

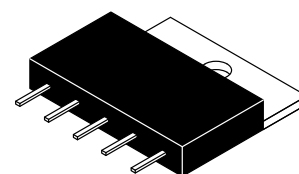
The RF Line Video Driver Hybrid Amplifier

CR2428

The CR2428 is designed specifically for use as the video channel final stage in high resolution monitors.

- Typical 10–90% Transitions Times are 2.5 ns
- 130 MHz Minimum Bandwidth at 40 Vp–p Output
- 290 MHz Minimum Video Clock Frequency
- Up to 50 Vp–p Output Swing with 60 V Supply Voltage
- Low Power Consumption
- Excellent Grey–Scale Linearity
- Unconditional Stability
- Gold Metallization System for the Ultimate in Reliability

2.5 ns
130 MHz
VIDEO DRIVER
HYBRID
AMPLIFIER



CASE 431A–02, STYLE 1
(CR LP)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Supply Voltage	V_{CC}	70	Vdc
Operating Case Temperature Range	T_C	–20 to +100	°C
Storage Temperature Range	T_{stg}	–40 to +100	°C

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$, $V_{CC} = 60\text{ V}$, $C_{LOAD} = 8.5\text{ pF}$, 40 V peak–to–peak output swing with 30 Vdc offset; $R_1 = 215\ \Omega$, $C_1 = 90\text{ pF typ}$)

Characteristic	Symbol	Min	Typ	Max	Unit
Supply Current (With Input Open Circuited)	I_{CC}	39.5	43.5	47.5	mA
Input DC Voltage (With Input Open Circuited)	V_{inDC}	1.15	1.4	1.65	V
Output DC Voltage (With Input Open Circuited)	V_{outDC}	26	30	34	V
Voltage Gain (1) (2)	A_V	11.2	12.4	13.2	V/V
Transient Response (2)					
— Rise Time (10% to 90%)	t_r	—	2.5	2.9	ns
— Overshoot	$V_{os,r}$	—	8.0	15	%
— Fall Time (90% to 10%)	t_f	—	2.5	2.9	ns
— Overshoot	$V_{os,f}$	—	6.0	10	%
Operating Supply Current ($V_{out} = 40\text{ V Peak–to–Peak}$, 50 MHz Square Wave with 30 V offset) (3)	I_{CC}	—	100	—	mA
Linearity Error ($V_{out} = +5.0\text{ V to }+55\text{ V}$)	—	—	—	5.0	%

NOTES:

1. $A_V = V_{out}/V_s$
2. Input Signal is nominally a 62.5 kHz square wave of 3.25 V peak–to–peak with 1.4 Vdc offset. Input t_r , $t_f < 1.0\text{ ns}$.
3. Output is not short circuit protected.

