

FEATURES

- Little or No Heat Sink Required
- Ease of Use
- Rise Time <8ns
- Fall Time <7ns

APPLICATIONS

- 14", 15", 17" Monitors with 70KHz Scanning Frequency

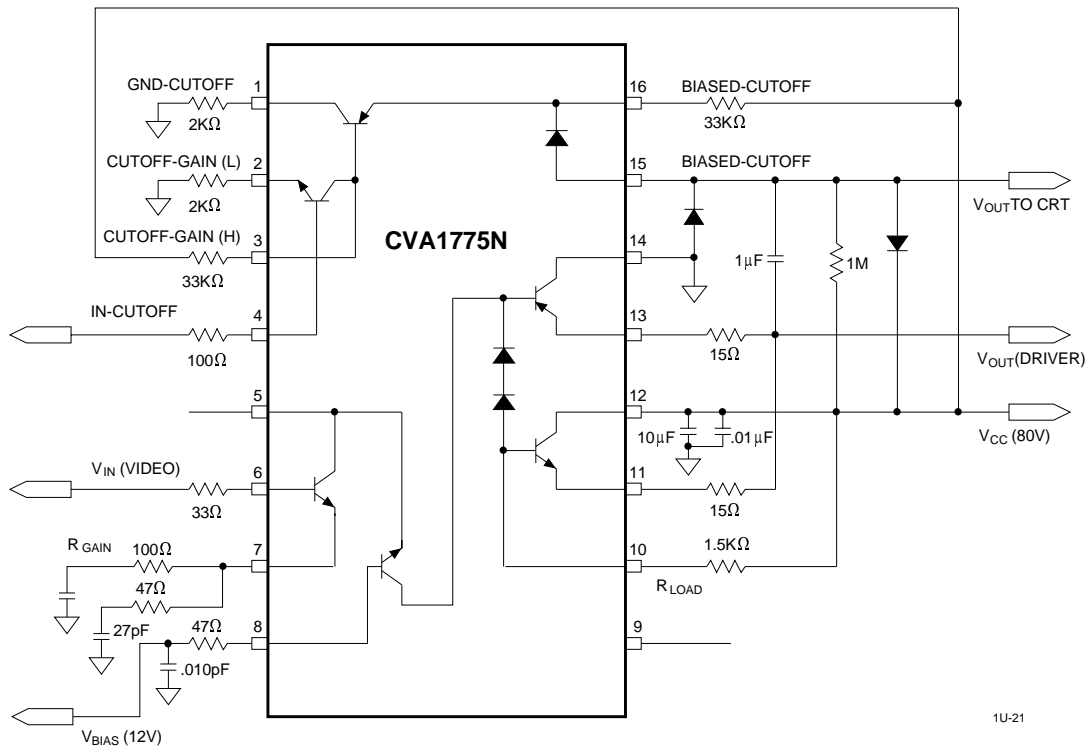
DESCRIPTION

The CVA1775N includes a cascode CRT driver and a DC bias cutoff amplifier. All of the active components are inside the CVA1775N. Only the passive components and protection diodes are needed to drive a CRT tube. The CVA1775N can easily drive 70KHz monitors. With the unique feature of DC bias circuitry the printed circuit board will shrink as EMI performance will be improved.

ORDERING INFORMATION

| Part | Package | Temperature |
|----------|---------|---------------|
| CVA1775N | 16-PDIP | 0°C to +110°C |

SCHEMATIC, TEST CIRCUIT



1U-21

ABSOLUTE MAXIMUM RATINGS

| | | | |
|---|-----------------|--|---------------|
| Supply Voltage (Driver Pin #12) | 100V | Junction Temperature | 175°C |
| Supply Voltage (cutoff) | 250V | Operating Temperature (Case) | 0°C to +110°C |
| Storage Temperature | -25°C to +125°C | Lead Temperature | +300°C |

CRT DRIVER DC ELECTRICAL CHARACTERISTICS $V_S = 80V, C_L = 12pF, V_{BIAS} = 12V, V_{IN} = 2.7V, R_L = 1500\Omega, T_{CASE} = +25^\circ C$.

| SYMBOL | CHARACTERISTICS | MIN | TYP | MAX | UNITS |
|----------------|-----------------|-----|-----|-----|-------|
| I_{CC} | Supply Current | | 20 | 26 | mA |
| $V_{OUT\ DC}$ | Output DC Level | 44 | 50 | 56 | V |
| A_v (Driver) | Voltage Gain | | 13 | 15 | V |

CRT DRIVER AC ELECTRICAL CHARACTERISTICS $V_S = 80V, C_L = 12pF, V_{BIAS} = 12V, V_{IN} = 2.7V, R_L = 1500\Omega, T_{CASE} = +25^\circ C$.

| SYMBOL | CHARACTERISTICS | MIN | TYP | MAX | UNITS |
|--------|-----------------|-----|-----|-----|-------|
| T_r | Rise Time | | 7.5 | 9 | ns |
| T_f | Fall Time | | 7.5 | 9 | ns |
| L_e | Linearity | | 5 | | % |
| OS | Overshoot | | 3 | | % |

BIAS AMPLIFIER DC ELECTRICAL CHARACTERISTICS Supply Voltage = 150V, $V_B = 12V$ see test circuit.

| SYMBOL | CHARACTERISTICS | TYP | MIN | MAX | UNITS | CONDITIONS |
|-----------------|-----------------|------|-----|-----|-------|--------------------------------|
| I_{CC} | Supply Current | 5 | | 5.5 | mA | $V_{IN} = 5V$ |
| $V_{OUT(LOW)}$ | Output Voltage | 66 | 60 | 70 | V | $V_{IN} = 5V$ |
| $V_{OUT(HIGH)}$ | Output Voltage | 121 | 118 | 126 | V | $V_{IN} = 1V$ |
| Gain | Voltage Gain | 13.8 | 12 | 16 | V/V | $\Delta V_{OUT}/\Delta V_{IN}$ |
| Δ Gain | Gain Match | 0.5 | | 1 | dB | Note 1 |

Note 1. Calculate from voltage gain of each channel.

