



Low Cost Triple CRT Driver

Preliminary Data Sheet

CVA2400A

FEATURES

- Rise/Fall Time..... 6.0ns
- Swing 65V_{P-P}
- Supply Voltage..... 90V

APPLICATIONS

- CRT driver for up to 76kHz Monitors
- Excellent Gray Scale Linearity
- Emitter Peaking Option
- Adjustable Gain

DESCRIPTION

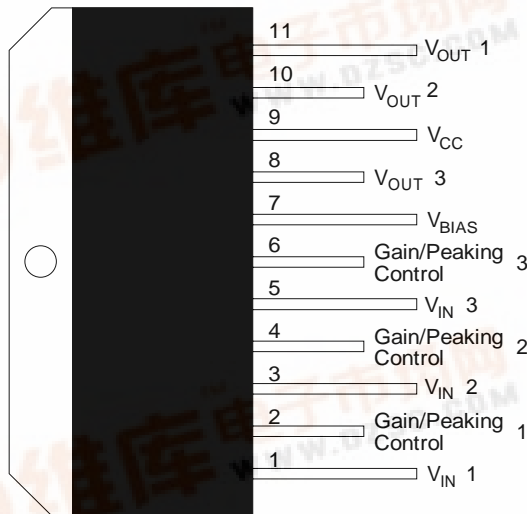
The CVA2400A contains three wide band triple amplifiers, specifically designed to drive a CRT. It features no crossover distortion for excellent gray scale linearity, external emitter peaking to maximize the high frequency gain at the cross hatch pattern and an adjustable gain for ease of use. This device can drive monitors with resolutions of 1280 X 1024 (interlaced) with pixel frequencies of 176MHz.

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

ORDERING INFORMATION

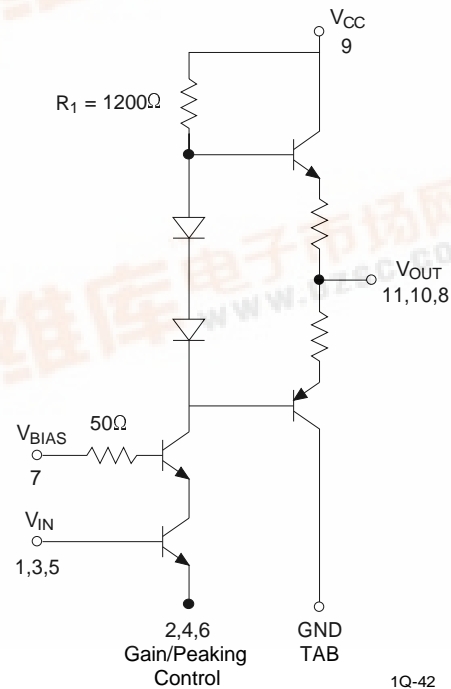
Part	Package	Temperature
CVA2400A	T11A	0°C to +110°C

CONNECTION DIAGRAM AND SIMPLIFIED SCHEMATIC



TOP VIEW
T11A PACKAGE

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ABSOLUTE MAXIMUM RATINGS

Supply Voltage	100V	Case Temperature	0°C to +110°C
Storage Temperature	-25°C to +125°C	Lead Temperature	+300°C
Junction Temperature	+175°C		

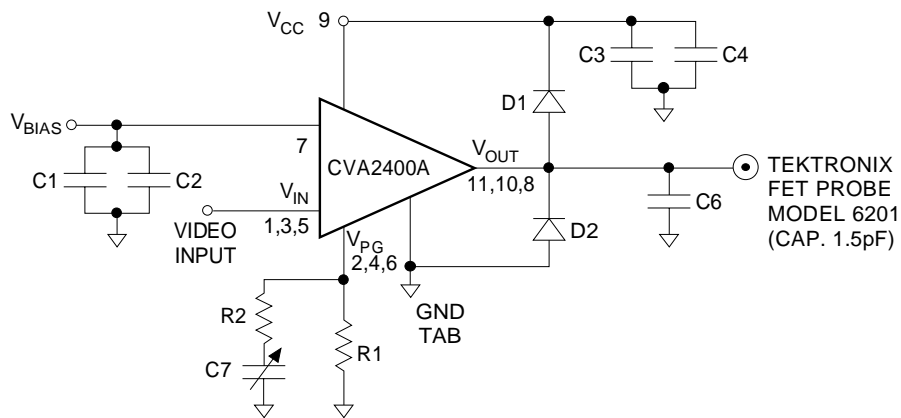
DC ELECTRICAL CHARACTERISTICS $V_s = 80V$, $C_L = 8pF$, $DC_{INPUT\ BIAS} = 12V$, $V_{IN} = 3.2V$, $V_{OUT} = 50V_{p-p}$. $T_{CASE} = +25°C$. See Figure 1.

