



Improved Triple 75MHz CRT Driver

CVA2415TZ

FEATURES

- Bandwidth 75MHz
- Fall Time 4.2ns
- Rise Time 5.0ns
- Swing 50 V_{P-P}
- Excellent Gray Scale Linearity
- Supply Voltage 80V
- Pin to Pin Compatible with CVA2415T

APPLICATIONS

- CRT Driver for 1280 x 1024 and 1024 x 768 Color Monitors

DESCRIPTION

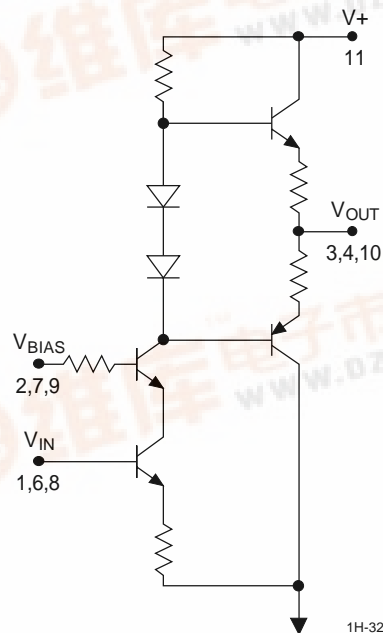
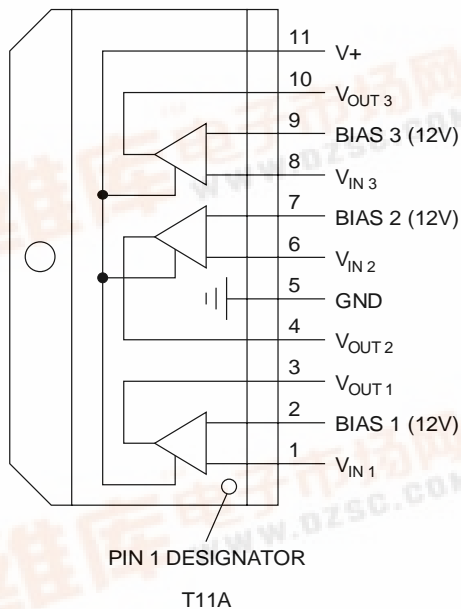
The CVA2415TZ is an improved version that features excellent gray scale linearity with no crossover distortion and less EMI. Designed especially to drive high resolution monitor for resolution up to 1280 x 1024 (non-interlaced).

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.

ORDERING INFORMATION

Part	Package	Temperature
CVA2415TZ	T11A	-20°C to +100°C

CONNECTION DIAGRAM AND SIMPLIFIED SCHEMATIC



ABSOLUTE MAXIMUM RATINGS

Supply Voltage 90V Operating Temperature -20°C to +100°C
 Storage Temperature -25°C to +100°C Lead Temperature +300°C

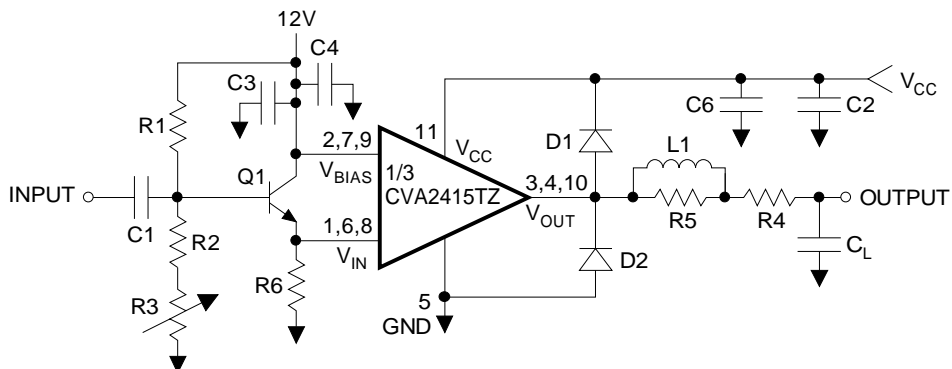
DC ELECTRICAL CHARACTERISTICS $V_S = 80V$, $C_L = 12pF$, $V_{bias} = 12V$, $V_{in} = 3.4V$, $T_{case} = +25^\circ C$. See Figure 1.

SYMBOL	CHARACTERISTICS	MIN	TYP	MAX	UNITS
I_{CC}	Supply Current @ 1MHz	22	26	30	mA
I_{CC}	Supply Current @ 50MHz		48		mA
V_{outDC}	Output DC Level	38	42	46	V
A_V	Voltage Gain	11	13	15	V
	Gain Matching		0.2		dB

AC ELECTRICAL CHARACTERISTICS $V_S = 80V$, $C_L = 12pF$, $V_{bias} = 12V$, $T_{case} = +25^\circ C$. See Figure 1.

SYMBOL	CHARACTERISTICS	MIN	TYP	MAX	UNITS
t_r	Rise Time		5.0	7.0	ns
t_f	Fall Time		4.2	6.0	ns
BW	Bandwidth		75		MHz
Le	Linearity		8.0		%
OS	Overshoot		0		%

FIGURE 1. TEST CIRCUIT



- | | | |
|-------------------------------------|---------------------|----------------|
| $C_1 = 0.01\mu F$ | $R_1 = 8.2k\Omega$ | $D_1 = FDH400$ |
| $C_2 = 0.01\mu F$ | $R_2 = 2.7k\Omega$ | $D_2 = FDH400$ |
| $C_3 = 0.1\mu F$ | $R_3 = 10.0K\Omega$ | $L_1 = 560nH$ |
| $C_4 = 0.47\mu F$ | $R_4 = 34\Omega$ | $Q_1 = 2N5770$ |
| $C_L = 12pF$ (Including Parasitics) | $R_5 = 1.5k\Omega$ | |
| $C_6 = 1.0\mu F$ | $R_6 = 150\Omega$ | |

APPLICATION INFORMATION

The CVA2415TZ 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 CVA2415TZ features 80V operation and low power dissipation. 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.

