ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

# NTE7176
# Integrated Circuit
# High Voltage CRT Driver for Color Monitor

**Description:**

The NTE7176 is an intergrated high voltage CRT driver circuit designed for use in color monitor applications. The IC contains three high input impedance, wide band amplifiers which directly drive the RGB cathodes of a CRT. Each channel has its gain internally set to −14 and can drive CRT capacitive loads as well as resisitive loads present in other applications, limited only by the package's power dissipation. The IC packaged in an industry standard 9−lead TO−220 molded plastic power package.

**Features:**

- Dissipates Approximately 50% Less Power than NTE7177
- 0V to 5V Input Range
- Stable with 0pF−20pF Capacitive Loads and Inductive Peaking Networks
- Convenient TO−220 Staggered Lead Package Style

**Applications:**

- 1024 x 768 Displays up to 70Hz Refresh
- Pixel Clock Frequencies up to 75MHz
- Monitors Using Video Blanking

**Absolute Maximum Ratings:** (Note 1, Note 2)

Supply Voltage, $V_{CC}$ . . . . . +90V
Bias Voltage, $V_{BB}$ . . . . . +16V
Input Voltage, $V_{IN}$ . . . . . 0V to 6V
Storage Temperature Range, $T_{STG}$ . . . . . −65° to +150°C
Lead Temperature (During soldering < 10 sec.), $T_L$ . . . . . +300°C
ESD Tolerance
Human Body Model . . . . . 2kV
Machine Model . . . . . 250V

Note 1. Absolute Maximum Ratings indicate limites beyond which damage to the device may occur.
Note 2. All Voltages are measured with respect to GND, unless otherwise specified.

**Recommended Operating Characteristics:** (Note 3)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Supply Voltage | $V_{CC}$ | | 60 | − | 85 | V |
| Bias Voltage | $V_{BB}$ | | 8 | − | 15 | V |
| Input Voltage | $V_{IN}$ | | 0 | − | 5 | V |
| Output Voltage | $V_{OUT}$ | | 15 | − | 75 | V |
| Case Temperature | $T_C$ | | −20 | − | +115 | °C |

Note 3. Operating ratings indicate conditions for which the device is functional, but do not guarantee limits. For guaranteed specifications and test conditions, see the Electrical Characteristics. The guaranteed specifications apply only for the test conditions listed. Some performance characteristics may change when the device is not operated under the listed test conditions.

**Electrical Characteristcs:** ($V_{CC}$ = +80V, $V_{BB}$ = +12V, $V_{IN}$ = +2.7$V_{DC}$, $C_L$ = 8pF, Output = 40$V_{PP}$ at 1MHz, $T_C$ = +50°C, unless otherwise specified)

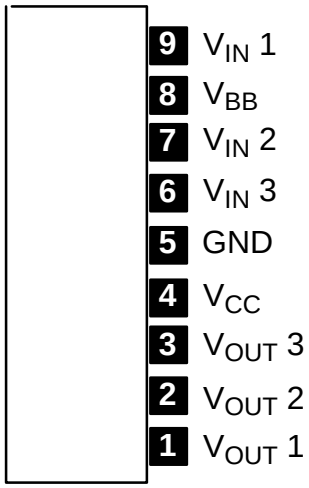
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Supply Current | $I_{CC}$ | Per Channel, No Input Signal, No Output Load | − | 8 | − | mA |
| Bias Current | $I_{BB}$ | All Three Channels | − | 12 | − | mA |
| DC Output Voltage | $V_{OUT}$ | No AC Input Signal, $V_{IN}$ = 1.2V | 62 | 65 | 68 | $V_{DC}$ |
| DC Voltage Gain | $A_V$ | No AC Input Signal | −12 | −14 | −16 | − |
| Gain Matching | $\Delta A_V$ | No AC Input Signal, Note 4 | − | 1.0 | − | dB |
| Linearity Error | LE | No AC Input Signal, Note 4, Note 5 | − | 8 | − | % |
| Rise Time | $t_R$ | 10% to 90%, Note 6 | − | 9 | − | ns |
| Fall Time | $t_F$ | 90% to 10%, Note 6 | − | 11 | − | ns |
| Overshoot | OS | Note 6 | − | 1 | − | % |

