ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE1727
Integrated Circuit
TV Signal Processor

Description:

The NTE1727 is an integrated circuit designed for color TV deflection signal processing circuits. It can be operated with a 12V power supply and is suitable for compact and medium–sized color TV sets.

Features:

- Built–In Vertical Deflection Driver Circuit
- Incorporating Vertical and Horizontal Oscillator Circuit, Operations Highly Stable Against Changes in sSupply Voltage and Temperature.
- Highly Stable Synchronous Separation Circuit Against Noise
- Built–In High Tension Protector Circuit (X–Ray Protection)
- 12V Supply Voltage Operation

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Supply Voltage
- $V_{7–9}$ 10.5V
- $V_{15–9}$ 14.4V

Circuit Voltage
- $V_{1–9}$, $V_{12–9}$ . . . . . 0 to 10V
- $V_{10–9}$ . . . . . 0 to $V_{15–9}$
- $V_{17–9}$ . . . . . 0 to 6V
- $V_{18–9}$ . . . . . –3V to 2V

Supply Current
- I_7 . . . . . 16mA
- I_{15} 23mA

Circuit Current
- I_2, I_4 . . . . . –3mA to 3mA
- I_3 . . . . . –5mA to 0mA
- I_5 . . . . . –1mA to 1mA
- I_6, I_8 . . . . . –30mA to 0mA
- I_{12} . . . . . –2mA to 1mA
- I_{13} . . . . . 0mA to 30mA

Power Dissipation, P_D 500mW

Operating Ambient Temperature Range, T_{opr} . . . . . –20° to +70°C

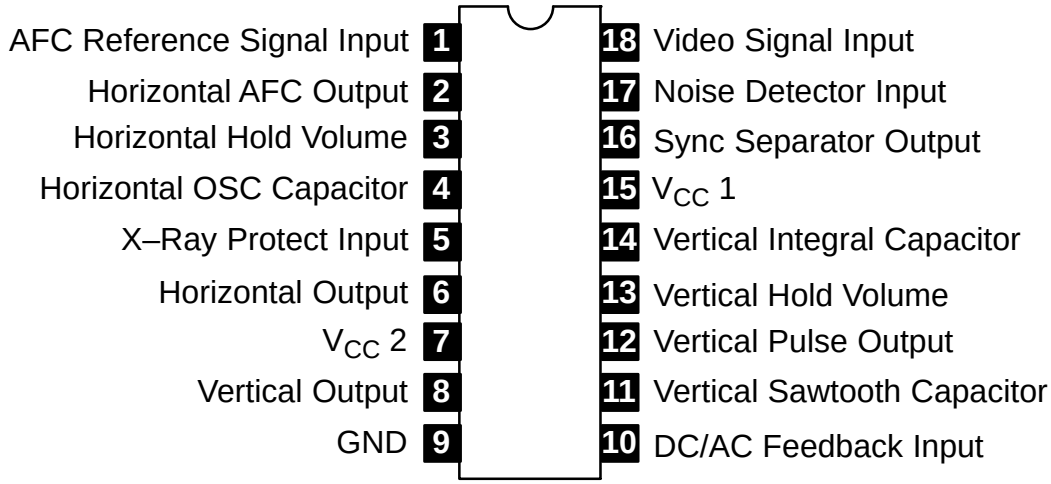
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

