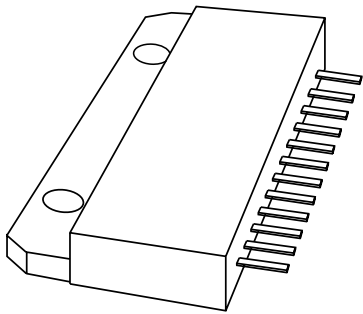


# DATA SHEET



## **CR6927A**

### Triple video driver hybrid amplifier

Product specification  
Supersedes data of 1997 Oct 09  
File under Discrete Semiconductors, SC05

1998 Feb 12

# Triple video driver hybrid amplifier

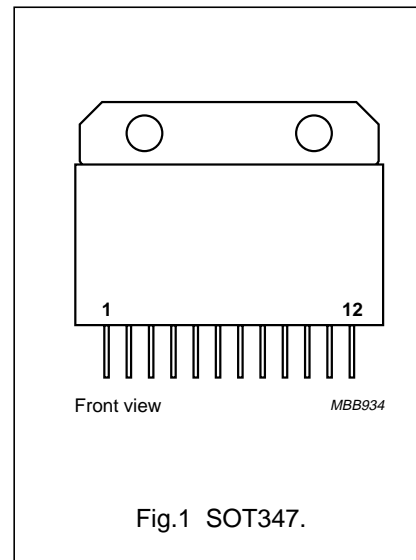
# CR6927A

## FEATURES

- Transition times (10 to 90%) with 45 V (p-p) swing and  $C_L = 10$  pF:  
 rise time (typ.) 2.5 ns  
 fall time (typ.) 2.1 ns
- Low power consumption:  
 11 W with 25 MHz square wave
- Minimum small signal bandwidth:  
 140 MHz at 1 V (p-p) or  
 120 MHz at 40 V (p-p)
- Very fast slew rate: 16000 V/ $\mu$ s
- Internal smearing compensation
- Excellent grey-scale linearity
- Unconditional stability
- Gold metallization ensures excellent reliability.

## PINNING - SOT347

PIN	DESCRIPTION
1	supply voltage 1 ( $V_{S1}$ )
2	input 1
3	ground
4	output 1
5	supply voltage 2 ( $V_{S2}$ )
6	input 2
7	ground
8	output 2
9	supply voltage 3 ( $V_{S3}$ )
10	input 3
11	ground
12	output 3



## APPLICATIONS

Cathode-ray tube (CRT) drivers in high-resolution colour monitors.

## DESCRIPTION

Hybrid amplifier module comprising three video amplifiers in a SOT347 package.

## 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)	-	90	V
$T_{mb}$	operating mounting base temperature	-20	+100	$^{\circ}$ C
$T_{stg}$	storage temperature	-40	+125	$^{\circ}$ C

