

# SP4904

## 2.5GHz ÷4 PRESCALER

The SP4904 prescaler is one a range of very high speed low power prescalers for use in consumer applications such as satellite TV receivers. The device features a complementary output stage with on-chip current sources for the emitter follower outputs.

### FEATURES

- High Speed Operation 2.5GHz
- Silicon Technology for Low Phase Noise
- Very Low Power Dissipation 300mW
- Single 5V Supply Operation
- High Input Sensitivity
- Very Wide Operating Frequency Range
- Electrostatic Protection †

† ESD precautions must be observed

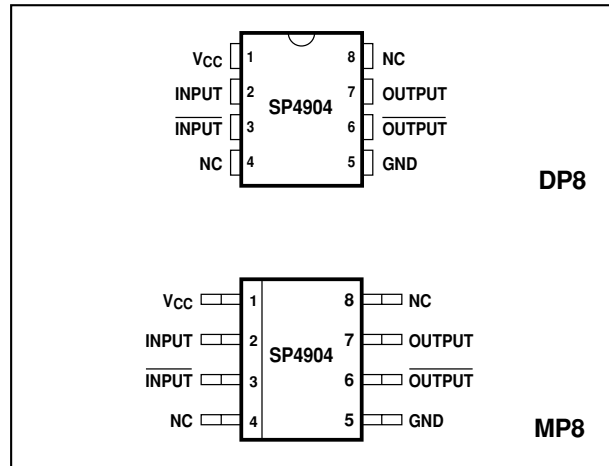


Fig 1. Pin connections - top view

### ABSOLUTE MAXIMUM RATINGS

Supply voltage, V <sub>CC</sub>	+6.5V
Input voltage	2.5V p-p
Storage temperature	-55°C to +150°C
Junction temperature	+175°C

### ORDERING INFORMATION

SP4904 NA DP  
SP4904 NA MP

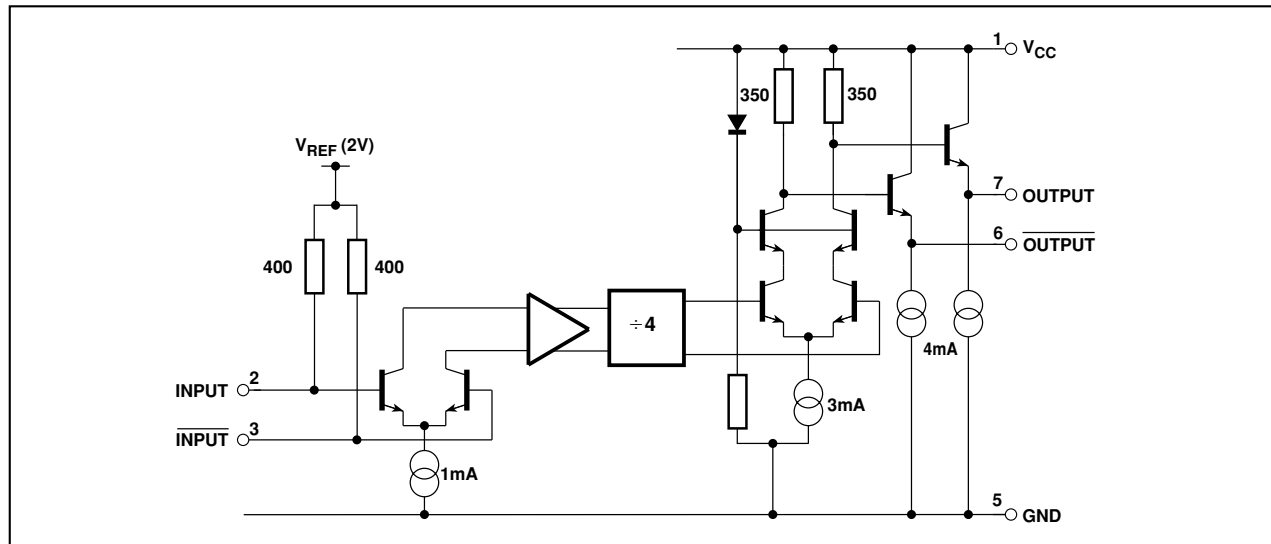


Fig. 2 SP4904 block diagram

**ELECTRICAL CHARACTERISTICS**

These characteristics are guaranteed over the following conditions (unless otherwise stated):

