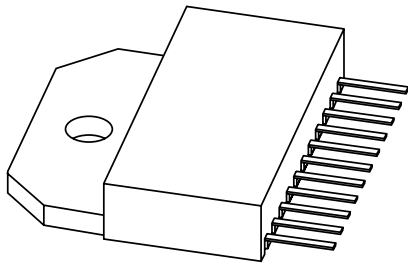


# DATA SHEET



**CR5427**

Triple video driver hybrid amplifier

Product specification  
File under Discrete Semiconductors, SC05

1997 Oct 21

## Triple video driver hybrid amplifier

CR5427

## FEATURES

- Transition times (10 to 90%) with 45 V (p-p) swing and  $C_L = 10$  pF:  
rise time (typ.) 3 ns  
fall time (typ.) 3 ns
- Very low power consumption:  
7 Watt with 25 MHz square wave
- Minimum small signal bandwidth:  
100 MHz
- Very fast slew rate 12000 V/ $\mu$ s
- Excellent grey-scale linearity
- Internal supply decoupling per channel for optimum EMI performance and minimal crosstalk
- Gold metallization ensures excellent reliability
- No negative supply required in the final stage.

## APPLICATIONS

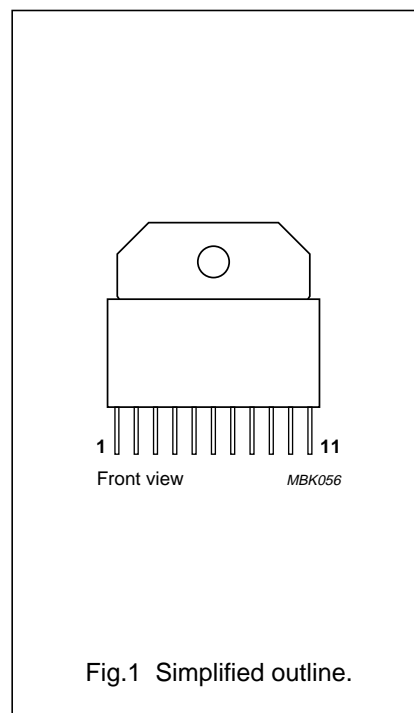
- Cathode-ray tube (CRT) drivers in high-resolution colour monitors
- For 1280 x 1024 pixels (good picture quality) with single PNP buffer
- For 1024 x 768 pixels (acceptable picture quality) when directly driven from the video pre-amp IC.

## DESCRIPTION

Hybrid amplifier module comprising three video amplifiers in a SOT451A package.

## PINNING - SOT451A

PIN	DESCRIPTION
1	input 1
2	ground
3	output 1
4	supply voltage ( $V_S$ )
5	input 2
6	ground
7	output 2
8	supply voltage ( $V_S$ )
9	input 3
10	ground
11	output 3



## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	MIN.	MAX.	UNIT
<b>Per amplifier</b>				
$V_S$	supply voltage (DC)	–	80	V
$T_{mb}$	operating mounting base temperature	–20	+100	°C
$T_{stg}$	storage temperature	–40	+125	°C

## Triple video driver hybrid amplifier

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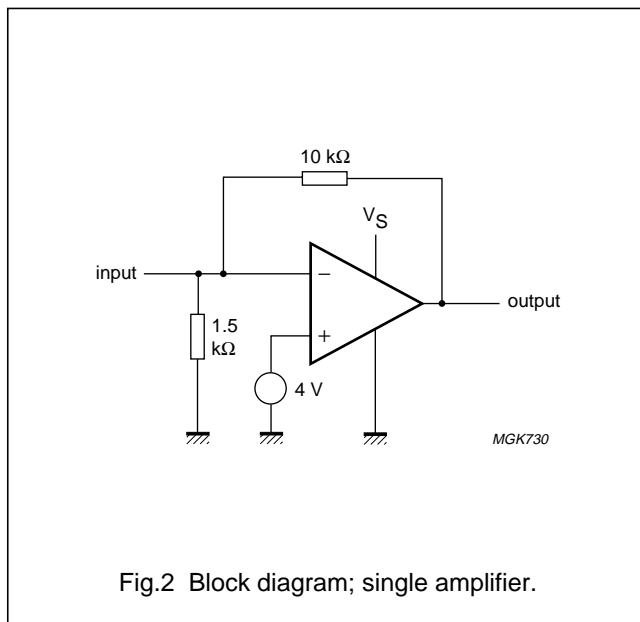
**CHARACTERISTICS**