Note 2: V_{OUT} at $V_{IN} = 5V, \Delta T = 25^\circ C$ to $100^\circ C$

APPLICATION INFORMATION

The CVA1775N is a high voltage driver and DC bias amplifier suitable for VGA, Super VGA, IBM® 8514, 1024 x 768 non-interlaced display applications. The CVA1775N features 80V and low power dissipation. The part is housed in the industry standard 16-pin PDIP.

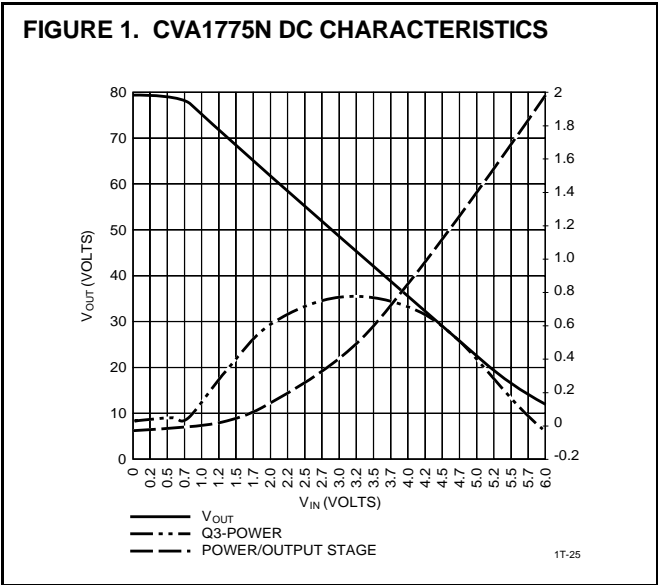
Thermal Considerations

The transfer characteristics of the CVA1775N application are shown in *Figure 1*. Since this is a class A input stage, power supply current increases as the input signal increases and consequently power dissipation also increases.

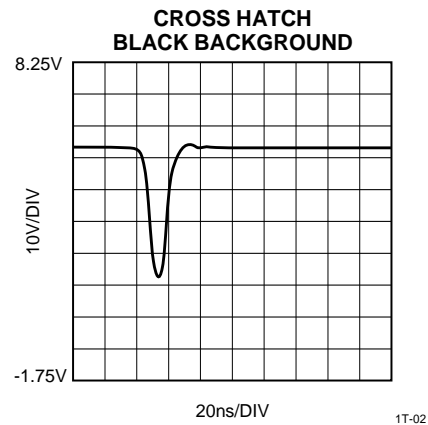
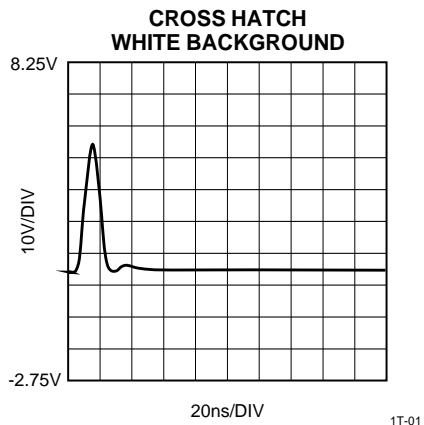
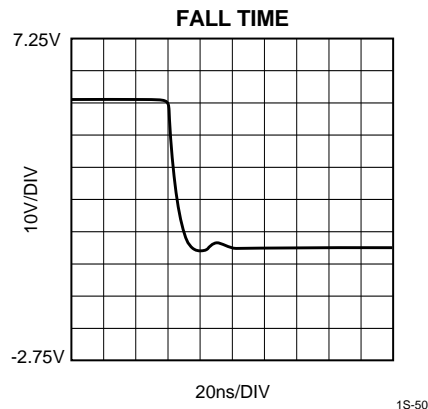
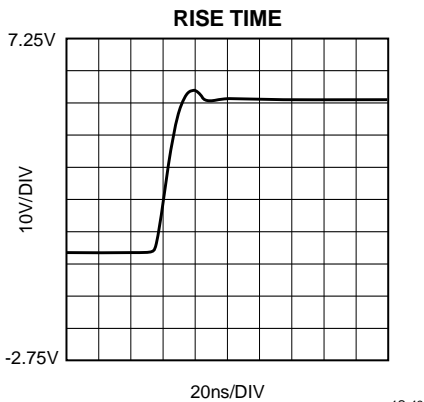
The CVA1775N can be used without a heat sink. Under white screen condition, i.e. 25V output, dissipation is 0.6W/channel. Under gray level conditions $C_L = 12\text{pf}$, $V_{OUT} = 45\text{p-p}$, the dissipation is 1.1W/channel.

The output of CVA1775N is not short circuit proof.

FIGURE 1. CVA1775N DC CHARACTERISTICS



TYPICAL CHARACTERISTICS



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