

NTE7062 Integrated Circuit CRT Display Synchronization Deflection Circuit

Description:

The NTE7062 is a sync deflection circuit in a 20-Lead DIP type package. When used in combination with the NTE1773 or the NTE1797 (for vertical output use) this device forms a sync-deflection circuit that meets every requirement for CRT display use.

So far, ICs for color TV use have been applied to the sync-deflection circuit for CRT display use and general purpose ICs such as one-shot multivibrators, inverters, and a lot of transistors have been used to form the peripherals such as sync input interface, horizontal phase shifter. The NTE7062 contains these peripherals on chip and adopts a stable circuit for horizontal oscillation from 15kHz to 100kHz aiming at improving the characteristics required for CRT display use.

Features:

- The Vertical Pull-In Range is Approximately 20Hz at Vertical Sync 50Hz/60Hz.
- The Horizontal Oscillation Frequency can be Adjusted Stably from 15kHz to 100kHz.
- The Horizontal Display can be Shifted Right/Left.
- The Horizontal/Vertical Sync Input can be Used Intact Regardless of the Difference in Pulse Polarity and Pulse Width.
- The AFC Feedback Sawtooth Wave can be Obtained by Simply Applying a Flyback Pulse to the IC as a Trigger Pulse.
- Any Duty of the Horizontal Pulse can be Set.
- Good Vertical Linearity because DC Bias at Vertical Output Stage is Subjected to Sampling Control Within Retrace Time.

On-Chip Functions:

Horizontal Block

- AFC
- Horizontal OSC
- X-Ray Protector
- Horizontal Phase Shifter
- AFC Sawtooth Wave Generator
- Horizontal Pulse Duty Setting

Vertical Block

- Vertical OSC
- Vertical Sawtooth Wave Generator
- Sampling Type DC Voltage Control

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

Maximum Supply Voltage, V_{10}, V_{20}	14V
Allowable Power Dissipation ($T_A \leq +65^\circ\text{C}$), P_{dmax}	780mW
Operating Temperature Range, T_{opr}	-20° to $+85^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+125^\circ\text{C}$

Operating Conditions: ($T_A = +25^\circ\text{C}$ unless otherwise specified)Recommended Supply Voltage, V_{10} , V_{20} 12VOperating Voltage Range, V_{10} , V_{20} 9 to 13.5V**Electrical Characteristics:** ($T_A = +25^\circ\text{C}$, V_{CC10} , $V_{CC20} = 12\text{V}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
V_{CC10} Current Dissipation	I_{10}	V_{CC10}	12	–	30	mA
V_{CC20} Current Dissipation	I_{20}	V_{CC20}	5	–	12	mA
Vertical Frequency Pull-In Range	V_{PIN}	Vertical Sync 60Hz	19	–	23	Hz
Vertical Free-Running Frequency	f_V	f_V center 55Hz	50	–	60	Hz
Increased/Reduced Voltage Characteristic of Vertical Frequency	Δf_{VV}	$V_{20} = 12\text{V} \pm 1\text{V}$, 55Hz at 12V	–0.5	–	0.5	Hz
Midpoint Control Threshold Level			3.8	–	4.4	V
Vertical OSC Start Voltage	F_{Vst}		–	–	4.0	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	G_V		12	–	18	dB
Amplification Factor Horizontal AFC DC Loop Gain	I_{AFC}		± 1.0	–	± 1.9	mA
Horizontal Free-Running Frequency	f_H	f_H center 15.734kHz	–750	–	750	Hz
Horizontal OSC Start Voltage	f_{Hst}		–	–	4.0	V
Increased/Reduced Voltage Characteristic of Horizontal Frequency	Δf_{HV}	$V_{10} = 12\text{V} \pm 1\text{V}$, 15.734kHz at 12V	–50	–	+50	Hz
Temperature Characteristic of Horizontal Frequency		$T_A = -10^\circ$ to $+60^\circ\text{C}$	–2.9	–	+2.9	Hz/ $^\circ\text{C}$
Horizontal Output Drive Current	I_{13}		6	–	12	mA
Comparison Wave Generation Input Operating Voltage	V_4		0.6	–	0.9	V
Pin13 Voltage at Holddown Operation Start Mode	V_{13}		0.5	–	0.8	V

Pin Connection Diagram

