

## 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, $T_{opr}$ .....	$-20^\circ$ to $+85^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ 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:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC10, 20} = 12\text{V}$  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	$\Delta f_{VV}$	$V_{20} = 12\text{V} \pm 1\text{V}$ , 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	$I_{AFC}$		$\pm 1.0$	–	$\pm 1.9$	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	$\Delta f_{HV}$	$V_{10} = 12\text{V} \pm 1\text{V}$ , 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

