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NTE1417 Integrated Circuit Deflection Signal Processor

Description:

The NTE1417 is an integrated circuit in a 24-Lead DIP type package designed for color TV deflection signal processing circuits.

Features:

- High Loop Gain in Vertical Circuit and Non-Adjustment for Vertical Linearity
- Incorporating Vertical and Horizontal Oscillator Circuit. Operations Highly Stable Against Changes in Supply Voltage and Temperature.
- Built-In High Tension Protector Circuit

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

Supply Voltage

| | |
|----------------------|-------|
| $V_{20-16(4)}$ | 14.4V |
| $V_{8-4(16)}$ | 15.0V |

Circuit Voltage

| | |
|---------------------|---------------------|
| $V_{1-4,16}$ | -3V to 7V |
| $V_{12-4,16}$ | 0V to $V_{8-4,16}$ |
| $V_{14-16,4}$ | 0V to $V_{20-16,4}$ |
| $V_{15-16,4}$ | 0V to $V_{20-16,4}$ |
| $V_{23-4,16}$ | 0V to 6V |
| $V_{24-4,16}$ | -3V to 1V |

Circuit Current

| | |
|----------------|-----------------|
| I_5 | -1.5mA to 1.5mA |
| I_6 | -1.2mA to 0mA |
| I_7 | -1.4mA to 1.2mA |
| I_{10} | 0mA to 10mA |
| I_{15} | 0mA to 3mA |
| I_{17} | -2mA to 0mA |
| I_{19} | 0mA to 40mA |

Power Dissipation, P_D 600mW

Operating Ambient Temperature Range, T_{opr} -20° to $+70^\circ\text{C}$

Storage Temperature Range, T_{stg} -55° to $+150^\circ\text{C}$

Electrical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|------------------------|---|------|------|------|-------------------------|
| Circuit Current | I_B | $V_{CC} = 12\text{V}$ | 7.7 | 10.0 | 12.3 | mA |
| | I_{20} | | 20.8 | 26.0 | 31.2 | mA |
| Oscillation Starting Voltage ($V \bullet O_{SC}$) | $V_{OSC-S(1)}$ | $f_{VO} = 40\text{Hz to } 70\text{Hz}$, $0.7V_{P-P}$ or more Output of Amplification | – | – | 6.2 | V |
| Vertical Oscillation Frequency | f_{VO} | $V_{CC} = 12\text{V}$ | 53.0 | 55.6 | 58.0 | Hz |
| f_{VO} Change with Supply Voltage | $\Delta f_{VO}/V_{CC}$ | $f_{VO} _{9.6\text{V}}$ to $f_{VO} _{14.4\text{V}}$ | 0 | 0.84 | 1.0 | Hz |
| Pulse Width ($V \bullet O_{SC}$) | τ | $V_{CC} = 12\text{V}$ | 500 | – | 820 | μs |
| Vertical Pull-In Range | f_{VP} | $R_{OSC(V)} = 9.76\text{k}\Omega$, $f_{VO} = 48\text{Hz}$ | – | – | 50 | Hz |
| f_{VO} Change with Ambient Temperature | $\Delta f_{VO}/T_A$ | $V_{CC} 2 = 12\text{V}$, $T_A = -20^\circ$ to $+70^\circ\text{C}$ | 0 | – | 1.0 | Hz |
| Oscillation Starting Voltage ($H \bullet O_{SC}$) | $V_{OSC-S(2)}$ | $f_{HO} = 10\text{kHz to } 20\text{kHz}$, $3V_{P-P}$ ($V_{CC} = 6.5\text{V}$) | 5.0 | – | 6.5 | V |
| Horizontal Oscillation Frequency | f_{HO} | $V_{CC} = 12\text{V}$ | 15.2 | – | 16.5 | kHz |
| f_{HO} Change with Supply Voltage | $\Delta f_{HO}/V_{CC}$ | $f_{HO} _{14.4\text{V}}$ to $f_{HO} _{9.6\text{V}}$ | 0 | – | 100 | Hz |
| Pulse Width Duty Ratio ($H \bullet O_{SC}$) | τ | $V_{CC} = 12\text{V}$ | 37 | – | 41 | % |
| f_{HO} Control Sensitivity | β | $I_O = \pm 100\mu\text{A}$ | 17.0 | 18.9 | 20.8 | $\text{Hz}/\mu\text{A}$ |
| Protector Operating Voltage | V_{12-4} | $V_{12-4} = 6.9\text{V}$ | 5.98 | – | 6.18 | V |
| f_{HO} Change with Ambient Temperature | $\Delta f_{HO}/T_A$ | $V_{CC} 1 = 12\text{V}$, $T_A = -20^\circ$ to $+70^\circ\text{C}$ | 0 | – | 200 | Hz |
| AFC Loop gain | f_{AFC} | $\mu \times \beta$ | 4500 | 6050 | 7600 | Hz/rad |

Pin Connection Diagram