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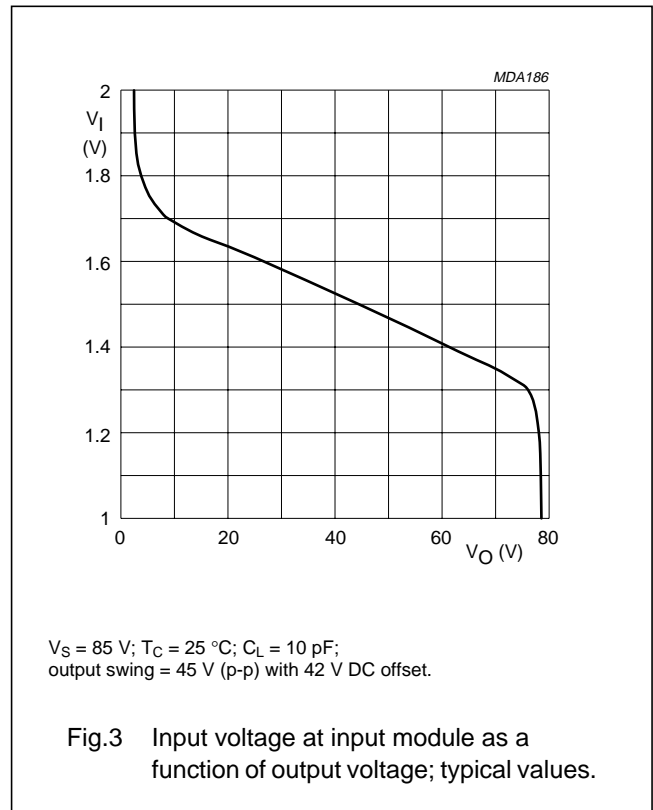
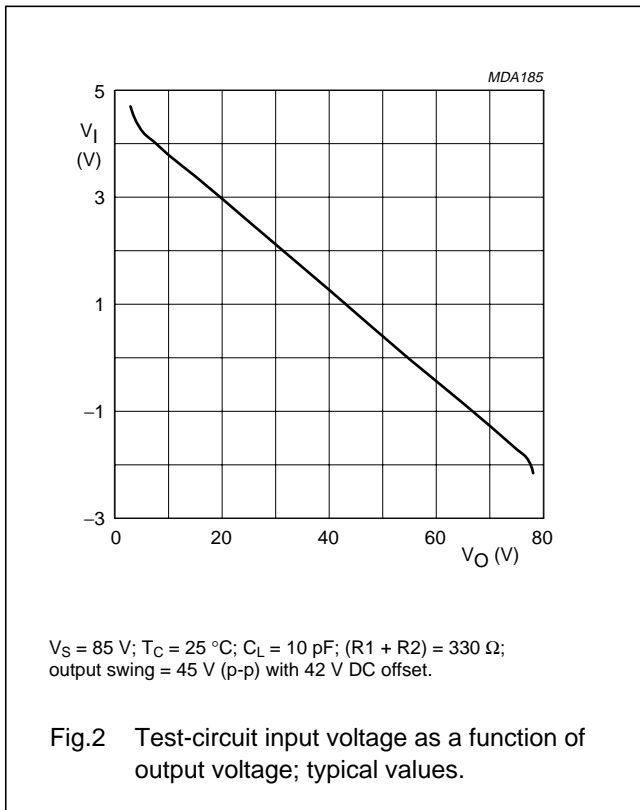
**CHARACTERISTICS**

$V_S = 85\text{ V}$ ;  $T_C = 25\text{ }^\circ\text{C}$ ;  $C_L = 10\text{ pF}$ ; output swing = 45 V (p-p) with 42.5 V DC offset (see Fig 7) unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_S$	supply current	open input and open output	105	120	135	mA
$P_{tot}$	total power dissipation	25 MHz square wave	–	12	12.5	W
$t_r$	rise time transient response	10 to 90%; note 1	–	2.5	3.1	ns
$t_f$	fall time transient response	10 to 90%; note 1	–	2.1	2.5	ns
BW	small signal bandwidth	between –3 dB points; note 2	140	150	–	MHz
$V_{tilt}$	low frequency tilt voltage	10 kHz square wave	–	1.3	1.5	V
$V_{os}$	overshoot voltage (rise and fall time)	adjustable by C1 and C2; see Fig 7	–	3	10	%
NLN	non-linearity	$V_O = 5\text{ to }75\text{ V}$	–	2	5	%
$A_V$	DC voltage gain	50 $\Omega$ source; note 3	11.2	12.4	13.6	
$V_G$	insertion gain	50 $\Omega$ source; note 4	160	180	200	