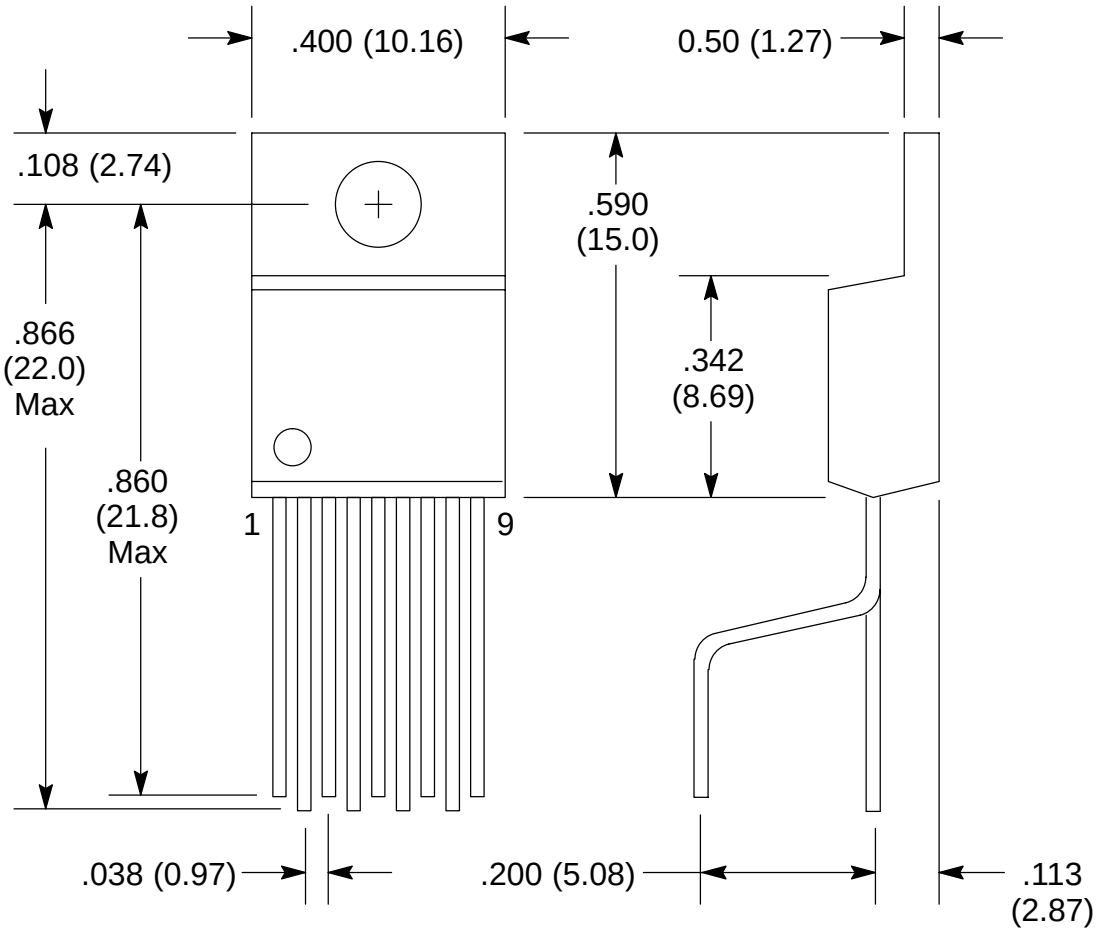
Note 4. Calculated value from Voltage Gain test on each channel

Note 5. Linearity Error is the variation in dc gain from $V_{IN}$ = 1.0V to $V_{IN}$ = 4.5V

Note 6. Input from signal generator: $t_R$, $t_f$ < 1ns

**Pin Connection Diagram**
(Front View)




.400 (10.16)
0.50 (1.27)
.108 (2.74)
.590
(15.0)
.866
(22.0)
Max
.342
(8.69)
.860
(21.8)
Max
1
9
.038 (0.97)
.200 (5.08)
.113
(2.87)