

NTE7084 Integrated Circuit Color TV Sync Deflection Circuit

Description:

The NTE7084 is an IC containing not only the main functions required to achieve synchronization and deflection in color television receivers but also a generator of horizontal, vertical blanking pulses, and a generator of burst gate pulses (sandcastle type) in an 18-Lead DIP type package. This is a multi-functional device ideally suited for use in color television receivers aiming at high-quality picture reproduction.

Functions:

- Synchronizing Separation
- Vertical Drive
- X-Ray Protection
- Sandcastle Pulse (Burst Gate Pulse + Horizontal Blanking Pulse)
- Composite Blanking Pulse (Vertical + Horizontal Blanking Pulse)
- Vertical Oscillation
- Horizontal AFC
- Horizontal Oscillation

Features:

- Horizontal and Vertical Oscillations are Stable Against Variations in Ambient Temperature and Supply Voltage due to Small Warm-Up Drift.
- Small Variation in Horizontal Oscillation Frequency
- Good Linearity and Interlace because DC Bias at Vertical Output Stage is Subjected to Sampling Control Within Retrace Time.
- Vertical Blanking Pulse Width can be set freely by Peripheral Parts.
- Minimized Picture Distortion because AFC Circuit is Defeated During Vertical Trigger Pulse Input Period.
- Multifunctional and Compact

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

Maximum Supply Voltage, V_{CC14}	14V
Maximum Current Dissipation, I_{CC18}	16mA
Maximum Applied Voltage, V_{11}	-6V
Allowable Power Dissipation ($T_A \leq +65^\circ\text{C}$), P_{Dmax}	570mW
Operating Temperature Range, T_{opr}	-20° to $+85^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+125^\circ\text{C}$

Recommended Operating Conditions: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Recommended Supply Voltage, V_{CC14}	12V
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Electrical Characteristics: ($T_A = +25^{\circ}\text{C}$, $V_{CC14} = 12\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
V_{CC14} Current Dissipation	I_{CC14}		13.5	–	29.0	mA
V_{CC18} Supply Voltage	V_{CC18}		11.8	–	13.2	V
Zener Bias Minimum Current			–	–	13	mA
Sync Separator Input DC Level			9.0	–	9.6	V
Sync Signal Peak Value			9.5	–	11.5	V
Burst Gate Pulse Peak Value (SCP)			9.5	–	11.5	V
Burst Gate Pulse Delay Time 1 (SCP)	T_{BR}		–	–	0.5	μs
Burst Gate Pulse Delay Time 2 (SCP)	T_{BF}		3.6	–	4.2	μs
Horizontal Blanking Pulse Peak Value (SCP)			2.7	–	3.3	V
Horizontal Blanking Pulse Peak Value (CBP)		$I = 1\text{mA}$	12.7	–	13.5	V
Vertical Blanking Pulse Peak Value (CBP)		Load Resistance $R = 33\text{k}\Omega$	7.2	–	8.2	V
Vertical Frequency Pull-In Range		Vertical Sync 60Hz	9.0	–	11.0	Hz
Vertical Free-Running Frequency	f_V	$V_{R1} = f_V$ center 55Hz	50	–	60	Hz
Supply Voltage Dependence of Vertical Frequency		$V_{14} = 12\text{V} \pm 1\text{V}$, 55Hz at 12V	–0.5	–	0.5	Hz
Middle Point Control Threshold Level			3.8	–	4.4	V
Vertical Blanking Threshold Level			5.0	–	5.7	V
Vertical Oscillation Start Voltage			–	–	4	V
Temperature Characteristic of Vertical Frequency		$T_A = -10^{\circ}$ to $+60^{\circ}\text{C}$	–0.028	–	0.028	Hz/ $^{\circ}\text{C}$
Vertical Driver Amplification Factor			12	–	17	dB
Horizontal AFCD.C Loop Gain		+sign at $V_1 = 5\text{V}$, –sign at $V_1 = 1\text{V}$	± 0.6	–	± 1.5	mA
Horizontal Free-Running Frequency	f_H	f_H center 15.73kHz	–750	–	750	Hz
Horizontal Oscillation Start Voltage			–	–	4	V
Supply Voltage Dependence of Horizontal Frequency		$V_Z - V_Z \times 90\%$	–50	–	50	Hz

Pin Connection Diagram