$V_S = 75 \text{ V}$ ;  $T_C = 25 \text{ }^\circ\text{C}$ ;  $C_L = 10 \text{ pF}$ ; output swing = 45 V (p-p) with 32.5 V DC offset (see Fig.3); unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_S$	supply current	open input and open output	50	60	75	mA
$P_{\text{tot}}$	total power consumption	25 MHz square wave	–	7	8	W
$t_r$	rise time transient response	10 to 90%; note 1	–	3	4	ns
$t_f$	fall time transient response	10 to 90%; note 1	–	3	4	ns
BW	small signal bandwidth	between –3 dB points; note 2	100	120	–	MHz
$V_{\text{tilt}}$	low frequency tilt voltage	10 kHz square wave	–	1.3	1.5	V
$V_{\text{os}}$	overshoot voltage (rise and fall time)	adjustable by C1 and C2; see Fig.3	–	3	10	%
NLN	non-linearity	$V_O = 10 \text{ to } 60 \text{ V}$	–	2	5	%
$A_V$	DC voltage gain	50 $\Omega$ source; note 3	11	12.5	14	
$V_G$	insertion gain	50 $\Omega$ source; note 4	110	130	150	

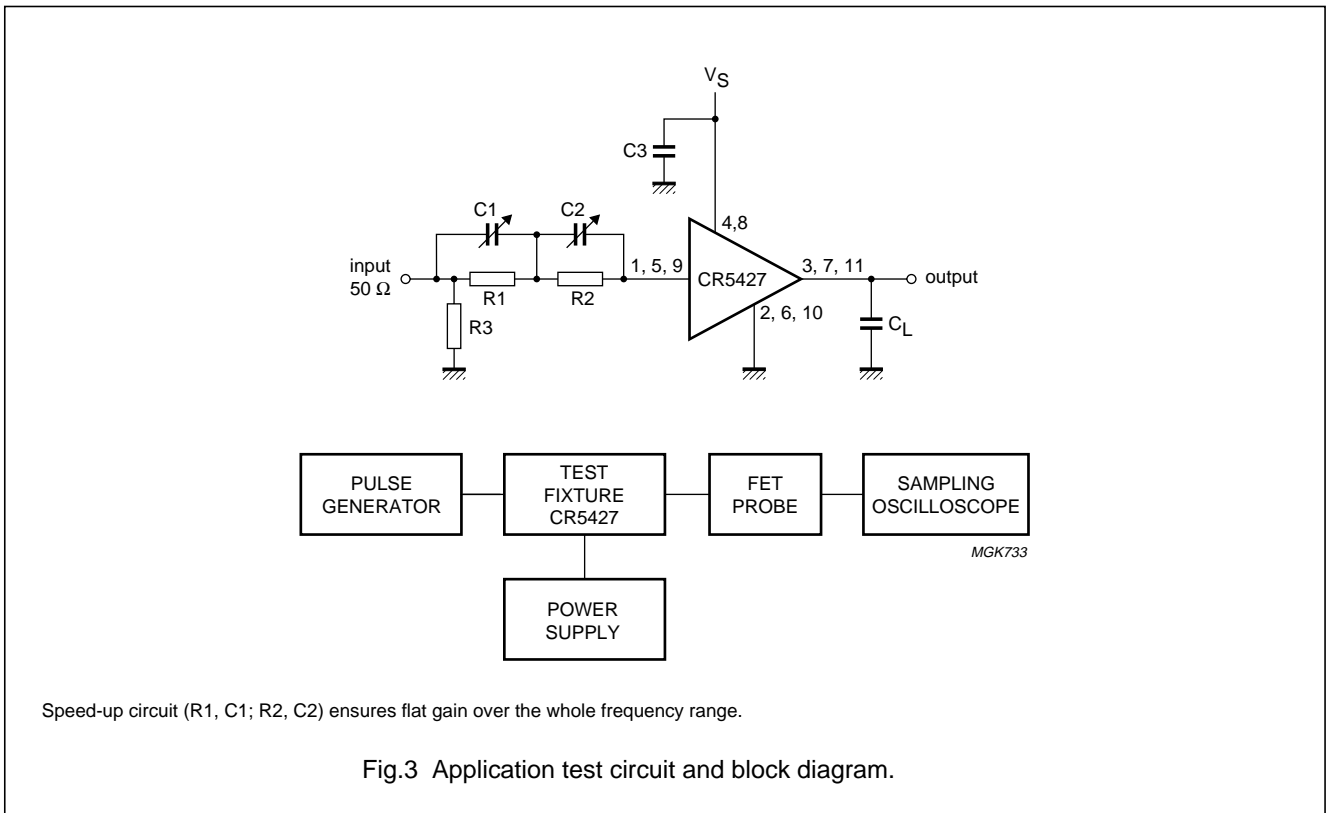
**Notes**

1. Input signal is a 100 kHz square wave of 3.5 V (p-p) with 3.5 V DC offset (50  $\Omega$  source).
