

NTE1683 Integrated Circuit Horizontal/Vertical Processing Circuit

Description:

The NTE1683 is an integrated circuit in an 18-Lead DIP type package designed for color TV deflection signal processing circuits.

Features:

- An auto-synchronized circuit, composed of a phase comparator circuit and a frequency-discriminator circuit
- Vertical and horizontal oscillator circuit operations which are 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

$V_{7-5, 10}$	13.8V
$V_{15-5, 10}$	13.8V

Circuit Voltage

$V_{1-5, 10}$	6V
$V_{3-5, 10}$	13.8V
$V_{4-5, 10}$	13.8V
$V_{6-5, 10}$	13.8V
$V_{9-5, 10}$	9V
$V_{12-5, 10}$	4.5V
$V_{13-5, 10}$	13.8V
$V_{18-5, 10}$	13.8V

Circuit Current

I_1	-1/1mA
I_2	-10/10mA
I_3	-3/50mA
I_4	-1/1mA
I_6	0/500mA
I_8	-2/0mA
I_9	-1/0mA
I_{11}	-40/2mA
I_{12}	-1/3mA
I_{13}	0/40mA
I_{16}	-3/3mA
I_{18}	0/1mA

Power Dissipation, P_D 940mW

Operating 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	$I_{7(1)}$		14.6	19.5	24.4	mA
	$I_{7(2)}$		18.7	25.0	31.3	mA
Horizontal Pulse Width	t_{sync}	$V_{\text{CC}1} = 12\text{V}$, $V_I = 1V_{\text{P-P}}$	4.7	5.0	5.3	μs
Vertical Oscillation Starting Voltage	$V_{\text{OSC-S}(1)}$	$f_{\text{VO}} = 40$ to 60Hz , $0.7V_{\text{P-P}}$	–	–	6.2	V
Vertical Oscillation Frequency	f_{VO}	$V_{\text{CC}1} = 12\text{V}$	47	50	53	Hz
Vertical Pulse Width	$\tau_{\text{vo}(1)}$	$V_{\text{CC}1} = 12\text{V}$	0.5	0.7	0.9	ms
	$\tau_{\text{vo}(2)}$		–	0.95	–	ms
Vertical Pull-In Range	f_{vp}	$V_{\text{in}} = 2.0V_{\text{P-P}}$	–	33	38	Hz
Change with Ambient Temperature	$\Delta f_{\text{VO}}/T_A$	$V_{\text{CC}1} = 12\text{V}$, $T_A = -20^{\circ}$ to $+70^{\circ}\text{C}$	0	–	2	Hz
Horizontal Oscillation Starting Voltage	$V_{\text{OSC-S}(2)}$	$f_{\text{ho}} = 10$ to 20kHz , $1V_{\text{P-P}}$, $V_{\text{CC}2} = 12\text{V}$	5.0	–	6.5	V
Horizontal Oscillation Frequency	f_{HO}	$V_{\text{CC}2} = 12\text{V}$	15.0	15.75	16.25	V
Pulse Width Duty Ratio (H-Osc)	τ	$V_{\text{CC}2} = 12\text{V}$	–	50	–	%
Control Sensitivity	β	$I_O = \pm 100\mu\text{A}$	23.5	25.5	27.5	Hz/ μA
Protector Operating Voltage	V_{4-5}		0.73	–	0.86	V
Change with Ambient Temperature	$\Delta f_{\text{HO}}/T_A$	$V_{\text{CC}2} = 12\text{V}$, $T_A = -20^{\circ}$ to $+70^{\circ}\text{C}$	–200	–	200	Hz
AFC Loop Gain	f_{APC}	$\mu \times \beta$	–	7400	–	kHz/rad

Pin Connection Diagram

