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## 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**



