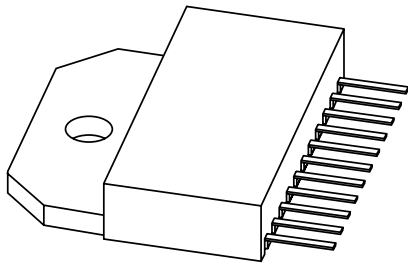


# DATA SHEET



**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  $C_L = 10 \text{ pF}$ :  
 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/ $\mu\text{s}$
- 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

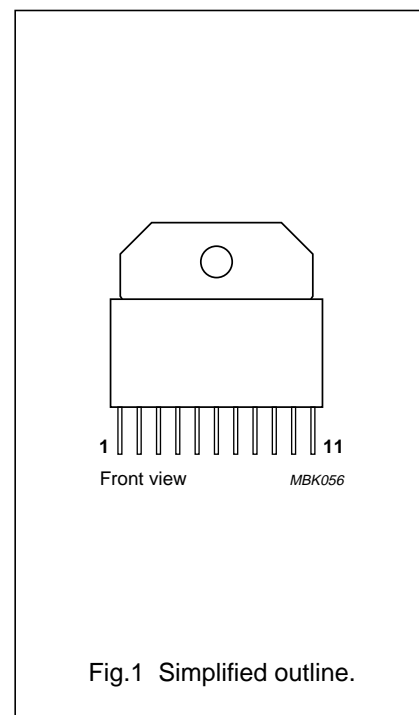


Fig.1 Simplified outline.

## 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	$^{\circ}\text{C}$
$T_{stg}$	storage temperature	-40	+125	$^{\circ}\text{C}$

## Triple video driver hybrid amplifier

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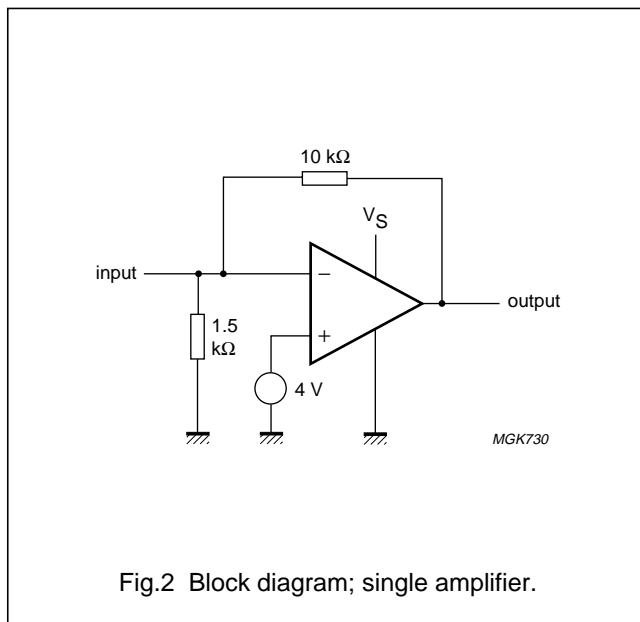
**CHARACTERISTICS**

$V_S = 75 \text{ V}$ ;  $T_C = 25 \text{ }^\circ\text{C}$ ;  $C_L = 10 \text{ pF}$ ; 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	