TYPICAL CHARACTERISTICS

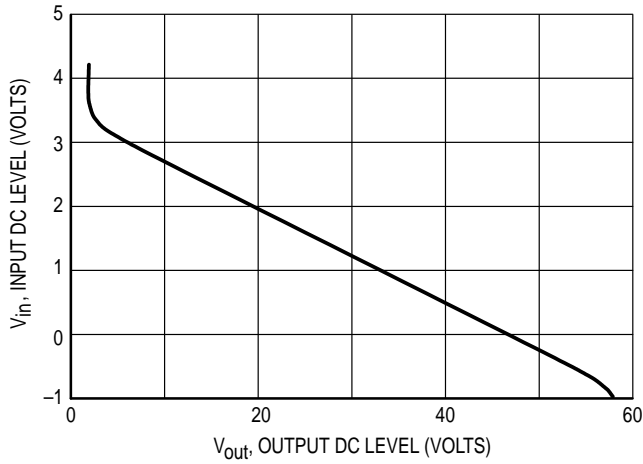


Figure 1. Voltage Ratio at RF Input Port

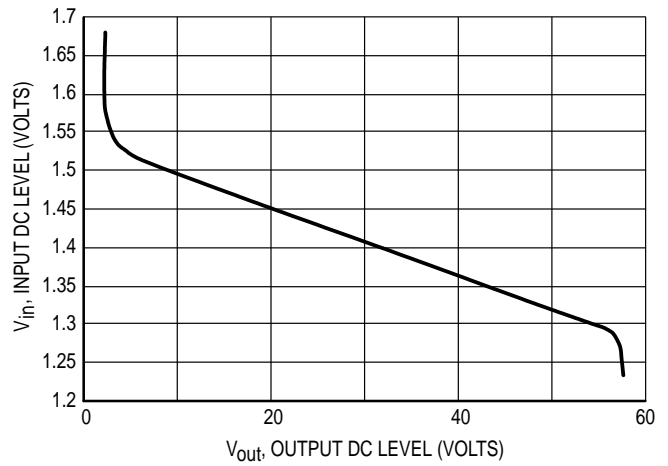


Figure 2. Voltage Ratio at Port 1

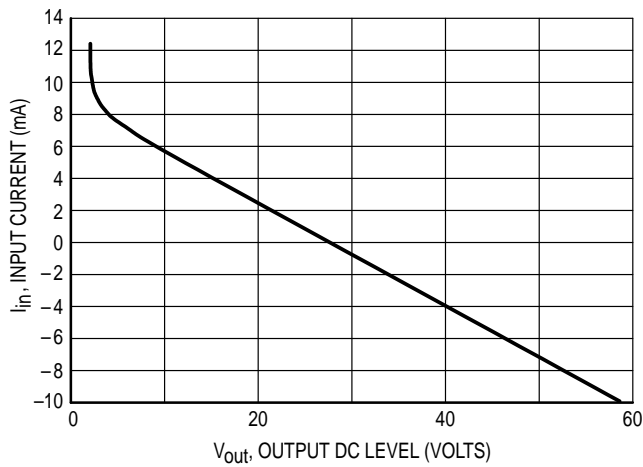


Figure 3. Output Voltage versus Input Current

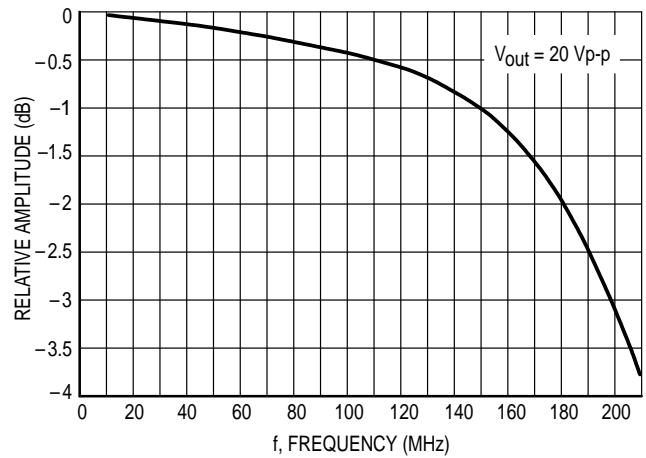


Figure 4. Frequency Response

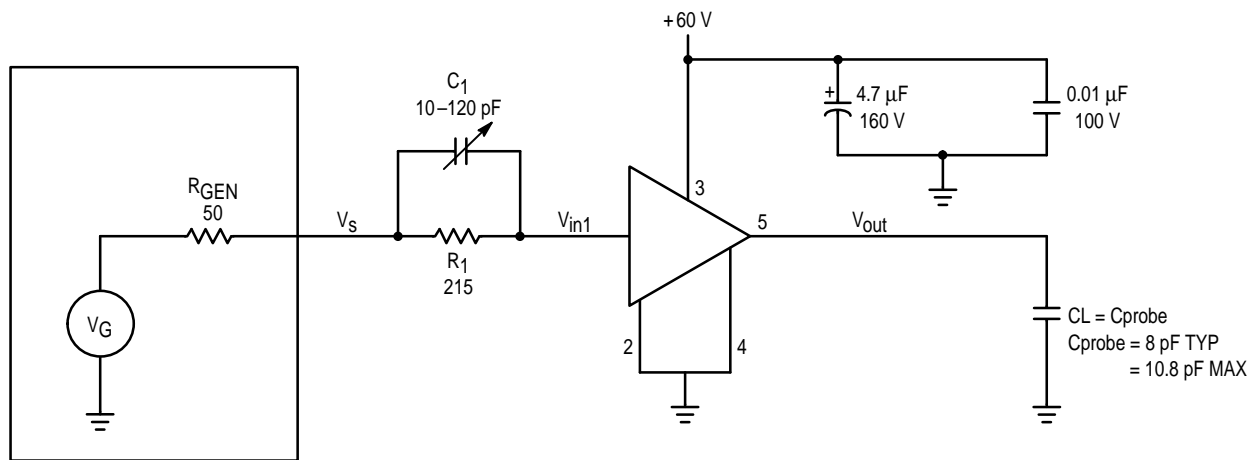
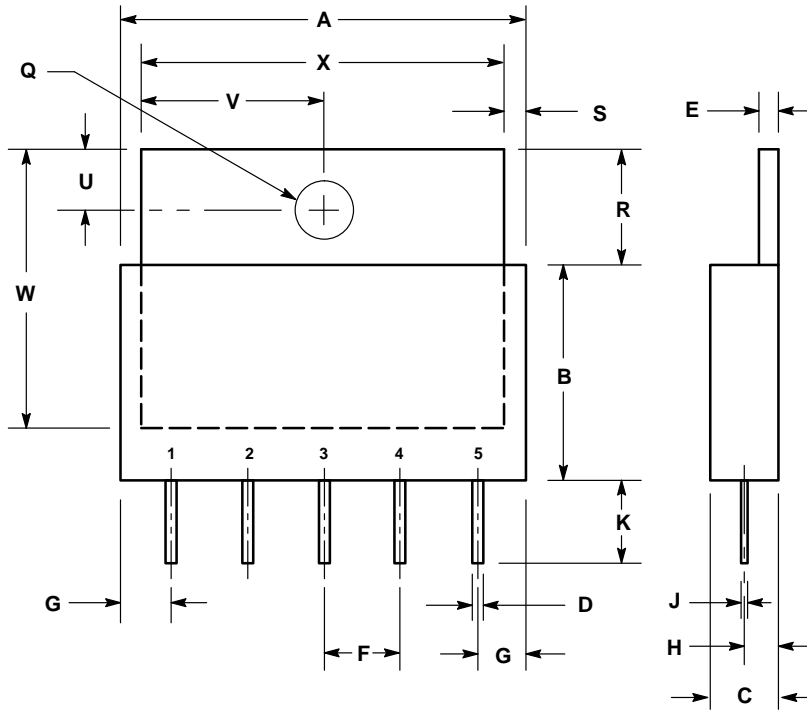


Figure 5. CRT Driver Test Circuit

PACKAGE DIMENSIONS




- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.055	1.065	26.80	27.05
B	0.550	0.565	13.97	14.35
C	0.175	0.185	4.45	4.70
D	0.020	—	0.51	—
E	0.045	0.055	1.14	1.40
F	0.195	0.205	4.95	5.21
G	0.125	0.135	3.18	3.43
H	0.080	0.090	2.03	2.29
J	0.010	—	0.25	—
K	0.215	0.225	5.46	5.72
Q	0.145	0.155	3.68	3.94
R	0.300	0.320	7.62	8.13
S	0.045	0.055	1.14	1.40
U	0.155	0.165	3.94	4.19
V	0.470	0.480	11.94	12.19
W	0.730	0.740	18.54	18.80
X	0.945	0.955	24.00	24.26

- STYLE 1:
 PIN 1. V_{in}
 2. GROUND
 3. $+V_{cc}$
 4. GROUND
 5. V_{out}

**CASE 431A-02
 ISSUE A**

Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters can and do vary in different applications. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and  are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

How to reach us:

USA / EUROPE: Motorola Literature Distribution;
P.O. Box 20912; Phoenix, Arizona 85036. 1-800-441-2447

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, Toshikatsu Otsuki,
6F Seibu-Butsuryu-Center, 3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 03-3521-8315

MFAX: RMFAX0@email.sps.mot.com – TOUCHTONE (602) 244-6609
INTERNET: <http://Design-NET.com>

HONG KONG: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298



CR2428/D