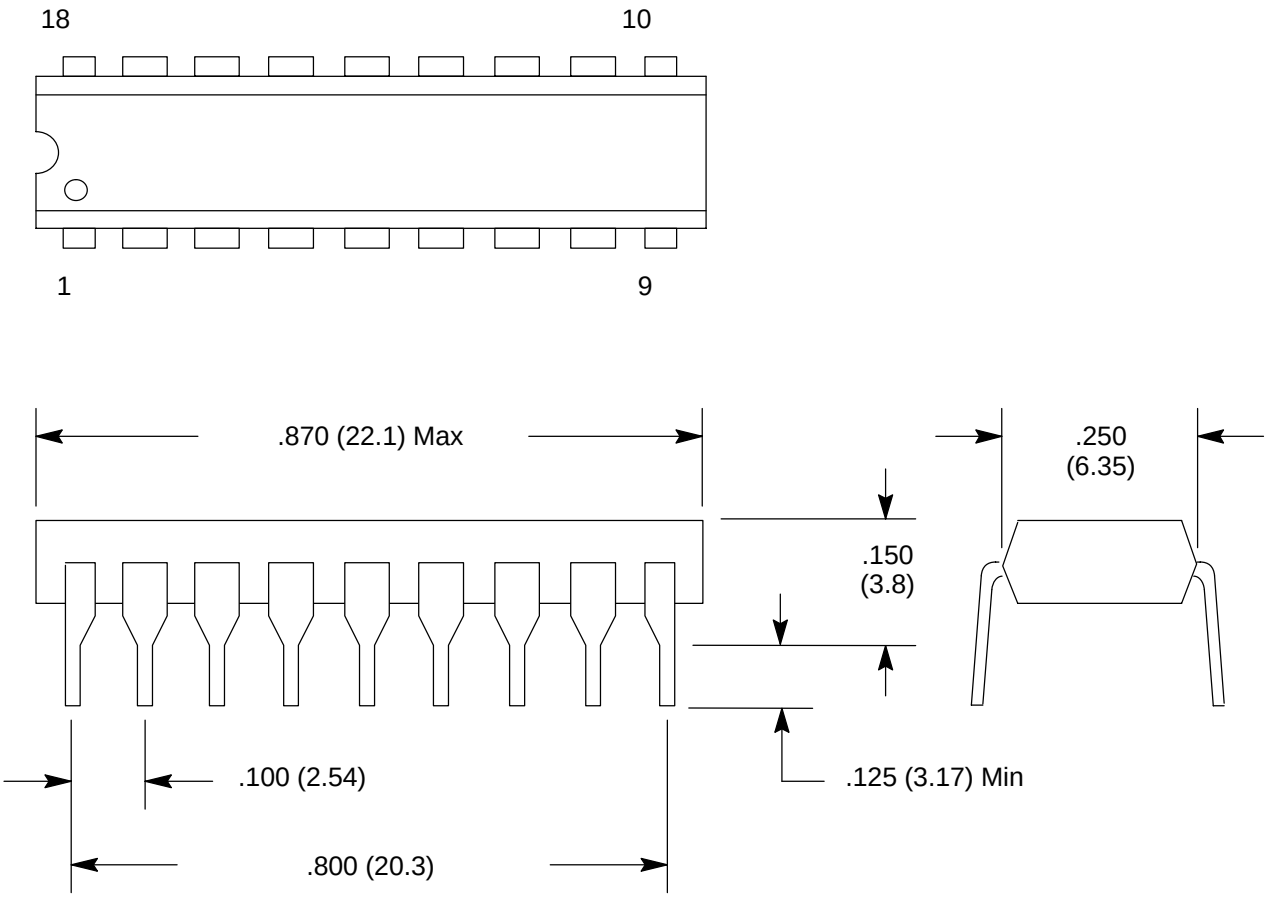
Note 1. + and – are flow–in and flow–out currents to/from the circuit, respectively.

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current	I_7	Apply 12V with 200 to Pin7	7.5	12.0	15.5	mA
	I_{15}	$V_{15–9}$ = 12V	18	25	33	mA
Protector Operating Voltage	$V_{5–9}$	Apply 12V with 200 to pin7	0.73	–	0.86	V
Oscillation Starting Voltage (V • Osc)	$V_{OSC–s(1)}$	f_{VO} = 40Hz to 60Hz, 0.7$V_{P–P}$ or more	–	–	6	V
Vertical Oscillation Frequency	f_{VO}	V_{CC} 1 = 12V, $R_{OSC(V)}$ = 9.5kΩ	47	50	53	Hz
f_{VO} Change with Supply Voltage	$\Delta f_{VO}/V_{CC}$	f_{VO} |9.6V to f_{VO}| 14.4V	0	1.0	1.3	Hz
Pulse Width (V • Osc)	τ	V_{CC} 1 = 12V, $R_{OSC(V)}$ = 9.5kΩ	420	600	780	µs
Vertical Pull–In Range	f_{VP}	V_{CC} 1 = 12V, $R_{OSC(V)}$ = 9.5kΩ	–	43	47	Hz
Vertical Sawtooth Wave Amplification	$V_{(saw)}$	V_{CC} 1= 12V, $R_{OSC(V)}$ = 9.5kΩ	0.9	1.2	1.5	$V_{P–P}$
f_{VO} Change with Ambient Temperature	$\Delta f_{VO}/T_A$	T_A = –20° to +70°C	–	0.8	–	Hz/°C
$V_{(saw)}$ Change with Ambient Temperature	$\Delta V_{(saw)}/T_A$	T_A = –20° to +70°C	–	–	30	$mV_{P–P}$/°C
Oscillation Starting Voltage	$V_{OSC–s(2)}$	f_{VO} = 10kHz to 20kHz, 1$V_{P–P}$ or more	–	–	6	V
Horizontal Oscillation Frequency	f_{HO}	V_{CC2} = 12V, $R_{OSC(H)}$ = 2.95kΩ	15.0	15.75	16.25	kHz
f_{HO} Change with Supply Voltage	$\Delta f_{HO}/V_{CC}$	f_{HO} |9.6V to f_{HO}| 14.4V	0	100	200	Hz
Pulse Width Duty Ratio (H • Osc)	τ	V_{CC} 2 = 12V	31.5	35.4	38.9	&
f_{HO} Control Sensitivity	β	I_O = ±100µA	19	21	23	Hz/µA
f_{HO} Change with Ambient Temperature	$\Delta f_{HO}/T_A$	T_A = –20° to +70°C	–1.67	–	+1.67	Hz/°C
AFC Loop Gain	f_{AFC}	µ x β	5800	7700	9600	Hz/rad

Pin Connection Diagram




18
10
1
9
.870 (22.1) Max
.250
(6.35)
.150
(3.8)
.100 (2.54)
.125 (3.17) Min
.800 (20.3)