

# DATA SHEET

**CR5627**

Triple video driver hybrid amplifier

Product specification  
File under Discrete Semiconductors, SC05

1995 Oct 09

# Triple video driver hybrid amplifier

# CR5627

### FEATURES

- Transition times (10 to 90%):  
3.5 ns rise and 2.7 ns fall with  
50 V (p-p) swing and  $C_L$  at 10 pF
- Low power consumption:  
10 W with 25 MHz square wave
- Minimum small signal bandwidth:  
85 MHz
- Very fast slew rate: 12000 V/ $\mu$ s
- Excellent grey-scale linearity
- Unconditional stability
- Gold metallization ensures  
excellent reliability.

### APPLICATIONS

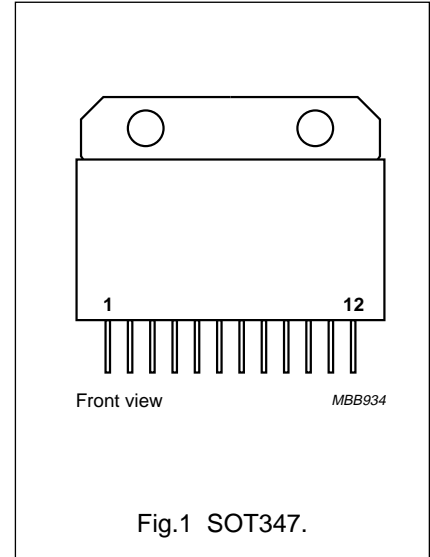
It is designed for application in cathode-ray tube (CRT) drivers in high-resolution colour monitors.

### DESCRIPTION

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

### PINNING

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



### 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	°C
$T_{stg}$	storage temperature	–40	+125	°C

## Triple video driver hybrid amplifier

CR5627

**CHARACTERISTICS**

$V_S = 80\text{ V}$ ;  $T_{mb} = 25\text{ °C}$ ;  $C_L = 10\text{ pF}$ ; output swing = 50 V (p-p) with 40 V DC offset; measured in test circuit (see Fig.6); unless otherwise specified.

