

**FEATURES**

- Rise/Fall Time..... **4.0ns**
- Swing ..... **65V<sub>P-P</sub>**
- Supply Voltage..... **90V**
- High Input Impedance

**APPLICATIONS**

- CRT driver for up to 82kHz monitors
- Excellent Gray Scale Linearity
- Emitter Peaking Option
- Adjustable Gain

**DESCRIPTION**

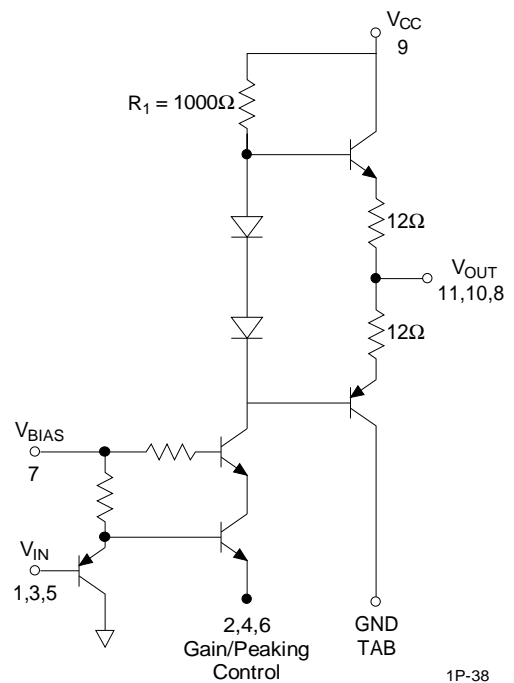
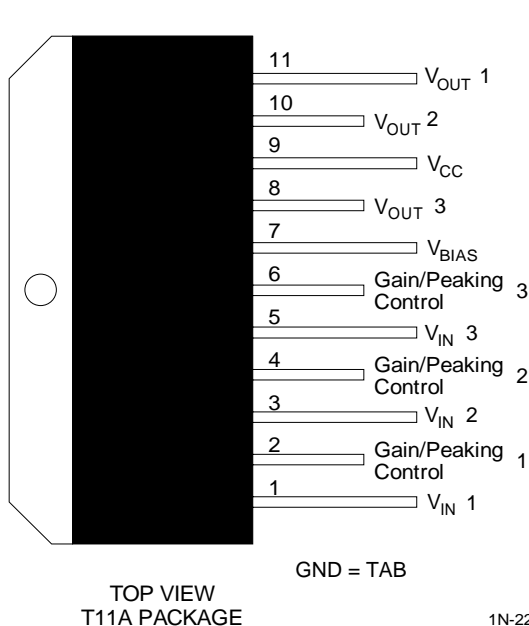
The CVA2403T is a high input impedance wideband triple amplifier. The device is specifically designed to drive a CRT featuring a high speed buffer for easy matching to a pre-amplifier, no crossover distortion for excellent gray scale linearity, external emitter peaking to maximize the high frequency gain at the cross hatch pattern and an adjustable gain for ease of use. This device can drive monitors with resolutions of 1280 X 1024 (interlaced) with pixel frequencies of 220MHz.

The part is housed in the industry standard 11-lead TO-220 molded power package. The heat sink is grounded.

**ORDERING INFORMATION**

| Part     | Package | Temperature     |
|----------|---------|-----------------|
| CVA2403T | T11A    | -20°C to +100°C |

**CONNECTION DIAGRAM AND SIMPLIFIED SCHEMATIC**



## ABSOLUTE MAXIMUM RATINGS

|                               |                 |                                 |                 |
|-------------------------------|-----------------|---------------------------------|-----------------|
| Supply Voltage . . . . .      | 90V             | Operating Temperature . . . . . | -20°C to +100°C |
| Power Dissipation . . . . .   | 16W             | Lead Temperature . . . . .      | +300°C          |
| Storage Temperature . . . . . | -25°C to +100°C |                                 |                 |

