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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°C
Storage Temperature Range, T _{stg}	-55° to +150°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}	$V_{CC1} = 12\text{V}, V_I = 1V_{P-P}$	4.7	5.0	5.3	μs
Vertical Oscillation Starting Voltage	$V_{\text{OSC-S}(1)}$	$f_{VO} = 40 \text{ to } 60\text{Hz}, 0.7V_{P-P}$	–	–	6.2	V
Vertical Oscillation Frequency	f_{VO}	$V_{CC1} = 12\text{V}$	47	50	53	Hz
Vertical Pulse Width	$\tau_{vo(1)}$	$V_{CC1} = 12\text{V}$	0.5	0.7	0.9	ms
	$\tau_{vo(2)}$		–	0.95	–	ms
Vertical Pull-In Range	f_{vp}	$V_{in} = 2.0V_{P-P}$	–	33	38	Hz
Change with Ambient Temperature	$\Delta f_{VO}/T_A$	$V_{CC1} = 12\text{V}, T_A = -20^\circ \text{ to } +70^\circ\text{C}$	0	–	2	Hz
Horizontal Oscillation Starting Voltage	$V_{\text{OSC-S}(2)}$	$f_{ho} = 10 \text{ to } 20\text{kHz}, 1V_{P-P}, V_{CC2} = 12\text{V}$	5.0	–	6.5	V
Horizontal Oscillation Frequency	f_{HO}	$V_{CC2} = 12\text{V}$	15.0	15.75	16.25	V
Pulse Width Duty Ratio (H-Osc)	τ	$V_{CC2} = 12\text{V}$	–	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	$\Delta f_{HO}/T_A$	$V_{CC2} = 12\text{V}, T_A = -20^\circ \text{ to } +70^\circ\text{C}$	–200	–	200	Hz
AFC Loop Gain	f_{APC}	$\mu \times \beta$	–	7400	–	kHz/rad

Pin Connection Diagram