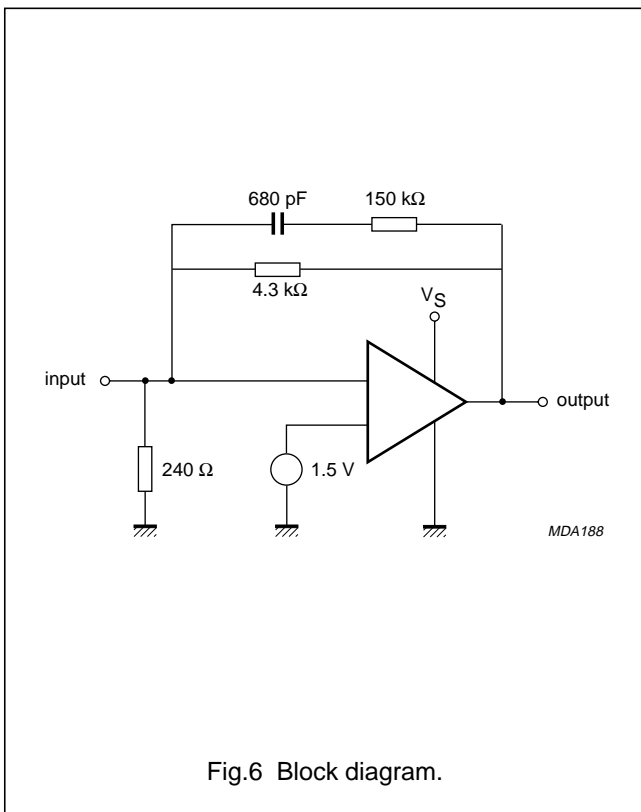
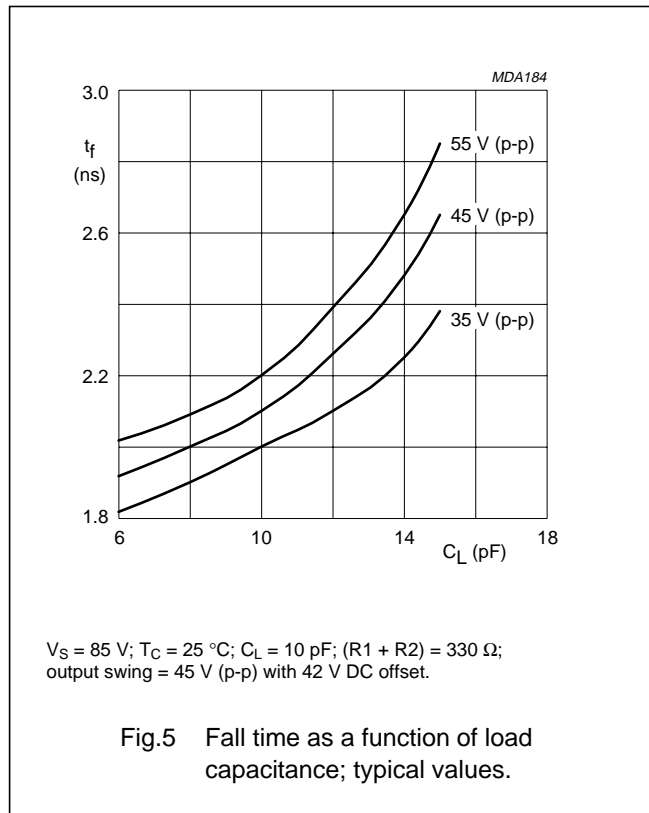
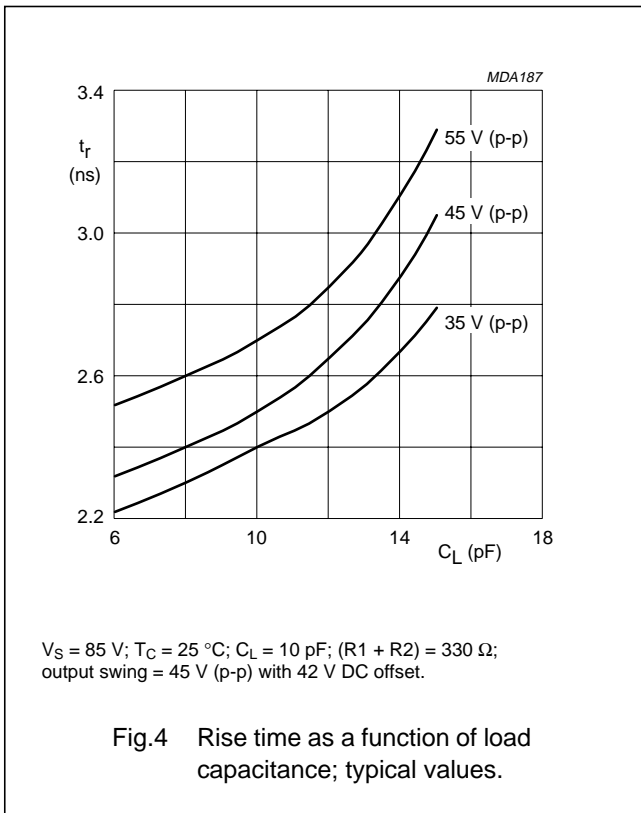
**Notes**

