Temperature Range, T_{stg}	-20° to +150°C

Note * . + and - are flow-in and flow-out currents to/from the circuit, respectively.

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

Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current		I_8	$V_{8-21} = 12\text{V}$ $V_{17-21} = 5.1\text{V}$	20	25.5	31	mA
		I_{17}		5	12	19	mA
Output Voltage (Tint Manual)	"H" Level	$V_{9-21(\text{H})}$		10.3	11	11.7	V
	"L" Level	$V_{9-21(\text{L})}$		0.6	1.3	2.0	V
Output Voltage (Color Manual)	"H" Level	$V_{20-21(\text{H})}$		9.5	10.2	10.9	V
	"L" Level	$V_{20-21(\text{L})}$		0	–	0.3	V
Output Voltage (Tint Auto)	"H" Level	$V_{11-21(\text{H})}$		9.5	10.2	10.9	V
	"L" Level	$V_{11-21(\text{L})}$		0.4	1.7	2.7	V
Output Voltage (Color Auto)	"H" Level	$V_{19-21(\text{H})}$		10.1	10.9	11.7	V
	"L" Level	$V_{19-21(\text{L})}$		0.4	1.8	3.1	V
Voltage Amplification (Y Amp.)		A_V	Pin 4 output (SW 1:1) for Pin 1 video signal input ($1V_{p-p}$)	1.75	1.95	2.15	times
VIR Directional Level		$V_{(\text{VIR})}$	Pin 2 VIR signal level (SW 1:1) at the start of LED ON	0.23	0.28	0.33	V
Pulse Width (19H)		t_w	19H pulse width of Pins 14 & 16 (SW 1:2)	7	12	17	μs
Sensitivity	Tint Manual Control	$S_{(1)}$	Differential voltage ratio between Pins 9 & 12	0.83	0.94	1.05	times
	Color Manual Control	$S_{(2)}$	Differential voltage ratio between Pins 20 & 18 (SW 1:2)	0.86	0.97	1.08	times
	Tint Auto Control	$S_{(3)}$	Differential voltage ratio between Pins 9 & 13 (SW 1:1)	40	43	46	dB
	Color Auto Control	$S_{(4)}$	Differential voltage ratio between Pins 20 & 15 (SW 1:2)	41.5	44.5	47.5	dB
	Tint Pre-Emphasis Control	$S_{(5)}$	Differential voltage ratio between Pins 9 & 10 (SW 1:1)	–1.5	–1.3	–1.1	times

Pin Connection Diagram
(Front View)



