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NTE1804 Integrated Circuit Vertical Deflection Circuit for Large Screen TV

Description:

The NTE1804 is an integrated circuit in a 13-Lead SIP type package designed for vertical deflection in video monitors and large screen color television receivers, e.g. 30AX and PIL-S4 systems.

Features:

- Oscillator; Switch Capability for 50Hz/60Hz Operation
- Synchronization Circuit
- Blanking Pulse Generator with Guard Circuit
- Sawtooth Generator with Buffer Stage
- Preamplifier with Fed-Out Inputs
- Output Stage with Thermal and Short-Circuit Protection
- Flyback Generator
- Voltage Stabilizer

Absolute Maximum Ratings:

| | |
|--------------------------------------------------|----------------|
| Supply Voltage (V_9), V_{CC} | 40V |
| Supply Voltage Output Stage (Pin5), V_5 | 58V |
| Voltages | |
| Pin3, V_3 | 7V |
| Pin13, V_{13} | 7V |
| Pin4 & Pin10, V_4 , V_{10} | 24V |
| Pin6, V_6 | 58V |
| Pin6, $-V_6$ | 0V |
| Pin7 & Pin11, V_7 , V_{11} | 40V |
| Currents | |
| Pin1, I_1 | 0mA |
| Pin1, $-I_1$ | 1mA |
| Pin2, $\pm I_2$ | 10mA |
| Pin3, I_3 | 0mA |
| Pin3, $-I_3$ | 5mA |
| Pin7, I_7 | 1.2A |
| Pin7, $-I_7$ | 1.5A |
| Pin11, I_{11} | 50mA |
| Pin11, $-I_{11}$ | 1mA |
| Pin12, I_{12} | 3mA |
| Pin12, $-I_{12}$ | 0mA |
| Operating Ambient Temperature Range, T_A | -20° to +85°C |
| Storage Temperature Range, T_{stg} | -25° to +150°C |

Note 1. Pin5, Pin6, and Pin8: internally limited by the short-circuit protection circuit.

Note 2. Total power dissipation: internally limited by the thermal protection circuit.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|------------------------------------------|---------------------------|-------------------------------------------|-------------|-----------------|--------------|------------------|
| Supply Voltage | V_{CC} | | 9 | – | 30 | V |
| Output Voltage | V_6 | $-I_6 = 1.1\text{A}$ | $V_5 - 2.2$ | $V_5 - 1.9$ | – | V |
| | | $I_6 = 1.1\text{A}$ | – | 1.3 | 1.6 | V |
| Flyback Generator Output Voltage | V_7 | $-I_6 = 1.1\text{A}$ | – | $V_{CC} - 2.2$ | – | V |
| Peak Output Current | $\pm I_6$ | | – | – | 1.2 | A |
| Flyback Generator Peak Current | $\pm I_7$ | | – | – | 1.2 | A |
| Feedback | | | | | | |
| Input Quiescent Current | $-I_4, -I_{10}$ | | – | 0.1 | – | μA |
| Synchronization | | | | | | |
| Sync Input Pulse | V_2 | | 1 | – | 12 | V |
| Tracking Range | | | – | 28 | – | % |
| Oscillator/Sawtooth Generator | | | | | | |
| Oscillator Frequency Control Input Range | V_1 | | 6 | – | 9 | V |
| Sawtooth Generator Output Voltage | V_3 | | 0 | – | $V_{CC} - 1$ | V |
| | V_{11} | | 0 | – | $V_{CC} - 2$ | V |
| Sawtooth Generator Output Current | $-I_3$ | | 0 | – | 4 | mA |
| | I_{11} | | –2 | – | – | μA |
| | | | – | – | +30 | mA |
| Oscillator Temperature Dependency | $(\Delta f/f)/\Delta T_C$ | $T_C = +20^\circ$ to $+100^\circ\text{C}$ | – | 10^4 | – | $^\circ\text{C}$ |
| Oscillator Voltage Dependency | $(\Delta f/f)/\Delta V_S$ | $V_S = 10\text{V}$ to 30V | – | 4×10^4 | – | V^{-1} |
| Blanking Pulse Generator | | | | | | |
| Output Voltage | V_2 | $V_S = 24\text{V}, I_2 = 1\text{mA}$ | – | 18.5 | – | V |
| Output Current | $-I_2$ | | – | – | 3 | mA |
| Output Resistance | R_2 | | – | 410 | – | Ω |
| Blanking Pulse Duration | t_B | At 50Hz Sync | – | 1.4 ± 0.07 | – | ms |
| 50Hz/60Hz Switch Capability | | | | | | |
| Saturation Voltage, LOW Voltage Level | V_{12} | | – | 1 | – | V |
| Output Leakage Current | I_{12} | | – | 1 | – | μA |

Pin Connection Diagram
(Front View)