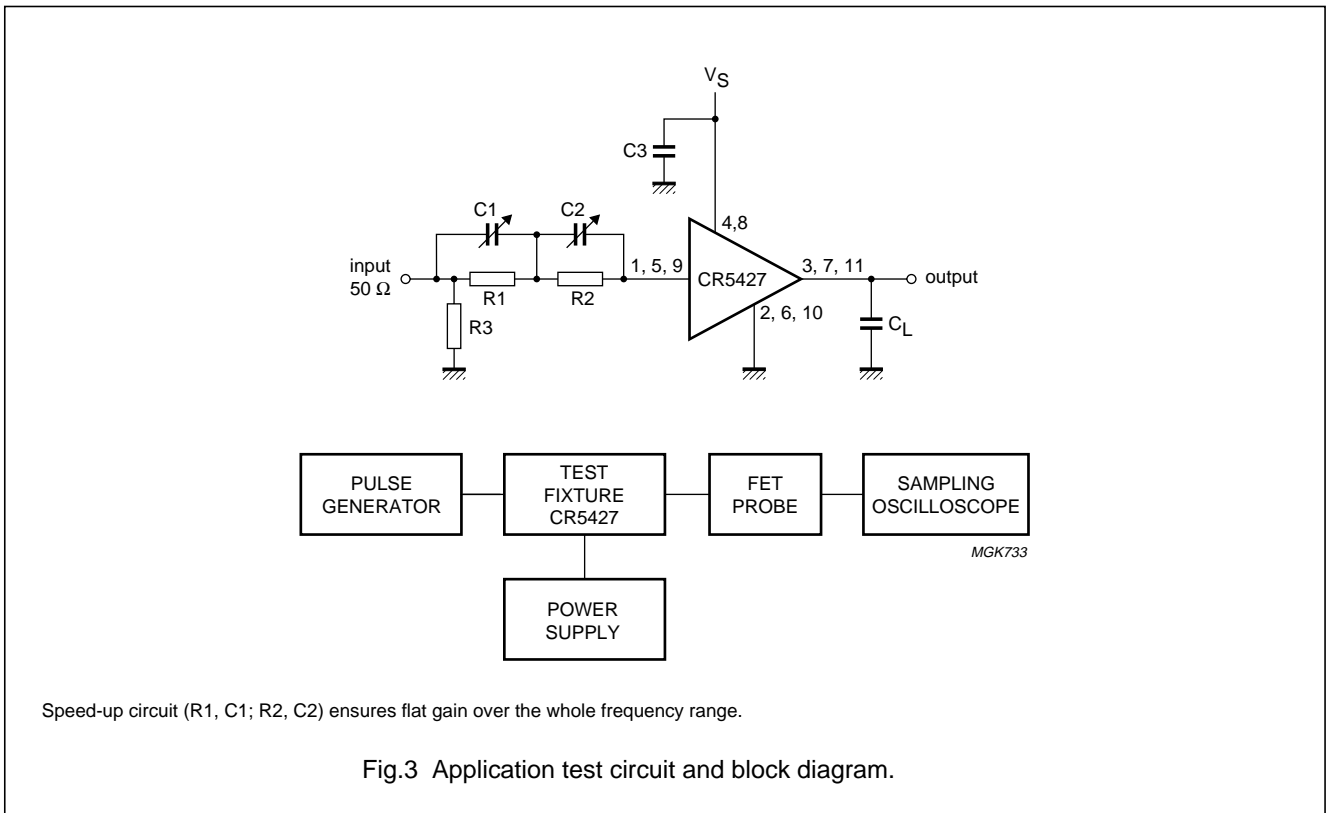
**Notes**

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

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