



ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089  
<http://www.nteinc.com>

## NTE7123 Integrated Circuit Sync Deflection Circuit for Color TV

**Description:**

The NTE7123 is an integrated circuit that has a wide vertical pull-in range of 20Hz and contains a generator of horizontal, vertical blanking as well as the main functions required to provide synchronization and deflection in color CRT displays and also accepts TTL input. It is a multifunctional IC aiming at high-quality picture reproduction.

**Features:**

- Non-adjusting at vertical sync 50Hz/60Hz due to vertical pull-in range of 20Hz.
- 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.
- Any vertical blanking pulse width can be set by peripheral parts.
- The AFC defeat function is eliminated during vertical trigger period to use the NTE7123 as horizontal/vertical sync separate input type only.
- Multifunctional and small-sized 6 Pin Dual-In-Line Package.

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

|   |                                     |
|---|-------------------------------------|
| Maximum Supply Voltage, $V_{CC13}$ .....                                    | 14V                                 |
| Maximum Current Dissipation, $I_{CC16}$ .....                               | 16mA                                |
| Allowable Power Dissipation ( $T_A = +65^\circ\text{C}$ ), $P_{Dmax}$ ..... | 570mW                               |
| Operating Temperature Range, $T_{opr}$ .....                                | $-20^\circ$ to $+85^\circ\text{C}$  |
| Storage Temperature Range, $T_{stg}$ .....                                  | $-55^\circ$ to $+125^\circ\text{C}$ |

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC13} = 12\text{V}$ ,  $I_{CC16} = 13\text{mA}$  unless otherwise specified)

| Parameter  | Test Conditions                                     | Min    | Typ | Max   | Unit                 |
|--|---|--------|-----|-------|----------------------|
| $V_{CC13}$ Current Dissipation                         | $I_{CC13}$  | 14.7   | –   | 22.2  | mA                   |
| $V_{CC16}$ Supply Voltage                              |   | 11.8   | –   | 13.2  | V                    |
| Vertical Frequency Pull-In Range                       |   | 19.0   | –   | 23.0  | Hz                   |
| Vertical Free-Running Frequency                        | $f_v$ center 55Hz                                   | 50     | –   | 60    | Hz                   |
| Supply Voltage Dependence of Vertical Frequency        | $V_{13} = 12 \pm 1\text{V}$ , 55Hz at 12V           | -0.5   | –   | 0.5   | Hz                   |
| Temperature Characteristics 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 Free-Running Frequency                      | $f_H$ center 15.73kHz                               | -750   | –   | 750   | Hz                   |
| Reduced Voltage Characteristic of Horizontal Frequency | $V_Z - V_Z \times 90\%$                             | -50    | –   | 50    | Hz                   |
| Temperature Characteristic of Horizontal Frequency     | $T_A = -10^\circ$ to $+60^\circ\text{C}$ (IC Alone) | -3.4   | –   | 3.4   | Hz/ $^\circ\text{C}$ |
| Horizontal Output Pulse Width                          | $f_H = 15.73\text{kHz}$                             | 21.5   | –   | 26.5  | $\mu\text{s}$        |
| Horizontal Output Drive Current                        |   | 6.6    | –   | 10.0  | mA                   |

**Pin Connection Diagram**