$T_{AMB} = -10^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ ,  $V_{CC} = +4.75\text{V}$  to  $+5.25\text{V}$  (Test circuit see Fig. 4)

Characteristic	Pin	Value			Units	Conditions
		Min.	Typ.	Max.		
Supply current, $I_{CC}$	1		60	75	mA	$V_{CC} = +5\text{V}$
Input sensitivity	2,3					
500MHz to 1800MHz				50	mV	RMS sinewave, measured in 50Ω system, see Figs 3 and 4.
2500MHz				100	mV	
Input impedance (series equivalent)	2,3		50		Ω	See Fig. 5
			2		pF	
Output voltage with $f_{IN} = 500\text{MHz}$	6,7	0.45	0.55		V p-p	$V_{CC} = +5\text{V}$ , load as Fig. 4

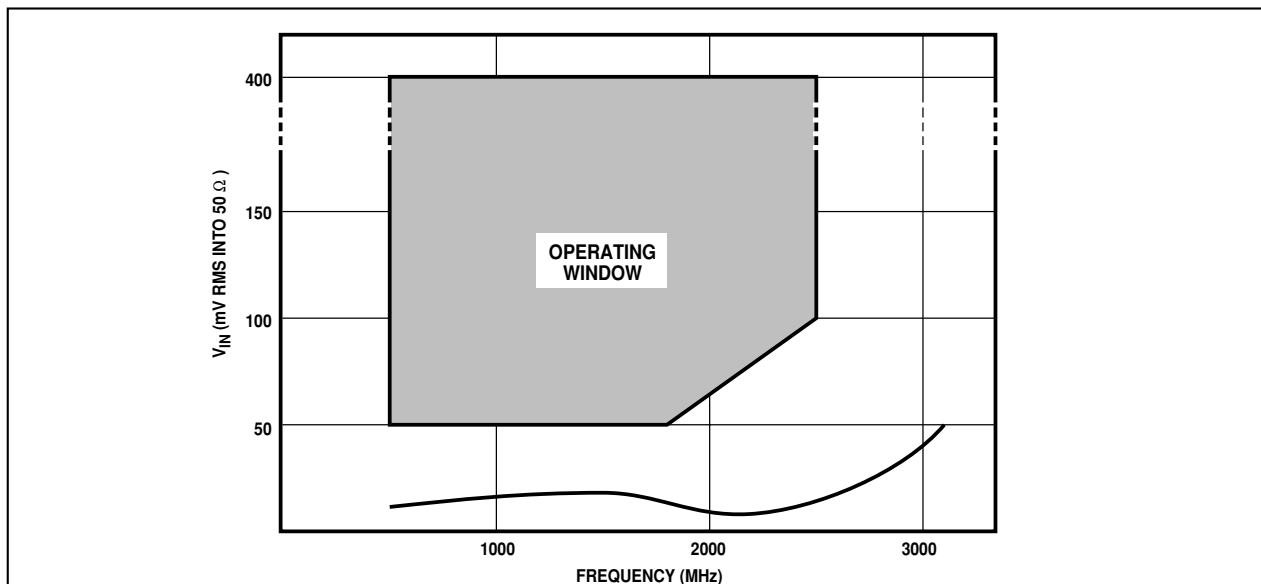


Fig. 3 Typical input sensitivity

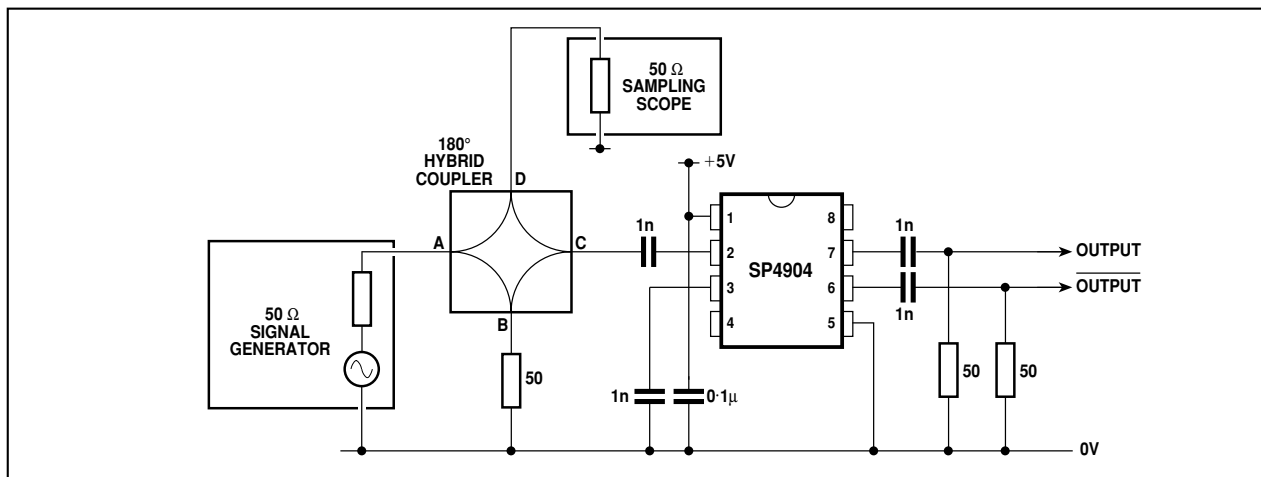


Fig. 4 Test circuit

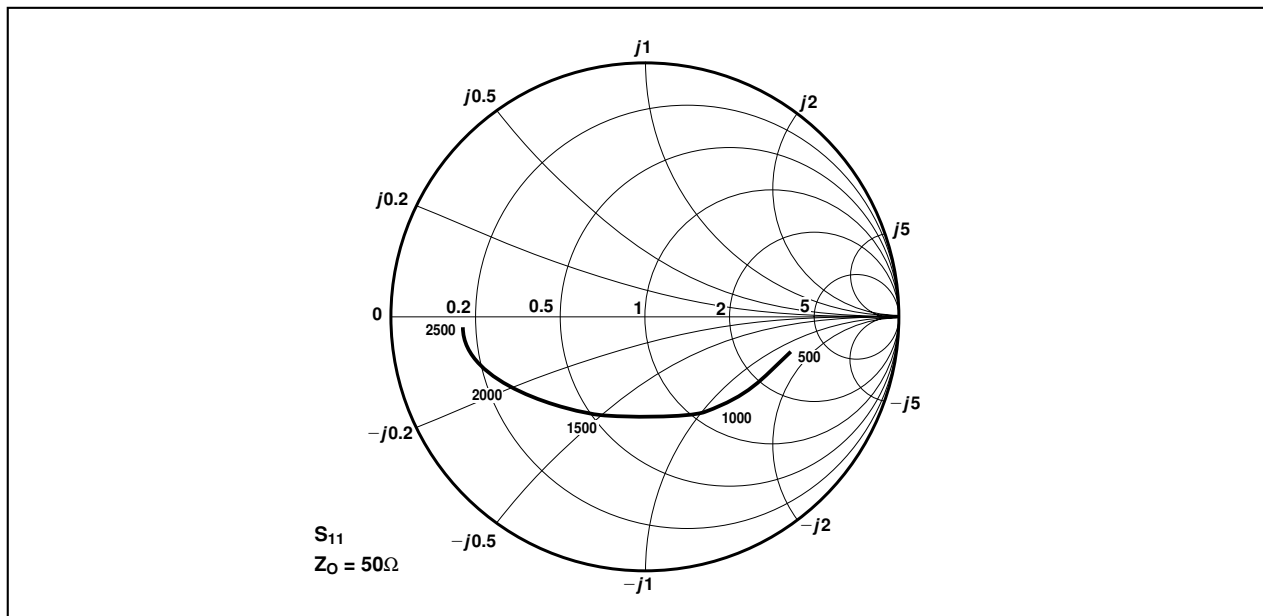


Fig. 5 Typical input impedance (frequencies in MHz)



HEADQUARTERS OPERATIONS  
**GEC PLESSEY SEMICONDUCTORS**  
Cheney Manor, Swindon,  
Wiltshire SN2 2QW, United Kingdom.  
Tel: (0793) 518000  
Fax: (0793) 518411

**GEC PLESSEY SEMICONDUCTORS**  
P.O. Box 660017  
1500 Green Hills Road,  
Scotts Valley, California 95067-0017,  
United States of America.  
Tel: (408) 438 2900  
Fax: (408) 438 5576