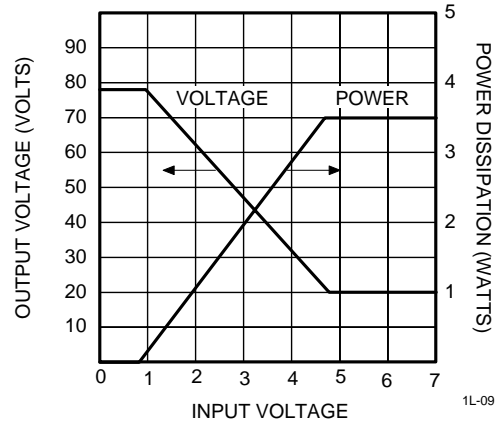
Thermal Considerations

The transfer characteristics of the amplifier are shown in *Figure 2*. Since this is a class A input stage, power supply current increases as the input signal increases and consequently power dissipation also increases. Average dissipation per stage is 2.8W, increasing to 4.8W at minimum output voltage.

The CVA2415TZ cannot be used without heat sinking. *Figure 2* shows the power dissipated in each channel over the operating voltage range of the device, typical "average" power dissipation with the device output voltage at one half the supply voltage is 2.2W per channel for a total dissipation of 6.6W package dissipation. Under white screen conditions, i.e. 20V output, dissipation increases to 3.4W per channel or 10.3W total. The CVA2415TZ 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:

$$R_{th} = \frac{(100 - 50^{\circ}\text{C})}{14.4\text{W}} = 4.8^{\circ}\text{C/W}$$

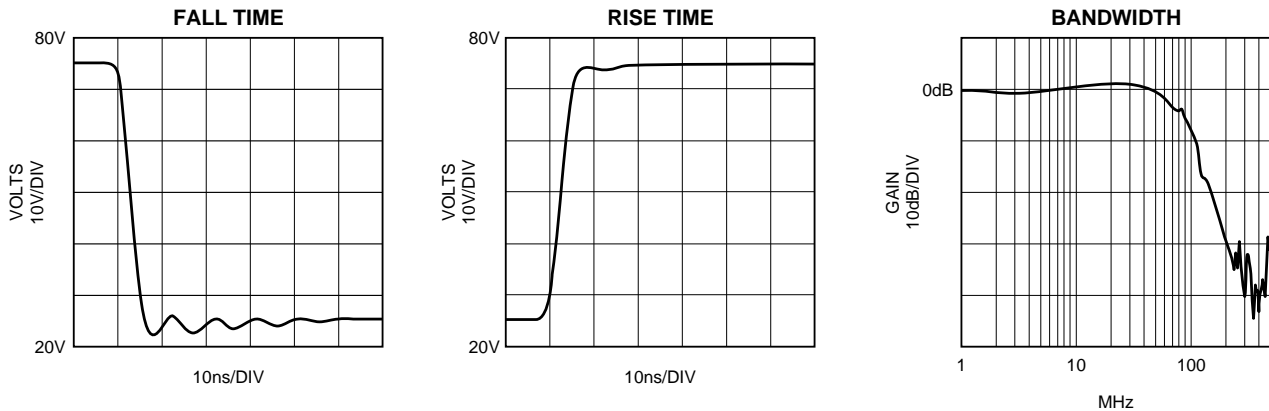
FIGURE 2. CVA2415TZ DC Characteristics



The CVA2415TZ maximum load is 600Ω to ground or V⁺.

The output of CVA2415TZ is not short circuit proof. Any resistance to V⁺ or Ground should be > 600Ω.

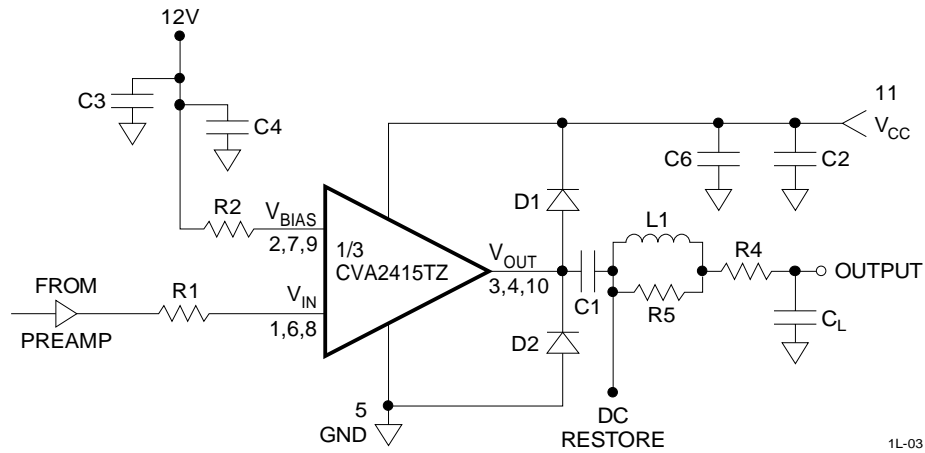
FIGURE 3.



TYPICAL APPLICATION

A typical application of the CVA2415TZ is shown in *Figure 4*.

FIGURE 4. TYPICAL APPLICATION



	C1 μF	C2 μF	C3 μF	C4 μF	CL* pF	C6 μF	R1 Ω	R2 Ω	R4 Ω	R5 K Ω	D1	D2	L1 nH
CVA2415TZ	1.0	0.01	0.1	0.47	12	1.0	22	47	34	1.5	FDH400	FDH400	560