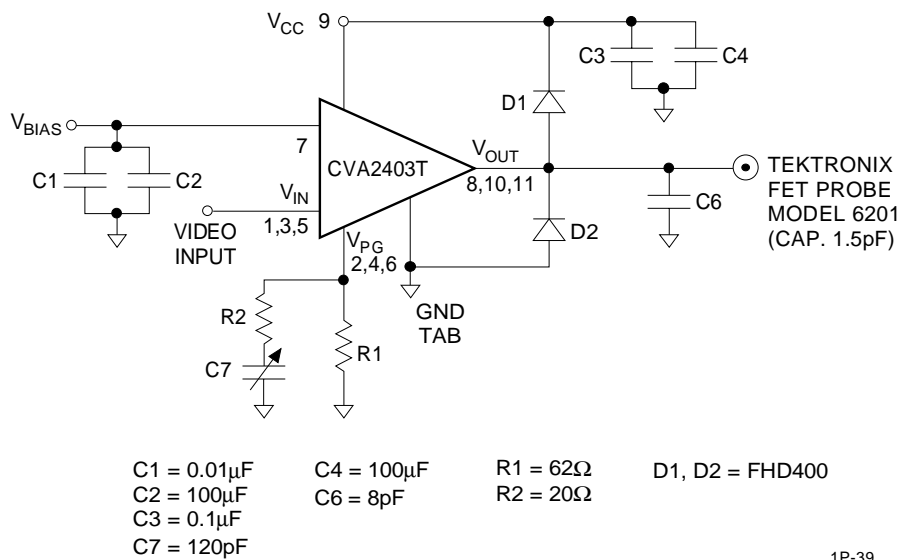
**DC ELECTRICAL CHARACTERISTICS**  $V_s = 80V$ ,  $C_L = 8pF$ ,  $DC_{INPUT\ BIAS} = 12V$ ,  $V_{IN} = 3.4V$ ,  $V_{OUT} = 50V_{p-p}$ .  $T_{CASE} = +25^\circ C$ . See Figure 1.

| SYMBOL        | CHARACTERISTICS | MIN | TYP | MAX | UNITS |
|---------------|-----------------|-----|-----|-----|-------|
| $I_{CC}$      | Supply Current  | 30  | 34  | 40  | mA    |
| $V_{OUT\ DC}$ | Output DC Level | 40  | 45  | 50  | V     |
| $A_v$         | Voltage Gain    | 13  | 15  | 17  | V     |
|               | Gain Matching   |     | 0.2 |     | dB    |

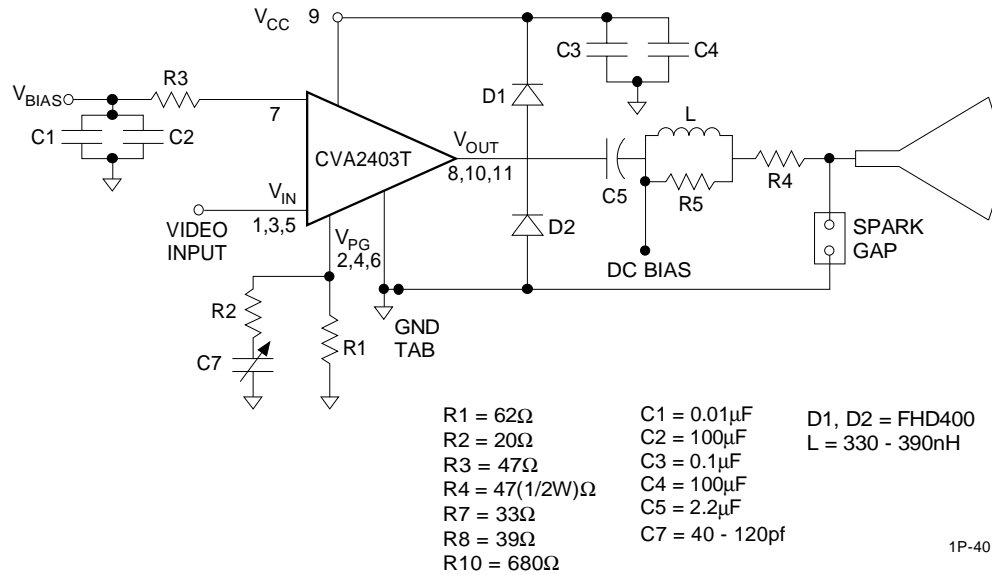
**AC ELECTRICAL CHARACTERISTICS**  $V_s = 80V$ ,  $C_L = 8pF$ ,  $DC_{INPUT\ BIAS} = 12V$ ,  $V_{IN} = 3.4V$ ,  $V_{OUT} = 50V_{p-p}$ .  $T_{CASE} = +25^\circ C$ . See Figure 1.