SYMBOL	CHARACTERISTICS	MIN	TYP	MAX	UNITS
I_{CC}	Supply Current	30	35	40	mA
$V_{OUT\ DC}$	Output DC Level	40	45	50	V
A_v	Voltage Gain	14	14.4	15	V
R_{IN}	Input Impedance	10,000	12,000	20,000	Ω
	Gain Matching		0.2	0.7	dB

AC ELECTRICAL CHARACTERISTICS $V_s = 80V$, $C_L = 8pF$, $DC_{INPUT\ BIAS} = 12V$, $V_{IN} = 3.2V$, $V_{OUT} = 45V_{p-p}$. $T_{CASE} = +25°C$. See Figure 1.

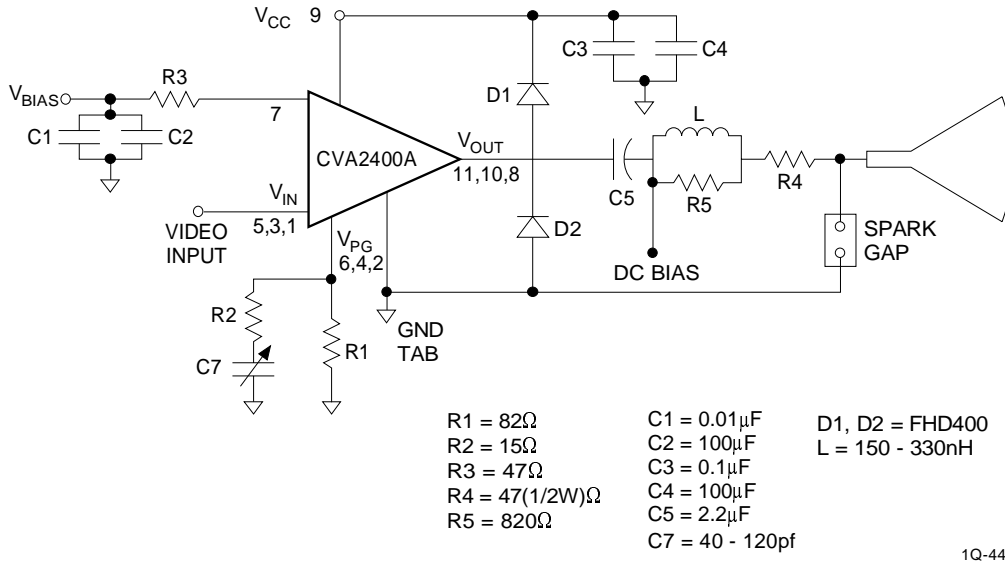
SYMBOL	CHARACTERISTICS	MIN	TYP	MAX	UNITS
T_r	Rise Time		6	7	ns
T_f	Fall Time		4.5	5.5	ns
L_e	Linearity		6		%
OS	Overshoot		3	7	%

FIGURE 1. TEST CIRCUIT



- C1 = 0.01 μ F C4 = 100 μ F R1 = 82 Ω D1, D2 = FHD400
- C2 = 100 μ F C6 = 8pF R2 = 15 Ω
- C3 = 0.1 μ F
- C7 = 40pF (TYP)

FIGURE 2. APPLICATION CIRCUIT



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APPLICATION INFORMATION

The CVA2400A is a high voltage triple CRT driver suitable for VGA, Super VGA, IBM® 8514, and 1280 x 1024 non-interlaced display applications. The CVA2400A features 80V operation. The part is housed in the industry standard 11 lead TO-220 molded power package. The heat sink is grounded for ease of manufacturing and RFI shielding.

Thermal Considerations

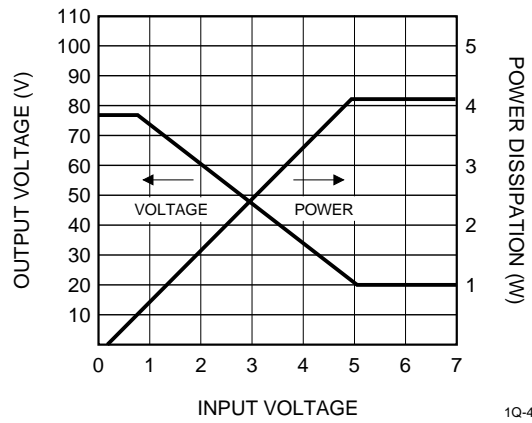
The transfer characteristics of the amplifier are shown in *Figure 2*. Since this is a class A input stage, power supply current increases as the input signal increases and consequently power dissipation also increases.