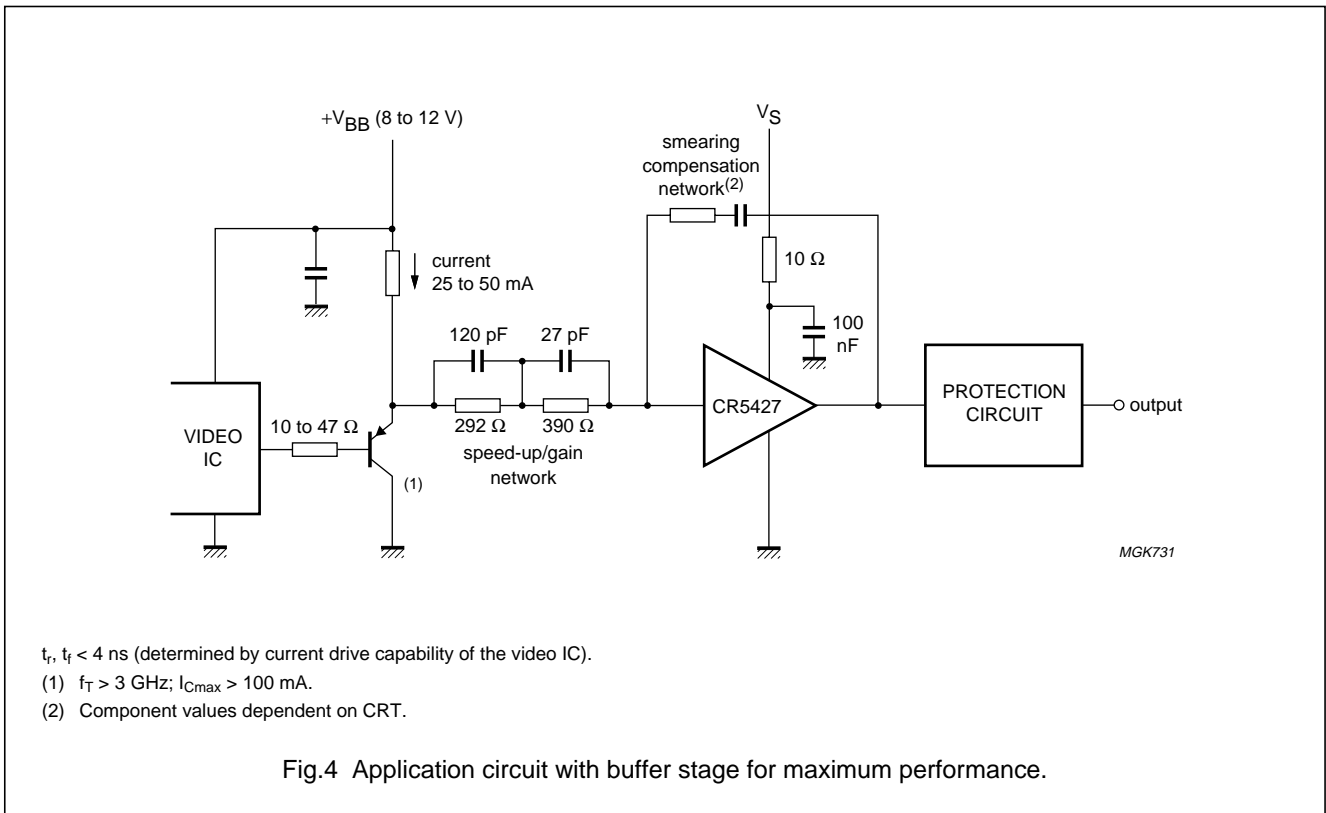


Fig.4 Application circuit with buffer stage for maximum performance.