2. Sinewave output signal: 1 V (p-p).
3. Measured  $V_O/V_i$  at input test circuit.
4. Measured  $V_O/V_i$  at input module.

**APPLICATION NOTES**

Triple video driver hybrid amplifier

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Components used in test circuit (see Fig.3)

COMPONENT	DESCRIPTION	VALUE
C1	variable capacitor	10 to 160 pF (typ. 120 pF)
C2	variable capacitor	10 to 160 pF (typ. 27 pF)
C3	chip capacitor plus electrolytic capacitor	10 nF plus 4.7 μF; 160 V
R1	resistor	292 Ω
R2	resistor	390 Ω
R3	resistor	100 Ω

Test equipment (see Fig.3)

EQUIPMENT	TYPE DESCRIPTION
Pulse generator	Le Croy; model 9210 with unit 9212
	Philips; model PM5785B (125 MHz) with internal DC offset
Power supply	Philips; model PE1541, 80 V
FET probe	Philips; model PM8943, attenuation 100 : 1
Sampling oscilloscope	Tektronix; model 11803, sampling head SD24

Triple video driver hybrid amplifier

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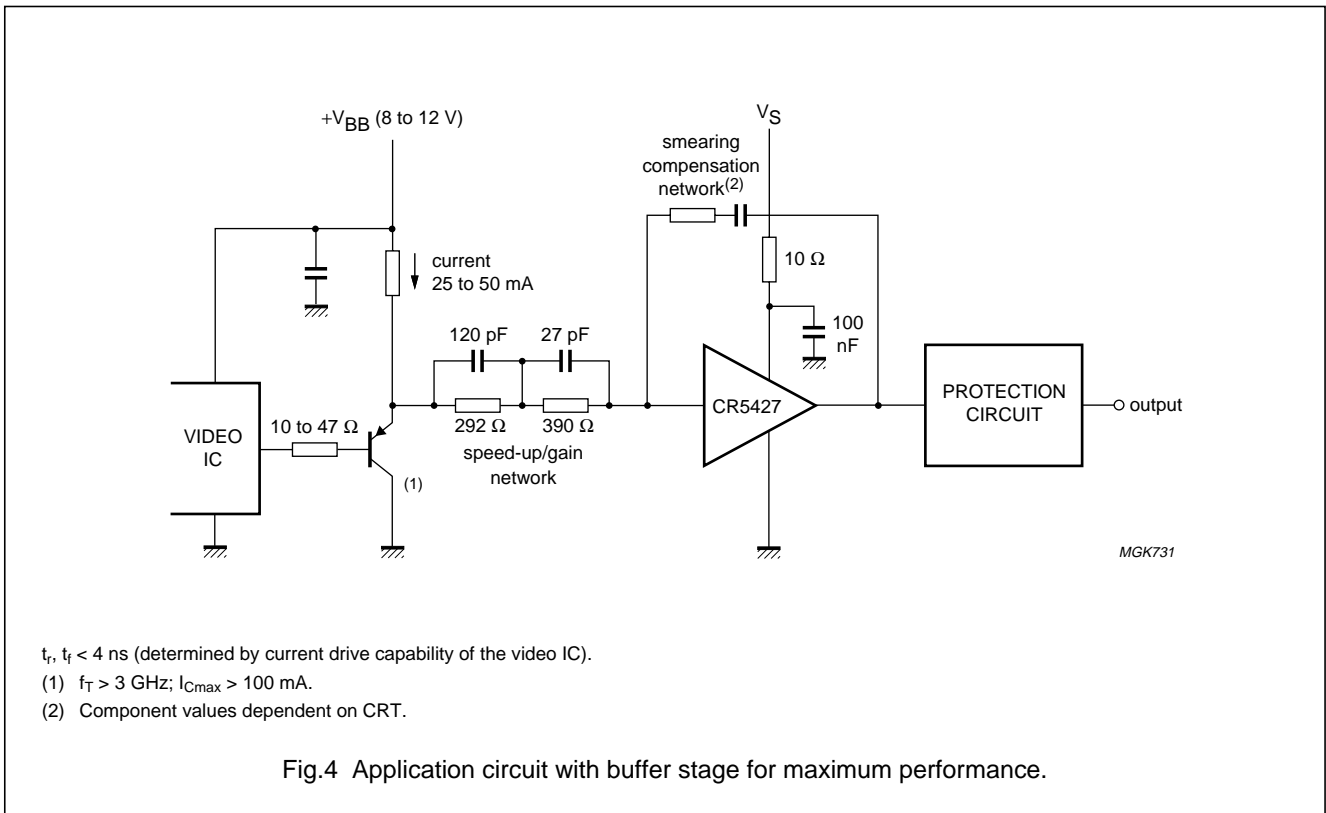