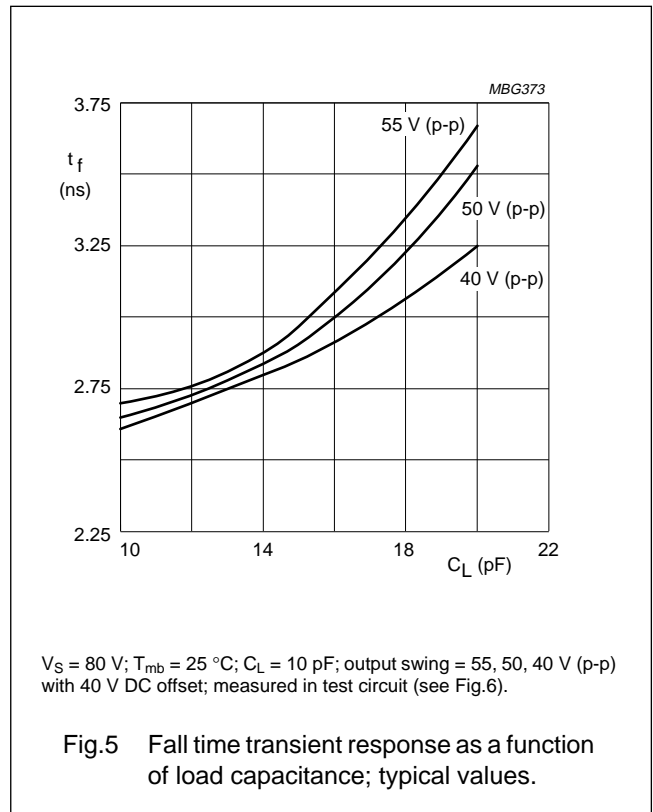
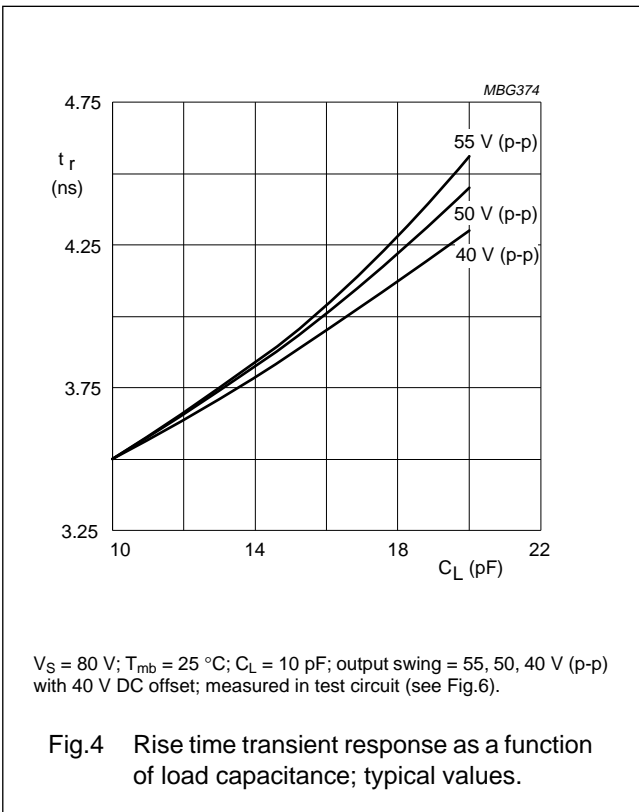
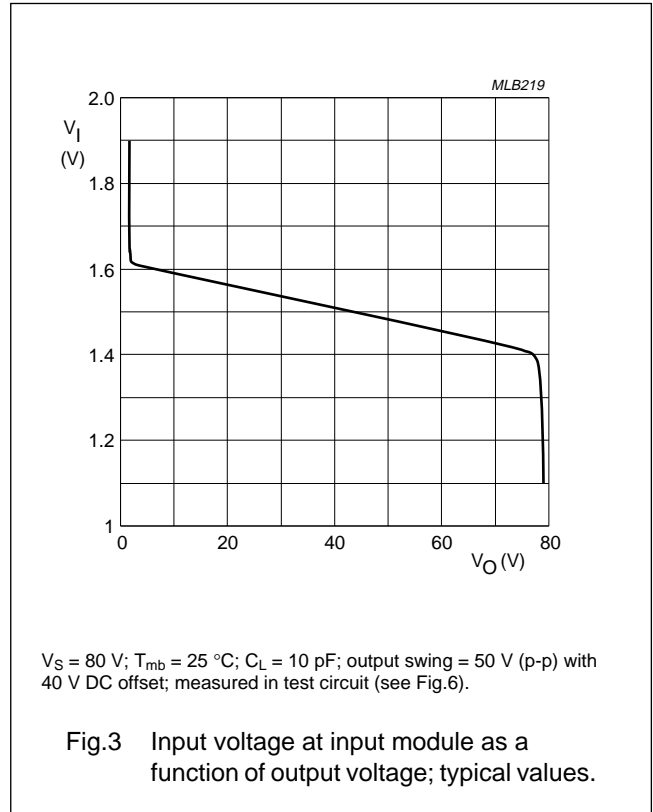
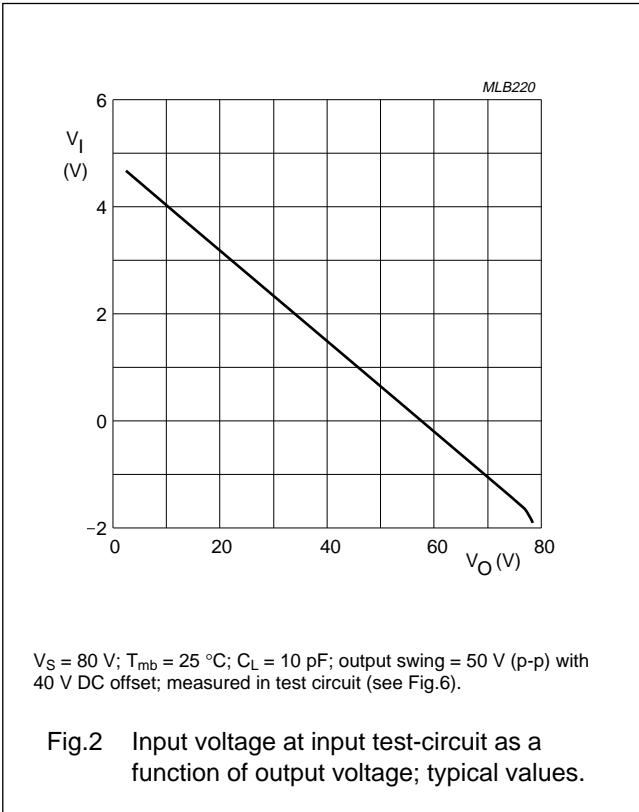
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_S$	supply current	input and output open	57	75	91	mA
$P_{tot}$	total power dissipation	25 MHz square wave	–	9.6	11	W
$t_r$	rise time transient response	10 to 90%; note 1	–	3.5	4.1	ns
$t_f$	fall time transient response	10 to 90%; note 1	–	2.7	3.3	ns
BW	small signal bandwidth	between –3 dB points; note 2	85	100	–	MHz
$V_{tilt}$	low frequency tilt voltage	10 kHz square wave	–	1.3	1.5	V
$V_{os}$	overshoot voltage	varied by C1 and C2; see Fig.6	–	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	12	13	
$V_G$	insertion gain	50 $\Omega$ source; note 4	350	370	390	