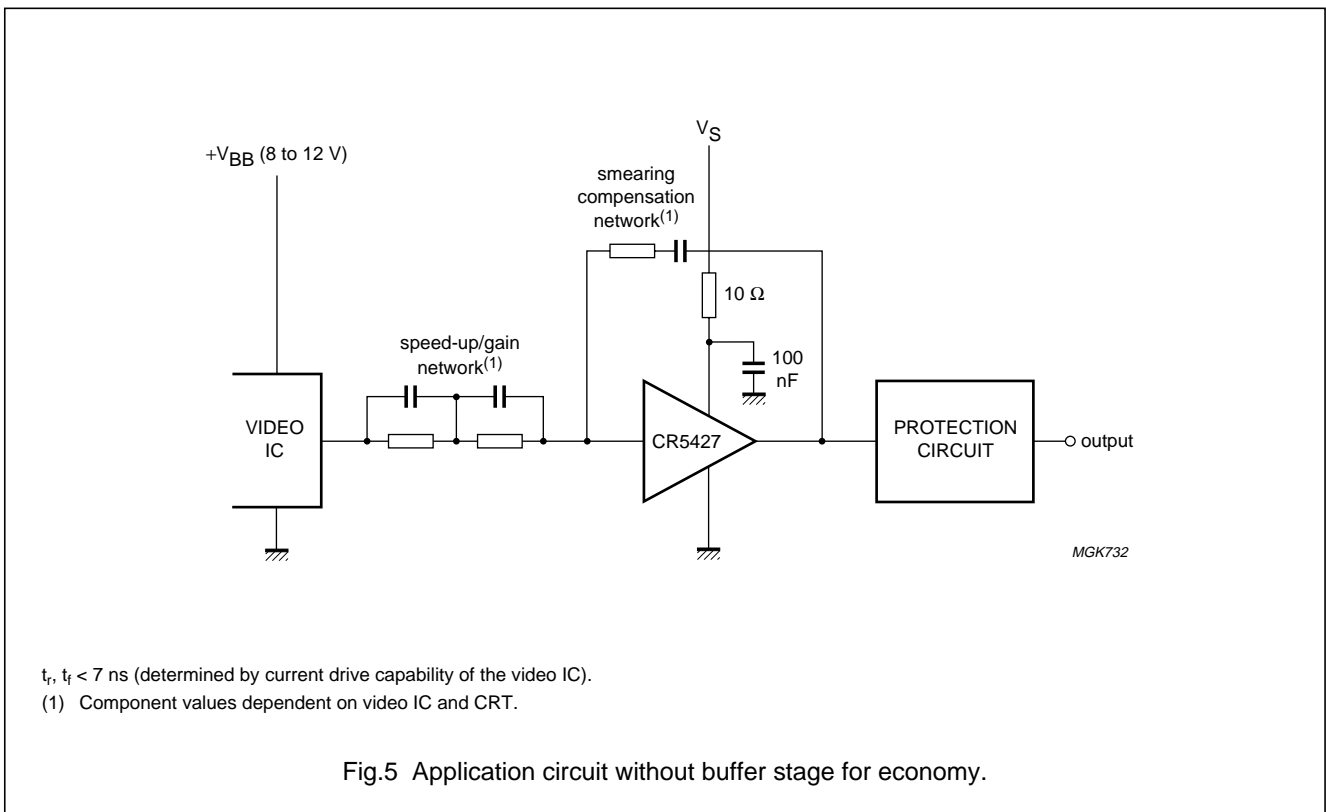


Fig.5 Application circuit without buffer stage for economy.