Fig.4 Application circuit with buffer stage for maximum performance.

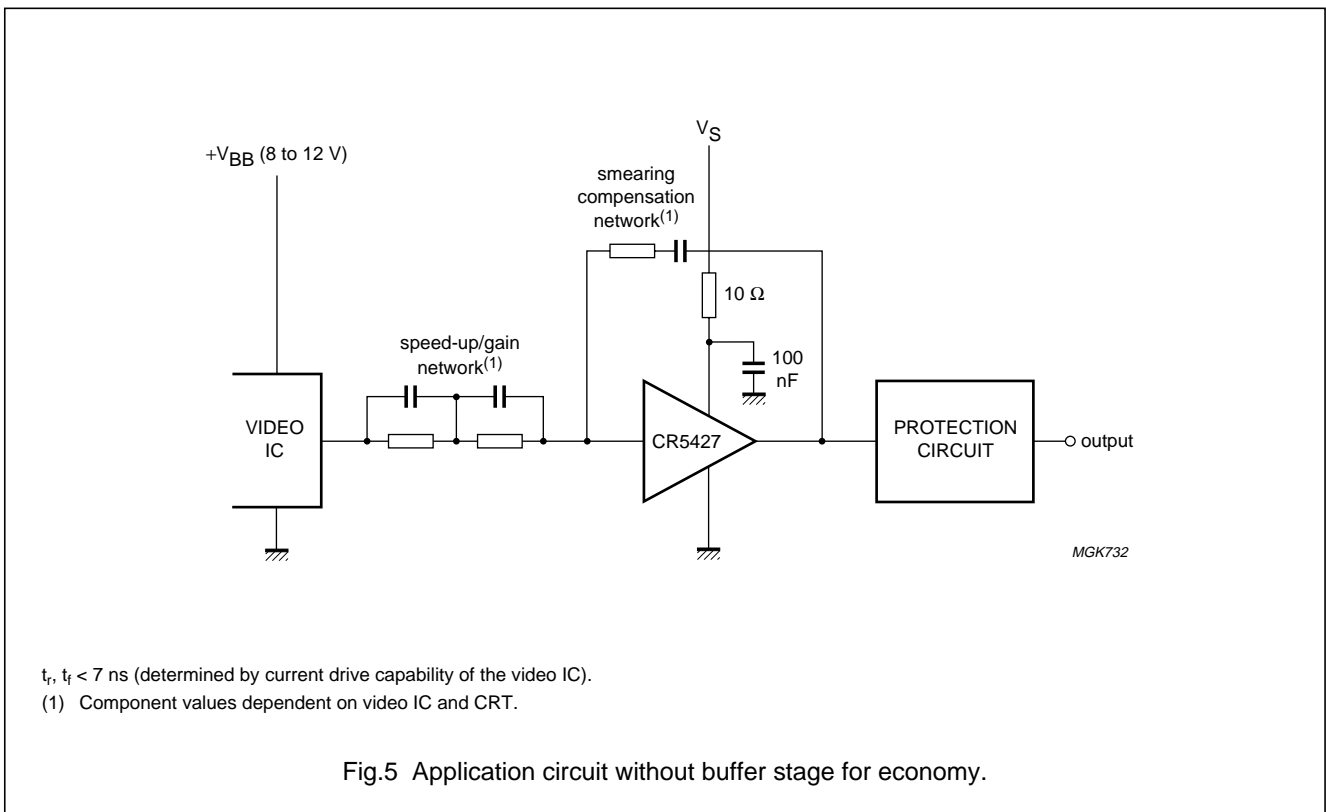


Fig.5 Application circuit without buffer stage for economy.

