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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
<b>Feedback</b>						
Input Quiescent Current	$-I_4, -I_{10}$		–	0.1	–	$\mu\text{A}$
<b>Synchronization</b>						
Sync Input Pulse	$V_2$		1	–	12	V
Tracking Range			–	28	–	%
<b>Oscillator/Sawtooth Generator</b>						
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	–	–	$\mu\text{A}$
			–	–	+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 $30\text{V}$	–	$4 \times 10^4$	–	$\text{V}^{-1}$
<b>Blanking Pulse Generator</b>						
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	–	$\Omega$
Blanking Pulse Duration	$t_B$	At 50Hz Sync	–	$1.4 \pm 0.07$	–	ms
<b>50Hz/60Hz Switch Capability</b>						
Saturation Voltage, LOW Voltage Level	$V_{12}$		–	1	–	V
Output Leakage Current	$I_{12}$		–	1	–	$\mu\text{A}$

**Pin Connection Diagram**  
(Front View)

