

NTE7045 Integrated Circuit Horizontal Signal Processing Circuit for CRT Displays

Features:

- Processing for both Negative and Positive Sync. Signal
- Wide Horizontal Oscillation Frequency Range: 14kHz to 60kHz
- Wide Output Pulse Width Selection: 2 μ s to 40 μ s

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

Supply Voltage, V_{CC}	13.2V
Supply Current, I_{CC}	50mA
Power Dissipation, P_D	1140mW
Operating Ambient Temperature Range, T_{opr}	-20° to $+70^\circ\text{C}$
Storage Temperature Range, T_{stg}	-40° to $+150^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Circuit Current	I_{tot}	$V_{CC} = 11\text{V}$	30	45	60	mA
Polarity Changeover Voltage	V_{2-7}	Positive Polarity Signal Input	0	–	0.4	V
		Negative Polarity Signal Input	2.5	–	5.5	V
Horizontal OSC Starting Voltage	$V_{osc-s (H)}$	$f_{HO} = 12\text{kHz to } 19\text{kHz}$	7.5	–	–	V
Horizontal OSC Frequency	$f_{HO(1)}$	$V_{CC} = 11\text{V}, C = 4400\text{pf}$	15.0	15.75	16.5	kHz
Horizontal OSC Enable Frequency	$f_{HO(2)}$	$V_{CC} = 11\text{V}, C = 820\text{pf}, 5600\text{pf}$	14	–	60	kHz
f_{HO} Change with Supply Voltage	$\Delta f_{HO}/V_{CC}$	$f_{HO} = 15.75\text{kHz},$ $f_{HO} 9.9\text{V} - f_{HO} 12.1\text{V}$	–	40	130	Hz
f_{HO} Change with Ambient Temperature	$\Delta f_{HO}/T_A$	$f_{HO} = 15.75\text{kHz},$ $f_{HO} -20^\circ\text{C} - f_{HO} +60^\circ\text{C}$	–	–	260	Hz
OSC Frequency Control Sensitivity	β	$\Delta I_O = \pm 25\mu\text{A}$	16.0	17.6	19.3	Hz/ μA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Loop Gain	f_{DC}	$\mu \times \beta$	—	700	—	Hz/ μs
Output Pulse Width	$\tau_{HO(1)}$	$V_{CC} = 11\text{V}$, $R = 20\text{k}\Omega$, $C = 6800\text{pf}$	17.8	19.4	21.2	μs
Output Enable Pulse Width	$\tau_{HO(2)}$	$V_{CC} = 11\text{V}$, $R = 20\text{k}\Omega$, $C = 330\text{pf}$, 18000pf	2	—	40	μs
Output Pulse Width Supply Voltage Change	$\Delta\tau_{HO}/V_{CC}$	$V_{CC} = 9.9\text{V}$ to 12.1V	—	—	5	%
Output Pulse Width Temperature Change	$\Delta\tau_{HO}/T_A$	$V_{CC} = 11\text{V}$, $T_A = -20^\circ$ to $+60^\circ\text{C}$	—	—	5	%
OSC Output Saturation Voltage	V_{8-7}	$V_{CC} = 11\text{V}$, $V_{10-7} = 1\text{V}$	—	—	2	V
OSC Output Driving Current	V_{8-7}	$V_{CC} = 11\text{V}$, $V_{10-7} = 1\text{V}$	300	—	—	mA
X-Ray Protection Circuit Operation Starting Voltage	V_{6-7}	$V_{CC} = 11\text{V}$	0.5	0.64	0.75	V

Pin Connection Diagram
(Front View)