The CVA2400A cannot be used without heat sinking. *Figure 3* shows the power dissipated in each channel over the operating voltage range of the device. Under white screen conditions, i.e.: 25V output, dissipation increases to 11W total. The CVA2400A case temperature must be maintained below +100°C. If the maximum expected ambient temperature is +50°C, then a heat sink is needed with thermal resistance equal to or less than:

$$R_{th} = \frac{(100 - 50^{\circ}C)}{11W} = 4.5^{\circ}C/W$$

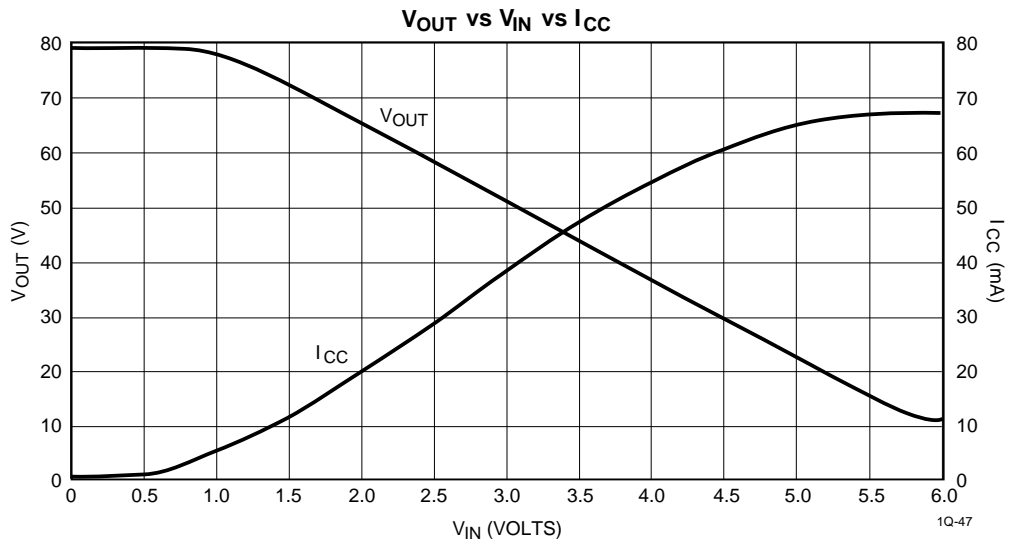
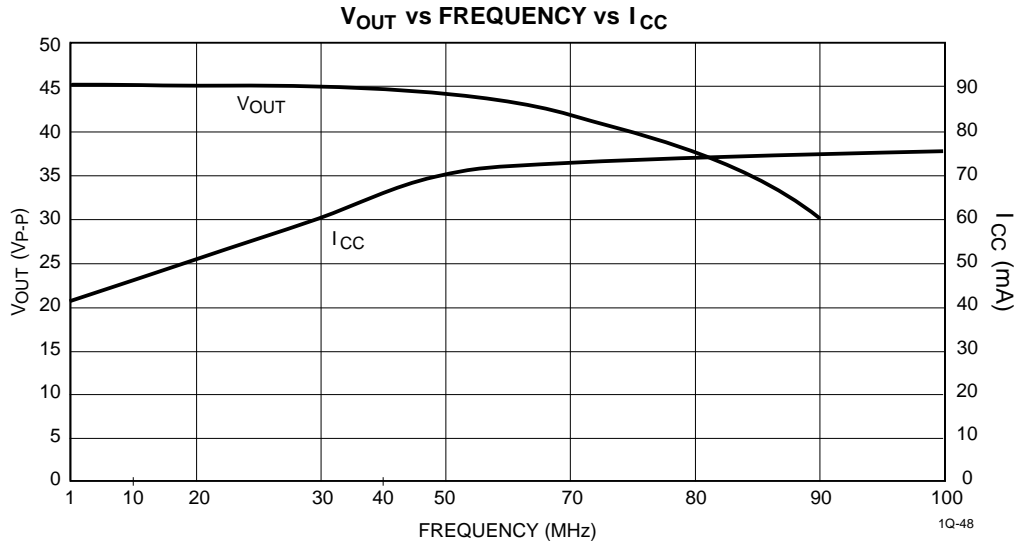
The CVA2400A maximum load is 600Ω to ground or V⁺.
The output of CVA2400A is not short circuit proof. Any resistance to V⁺ or Ground should be > 600Ω.

FIGURE 3. CVA2400A DC Characteristics



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TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (continued)