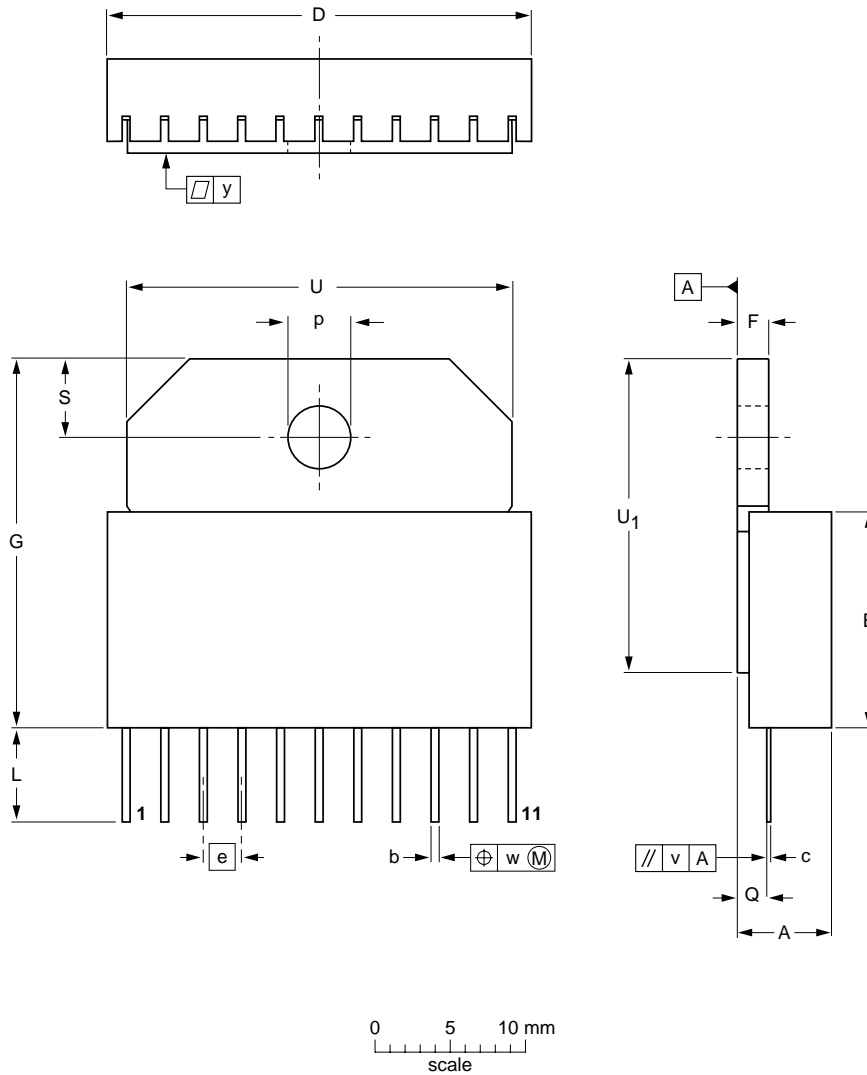
Triple video driver hybrid amplifier

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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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# Philips Semiconductors – a worldwide company

**Argentina:** see South America

**Australia:** 34 Waterloo Road, NORTH RYDE, NSW 2113,  
Tel. +61 2 9805 4455, Fax. +61 2 9805 4466

**Austria:** Computerstr. 6, A-1101 WIEN, P.O. Box 213, Tel. +43 160 1010,  
Fax. +43 160 101 1210

**Belarus:** Hotel Minsk Business Center, Bld. 3, r. 1211, Volodarski Str. 6,  
220050 MINSK, Tel. +375 172 200 733, Fax. +375 172 200 773

**Belgium:** see The Netherlands

**Brazil:** see South America

**Bulgaria:** Philips Bulgaria Ltd., Energoproject, 15th floor,  
51 James Bourchier Blvd., 1407 SOFIA,  
Tel. +359 2 689 211, Fax. +359 2 689 102

**Canada:** PHILIPS SEMICONDUCTORS/COMPONENTS,  
Tel. +1 800 234 7381

**China/Hong Kong:** 501 Hong Kong Industrial Technology Centre,  
72 Tat Chee Avenue, Kowloon Tong, HONG KONG,  
Tel. +852 2319 7888, Fax. +852 2319 7700

**Colombia:** see South America

**Czech Republic:** see Austria

**Denmark:** Prags Boulevard 80, PB 1919, DK-2300 COPENHAGEN S,  
Tel. +45 32 88 2636, Fax. +45 31 57 0044

**Finland:** Sinikalliontie 3, FIN-02630 ESPOO,  
Tel. +358 9 615800, Fax. +358 9 61580920

**France:** 4 Rue du Port-aux-Vins, BP317, 92156 SURESNES Cedex,  
Tel. +33 1 40 99 6161, Fax. +33 1 40 99 6427

**Germany:** Hammerbrookstraße 69, D-20097 HAMBURG,  
Tel. +49 40 23 53 60, Fax. +49 40 23 536 300

**Greece:** No. 15, 25th March Street, GR 17778 TAVROS/ATHENS,  
Tel. +30 1 4894 339/239, Fax. +30 1 4814 240

**Hungary:** see Austria

**India:** Philips INDIA Ltd, Band Box Building, 2nd floor,  
254-D, Dr. Annie Besant Road, Worli, MUMBAI 400 025,  
Tel. +91 22 493 8541, Fax. +91 22 493 0966

**Indonesia:** see Singapore

**Ireland:** Newstead, Clonskeagh, DUBLIN 14,  
Tel. +353 1 7640 000, Fax. +353 1 7640 200

**Israel:** RAPAC Electronics, 7 Kehilat Saloniki St, PO Box 18053,  
TEL AVIV 61180, Tel. +972 3 645 0444, Fax. +972 3 649 1007