| SYMBOL | CHARACTERISTICS | MIN | TYP | MAX | UNITS |
|--------|-----------------|-----|-----|-----|-------|
| $T_r$  | Rise Time       |     | 4   | 4.5 | ns    |
| $T_f$  | Fall Time       |     | 4   | 4.5 | ns    |
| $L_e$  | Linearity       |     | 6   |     | %     |
| OS     | Overshoot       |     | 5   |     | %     |

**FIGURE 1. TEST CIRCUIT**



**FIGURE 2. APPLICATION CIRCUIT**



**APPLICATION INFORMATION**

The CVA2403T is a high voltage triple CRT driver suitable for VGA, Super VGA, IBM® 8514, 1280 x 1024 and 1024 x 768 non-interlaced display applications. The CVA2403T features 80V operation. The part is housed in the industry standard 11 lead TO-220 molded power package. The heat sink is floating and may be grounded for ease of manufacturing and RFI shielding.

**Thermal Considerations**

The transfer characteristics of the amplifier are shown in Figure 4. Since this is a class A input stage, power supply current increases as the input signal increases and consequently power dissipation also increases.

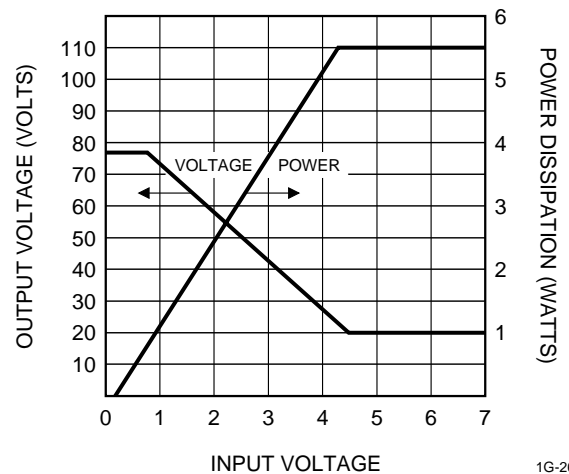
The CVA2403T cannot be used without heat sinking. Figure 2 shows the power dissipated in each channel over the operating voltage range of the device. Under white screen conditions, i.e.: 20V output, dissipation increases to 16W total. The CVA2403T case temperature must be maintained below +90°C. If the maximum expected ambient temperature is +50°C, then a heat sink is needed with thermal resistance equal to or less than:

$$R_{th} = \frac{(90 - 50^{\circ}C)}{16W} = 2.5^{\circ}C/W$$

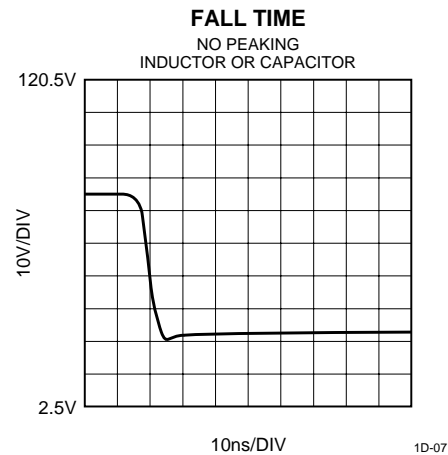
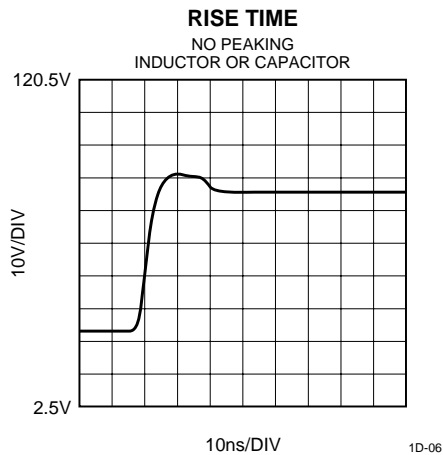
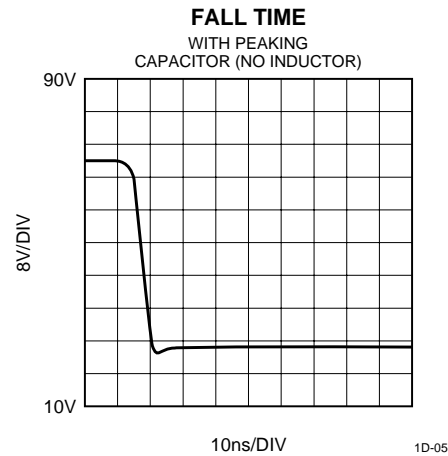
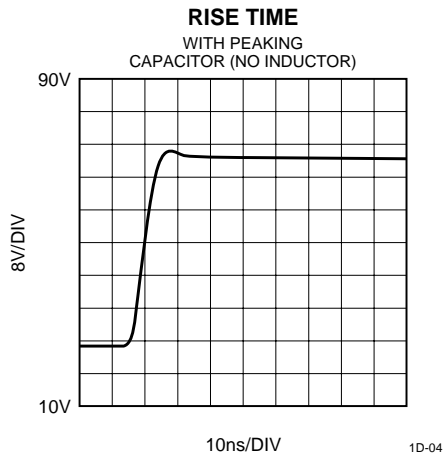
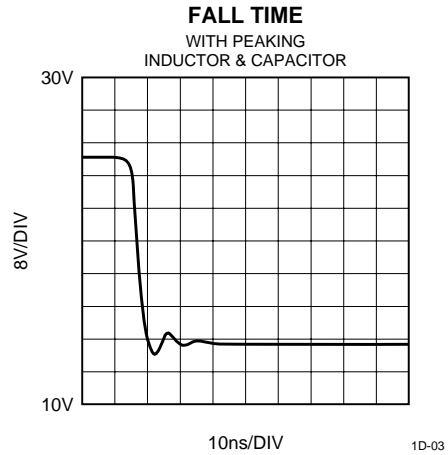
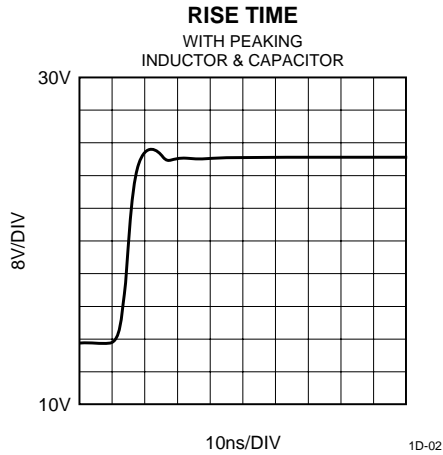
The CVA2403T maximum load is 600Ω to ground or V<sup>+</sup>.

The output of CVA2403T is not short circuit proof. Any resistance to V<sup>+</sup> or Ground should be > 600Ω.

**FIGURE 3. CVA2403T DC Characteristics**



**TYPICAL CHARACTERISTICS**



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