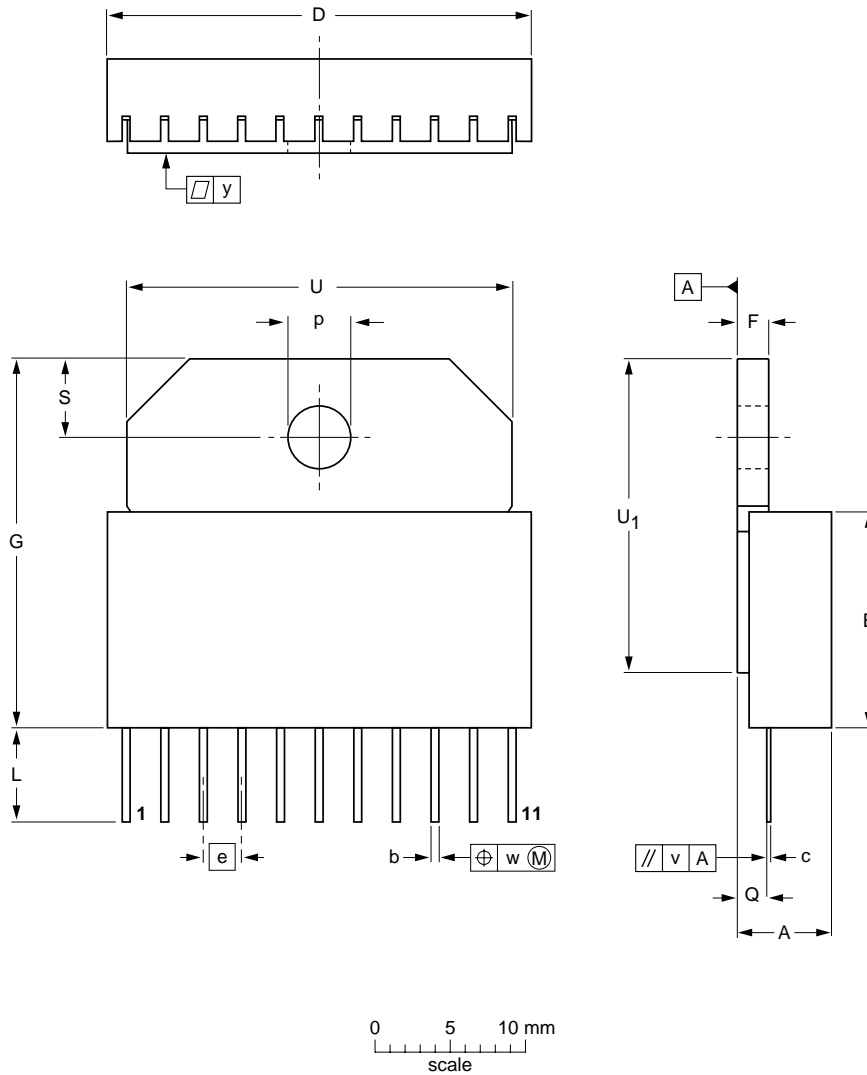
Triple video driver hybrid amplifier

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PACKAGE OUTLINE

Ceramic single-ended flat package; heatsink mounted; 1 mounting hole; 11 in-line gold-metallized leads

SOT451A



DIMENSIONS (mm are the original dimensions)

UNIT	A	b	c	D	E	e	F	G	L	p	Q	S	U	U <sub>1</sub>	v	w	y
mm	5.9 5.5	0.56 0.46	0.25	28.3 27.9	13.9 13.5	2.54	2.2 1.8	23.8 23.4	6.2 5.8	4.2 3.8	2.0 1.6	5.2 4.8	25.4 25.0	20.4 20.0	0.3	0.25	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT451A						97-06-26

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**Triple video driver hybrid amplifier****CR5427**

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**DEFINITIONS**

<b>Data Sheet Status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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