**Italy:** PHILIPS SEMICONDUCTORS, Piazza IV Novembre 3,  
20124 MILANO, Tel. +39 2 6752 2531, Fax. +39 2 6752 2557

**Japan:** Philips Bldg 13-37, Kohnan 2-chome, Minato-ku, TOKYO 108,  
Tel. +81 3 3740 5130, Fax. +81 3 3740 5077

**Korea:** Philips House, 260-199 Itaewon-dong, Yongsan-ku, SEOUL,  
Tel. +82 2 709 1412, Fax. +82 2 709 1415

**Malaysia:** No. 76 Jalan Universiti, 46200 PETALING JAYA, SELANGOR,  
Tel. +60 3 750 5214, Fax. +60 3 757 4880

**Mexico:** 5900 Gateway East, Suite 200, EL PASO, TEXAS 79905,  
Tel. +9-5 800 234 7381

**Middle East:** see Italy

**Netherlands:** Postbus 90050, 5600 PB EINDHOVEN, Bldg. VB,  
Tel. +31 40 27 82785, Fax. +31 40 27 88399

**New Zealand:** 2 Wagener Place, C.P.O. Box 1041, AUCKLAND,  
Tel. +64 9 849 4160, Fax. +64 9 849 7811

**Norway:** Box 1, Manglerud 0612, OSLO,  
Tel. +47 22 74 8000, Fax. +47 22 74 8341

**Philippines:** Philips Semiconductors Philippines Inc.,  
106 Valero St. Salcedo Village, P.O. Box 2108 MCC, MAKATI,  
Metro MANILA, Tel. +63 2 816 6380, Fax. +63 2 817 3474

**Poland:** Ul. Lukiska 10, PL 04-123 WARSZAWA,  
Tel. +48 22 612 2831, Fax. +48 22 612 2327

**Portugal:** see Spain

**Romania:** see Italy

**Russia:** Philips Russia, Ul. Usatcheva 35A, 119048 MOSCOW,  
Tel. +7 095 755 6918, Fax. +7 095 755 6919

**Singapore:** Lorong 1, Toa Payoh, SINGAPORE 1231,  
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**Slovakia:** see Austria

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**South Africa:** S.A. PHILIPS Pty Ltd., 195-215 Main Road Martindale,  
2092 JOHANNESBURG, P.O. Box 7430 Johannesburg 2000,  
Tel. +27 11 470 5911, Fax. +27 11 470 5494

**South America:** Rua do Rocio 220, 5th floor, Suite 51,  
04552-903 São Paulo, SÃO PAULO - SP, Brazil,  
Tel. +55 11 821 2333, Fax. +55 11 829 1849

**Spain:** Balmes 22, 08007 BARCELONA,  
Tel. +34 3 301 6312, Fax. +34 3 301 4107

**Sweden:** Kottbygatan 7, Akalla, S-16485 STOCKHOLM,  
Tel. +46 8 632 2000, Fax. +46 8 632 2745

**Switzerland:** Allmendstrasse 140, CH-8027 ZÜRICH,  
Tel. +41 1 488 2686, Fax. +41 1 481 7730

**Taiwan:** Philips Semiconductors, 6F, No. 96, Chien Kuo N. Rd., Sec. 1,  
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**Thailand:** PHILIPS ELECTRONICS (THAILAND) Ltd.,  
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**Turkey:** Talatpasa Cad. No. 5, 80640 GÜLTEPE/ISTANBUL,  
Tel. +90 212 279 2770, Fax. +90 212 282 6707

**Ukraine:** PHILIPS UKRAINE, 4 Patrice Lumumba str., Building B, Floor 7,  
252042 KIEV, Tel. +380 44 264 2776, Fax. +380 44 268 0461

**United Kingdom:** Philips Semiconductors Ltd., 276 Bath Road, Hayes,  
MIDDLESEX UB3 5BX, Tel. +44 181 730 5000, Fax. +44 181 754 8421

**United States:** 811 East Arques Avenue, SUNNYVALE, CA 94088-3409,  
Tel. +1 800 234 7381

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**Yugoslavia:** PHILIPS, Trg N. Pasica 5/v, 11000 BEOGRAD,  
Tel. +381 11 625 344, Fax. +381 11 635 777

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