1. Input signal is a 100 kHz square wave of 3.8 V (p-p) with 1.5 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.



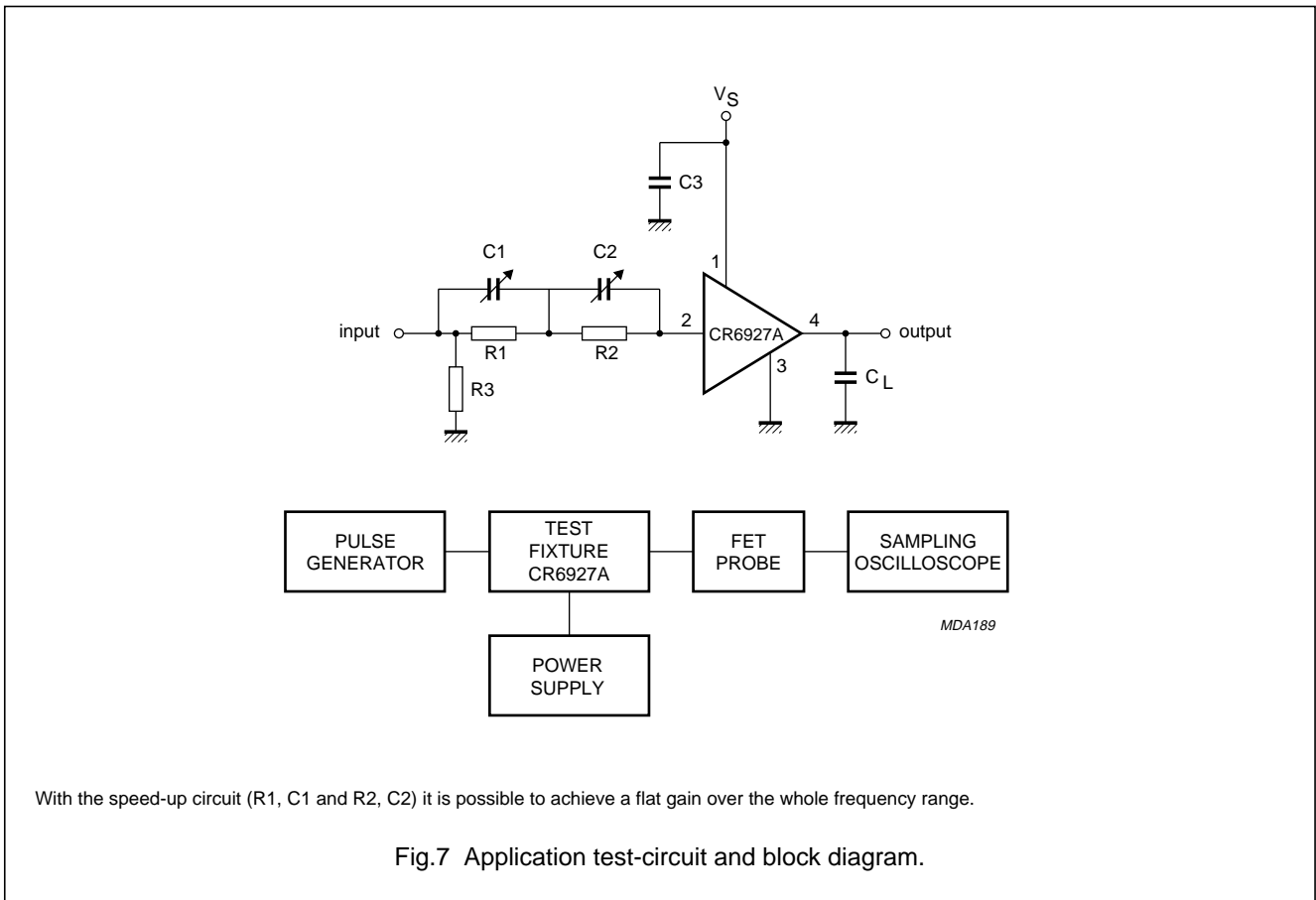
Triple video driver hybrid amplifier

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Triple video driver hybrid amplifier

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Components used in Test-circuit (see Fig.7)

DESIGNATION	DESCRIPTION	VALUE
C1	variable capacitor	10 to 160 pF (typ. 68 pF)
C2	variable capacitor	10 to 160 pF (typ. 100 pF)
C3	chip capacitor plus electrolytic capacitor	10 nF plus 4.7 μF; 160 V
R1	resistor	275 Ω
R2	resistor	62 Ω
R3	resistor	50 Ω