CUSTOMER SERVICE CENTRES

- **FRANCE & BENELUX** Les Ulis Cedex Tel: (1) 64 46 23 45 Tx: 602858F  
Fax : (1) 64 46 06 07
  - **GERMANY** Munich Tel: (089) 3609 06-0 Tx: 523980 Fax : (089) 3609 06-55
  - **ITALY** Milan Tel: (02) 66040867 Fax: (02) 66040993
  - **JAPAN** Tokyo Tel: (03) 3296-0281 Fax: (03) 3296-0228
  - **NORTH AMERICA Integrated Circuits and Microwave Products** Scotts Valley, USA  
Tel (408) 438 2900 Fax: (408) 438 7023.  
**Hybrid Products**, Farmingdale, USA Tel (516) 293 8686  
Fax: (516) 293 0061.
  - **SOUTH EAST ASIA** Singapore Tel: (65) 3827708 Fax: (65) 3828872
  - **SWEDEN** Stockholm, Tel: 46 8 702 97 70 Fax: 46 8 640 47 36
  - **UNITED KINGDOM & SCANDINAVIA**  
Swindon Tel: (0793) 518510 Tx: 444410 Fax : (0793) 518582
- These are supported by Agents and Distributors in major countries world-wide.

© GEC Plessey Semiconductors 1993 Publication No. DS2245 Issue No. 2.1 June 1993

This publication is issued to provide information only which (unless agreed by the Company in writing) may not be used, applied or reproduced for any purpose nor form part of any order or contract nor to be regarded as a representation relating to the products or services concerned. No warranty or guarantee express or implied is made regarding the capability, performance or suitability of any product or service. The Company reserves the right to alter without prior knowledge the specification, design or price of any product or service. Information concerning possible methods of use is provided as a guide only and does not constitute any guarantee that such methods of use will be satisfactory in a specific piece of equipment. It is the user's responsibility to fully determine the performance and suitability of any equipment using such information and to ensure that any publication or data used is up to date and has not been superseded. These products are not suitable for use in any medical products whose failure to perform may result in significant injury or death to the user. All products and materials are sold and services provided subject to the Company's conditions of sale, which are available on request.



**For more information about all Zarlink products  
visit our Web Site at  
[www.zarlink.com](http://www.zarlink.com)**

Information relating to products and services furnished herein by Zarlink Semiconductor Inc. trading as Zarlink Semiconductor or its subsidiaries (collectively "Zarlink") is believed to be reliable. However, Zarlink assumes no liability for errors that may appear in this publication, or for liability otherwise arising from the application or use of any such information, product or service or for any infringement of patents or other intellectual property rights owned by third parties which may result from such application or use. Neither the supply of such information or purchase of product or service conveys any license, either express or implied, under patents or other intellectual property rights owned by Zarlink or licensed from third parties by Zarlink, whatsoever. Purchasers of products are also hereby notified that the use of product in certain ways or in combination with Zarlink, or non-Zarlink furnished goods or services may infringe patents or other intellectual property rights owned by Zarlink.

This publication is issued to provide information only and (unless agreed by Zarlink in writing) may not be used, applied or reproduced for any purpose nor form part of any order or contract nor to be regarded as a representation relating to the products or services concerned. The products, their specifications, services and other information appearing in this publication are subject to change by Zarlink without notice. No warranty or guarantee express or implied is made regarding the capability, performance or suitability of any product or service. Information concerning possible methods of use is provided as a guide only and does not constitute any guarantee that such methods of use will be satisfactory in a specific piece of equipment. It is the user's responsibility to fully determine the performance and suitability of any equipment using such information and to ensure that any publication or data used is up to date and has not been superseded. Manufacturing does not necessarily include testing of all functions or parameters. These products are not suitable for use in any medical products whose failure to perform may result in significant injury or death to the user. All products and materials are sold and services provided subject to Zarlink's conditions of sale which are available on request.

Purchase of Zarlink's I<sup>2</sup>C components conveys a licence under the Philips I<sup>2</sup>C Patent rights to use these components in an I<sup>2</sup>C System, provided that the system conforms to the I<sup>2</sup>C Standard Specification as defined by Philips.

Zarlink and the Zarlink Semiconductor logo are trademarks of Zarlink Semiconductor Inc.

Copyright 2001, Zarlink Semiconductor Inc. All Rights Reserved.

TECHNICAL DOCUMENTATION - NOT FOR RESALE

---