**Notes**

1. Input signal is a 100 kHz square wave of 4.15 V (p-p) with 1.5 V DC offset (50  $\Omega$  source).
2. Sinewave output signal: 1 V (p-p).
3. Measured  $V_O/V_I$  (Fig.2) at input test-circuit (see Fig.6).
4. Measured  $V_O/V_I$  (Fig.3) at input module (see Fig.6).

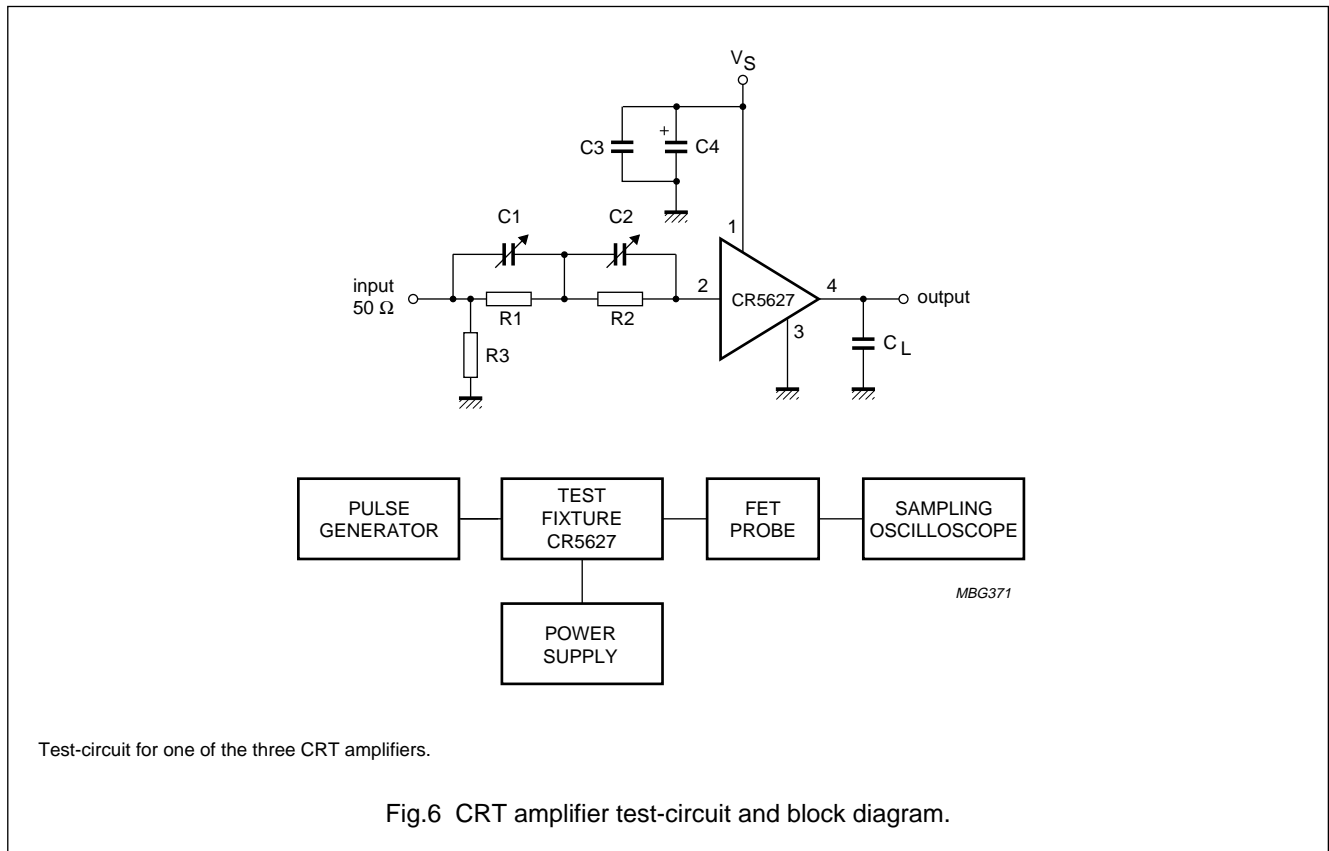
Triple video driver hybrid amplifier

CR5627



Triple video driver hybrid amplifier

CR5627



Components used in test-circuit (see Fig.6)

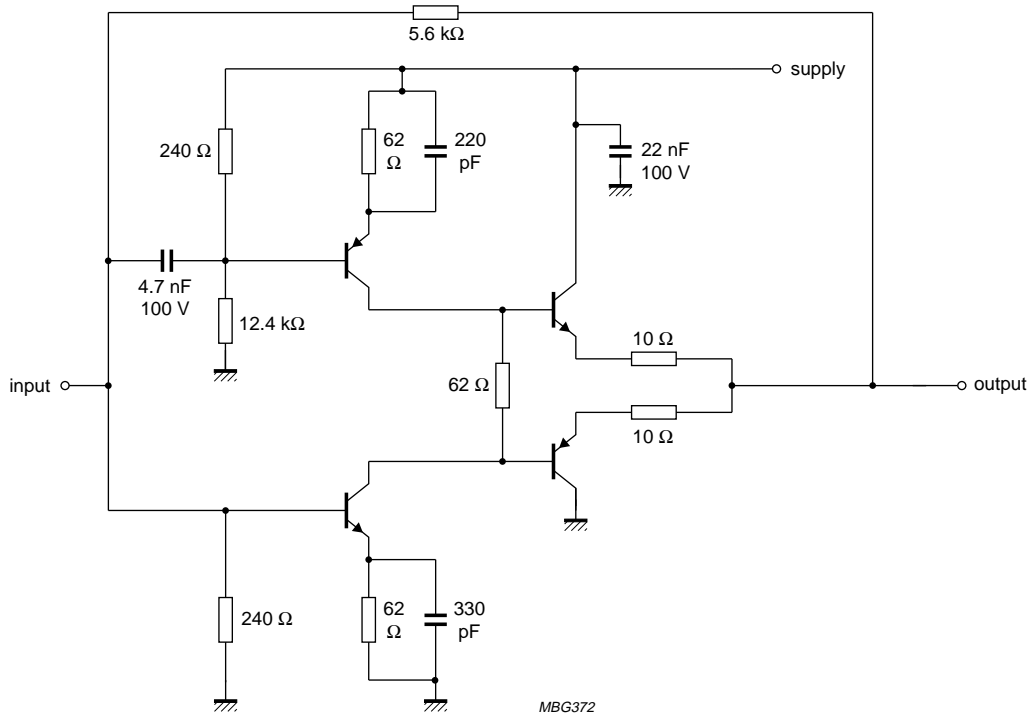
DESIGNATION	DESCRIPTION	VALUE
C1	variable capacitor	10 to 160 pF (typ. 90 pF)
C2	variable capacitor	10 to 160 pF (typ. 100 pF)
C3	chip capacitor	10 nF
C4	electrolytic capacitor	4.7 μF; 160 V
R1	resistor	typ. 348 Ω
R2	resistor	typ. 82 Ω
R3	resistor	50 Ω

Equipment used in test-circuit (see Fig.6)

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

CR5627



Supply voltage  $V_{S1}$ ,  $V_{S2}$  and  $V_{S3}$  are internally connected.

Fig.7 Internal circuit, single amplifier.



## Triple video driver hybrid amplifier

CR5627

**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.	

**LIFE SUPPORT APPLICATIONS**

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.