Test-equipment (see Fig.7)

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

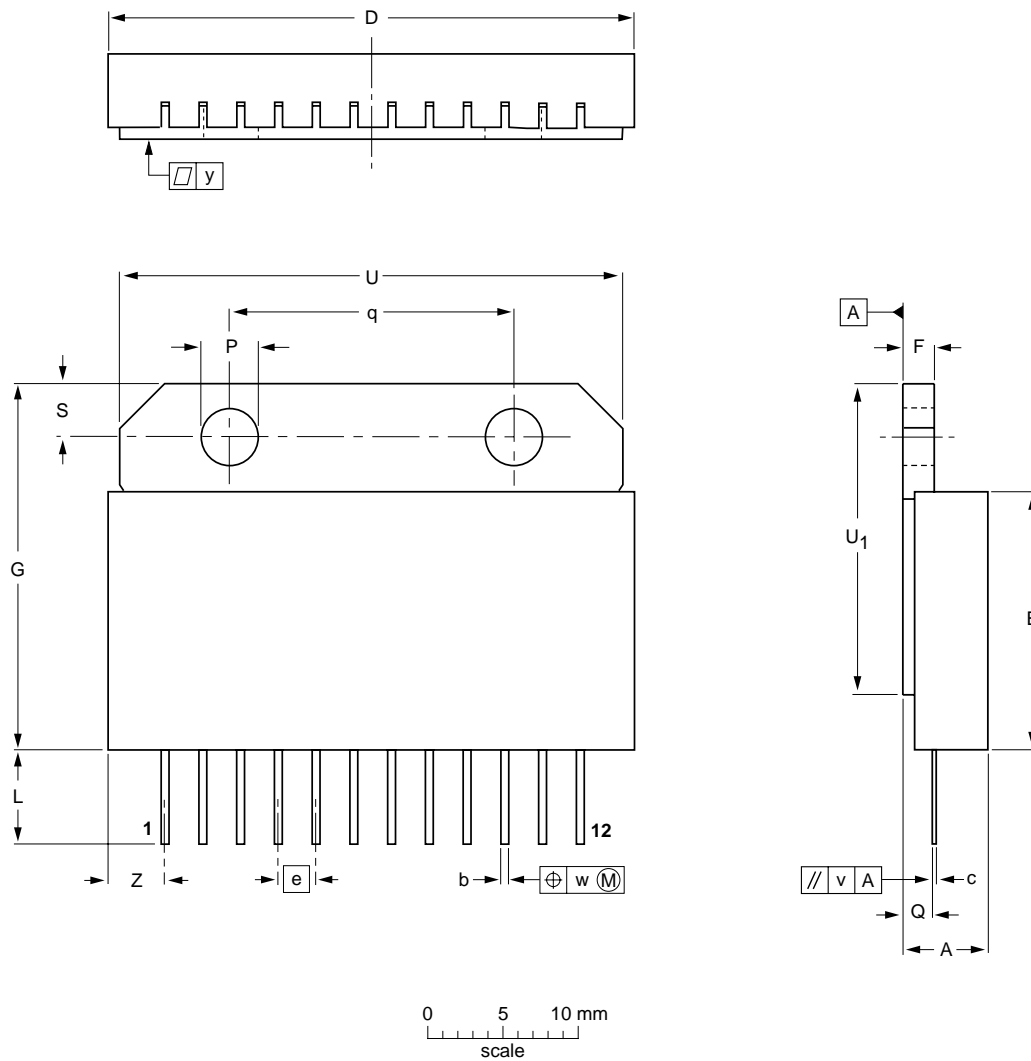
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PACKAGE OUTLINE

Ceramic single-ended flat package; heatsink mounted; 2 mounting holes;  
12 in-line tin (Sn) plated leads

SOT347



DIMENSIONS (mm are the original dimensions)

UNIT	A	b	c	D	E	e	F	G	L min.	P	Q	q	S	U	U <sub>1</sub>	v	w	y	Z max.
mm	6.0 5.6	0.51 0.38	0.25	36.2 35.8	18.2 17.8	2.54	2.0	25.5 24.5	6	4.15 3.85	1.8	19	3.5 3.4	34.4 34.0	22.2 21.8	0.3	0.25	0.1	4.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT347						97-06-28

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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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