

### Features

- High speed operation 1.5GHz
- Silicon technology for low phase noise (typically better than -140dBc/Hz at 10kHz)
- Very low power dissipation: 150mW (Typ.)
- Single 5V supply operation
- High input sensitivity
- Very wide operating frequency range
- Available as DESC SMD 5962 - 9157201MPA

DS3690

May 2002

### Ordering Information

SP8830 A DG  
 SP8830 B DG  
 DES9157201/AC/DGAZ (SMD)

- Temperature Range: -55°C to +125°C (A Grade)  
 -40 °C to +85°C (B Grade)

### Description

The SP8830 is one of a range of very high speed low power prescalers for professional and military applications. The device features a complementary output stage with on chip current sources for the emitter follower outputs.

### Absolute Maximum Ratings

Supply voltage, $V_{CC}$	6.5V
Clock input voltage	2.5V p-p
Storage temperature range	-65°C to +150°C
Junction temperature	+ 175°C

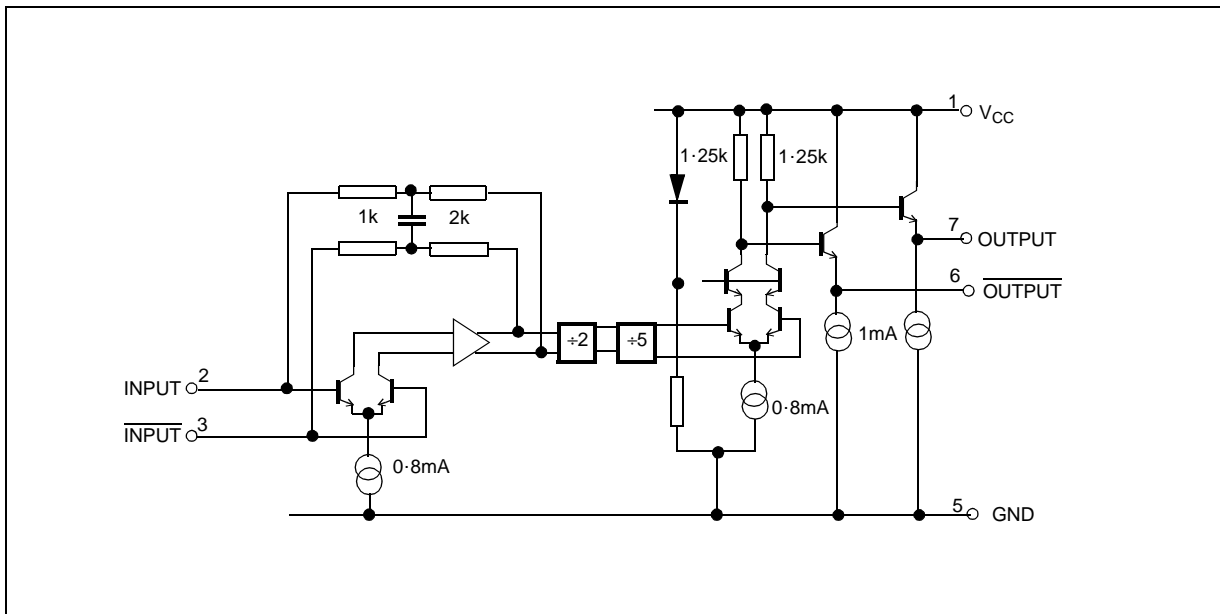


Figure 1 - SP8830 Block Diagram

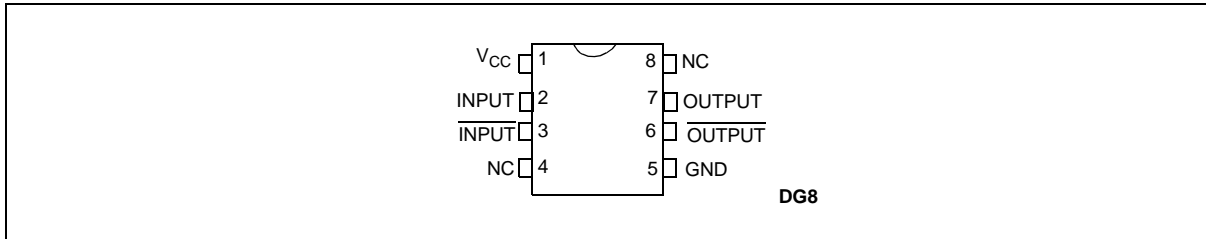
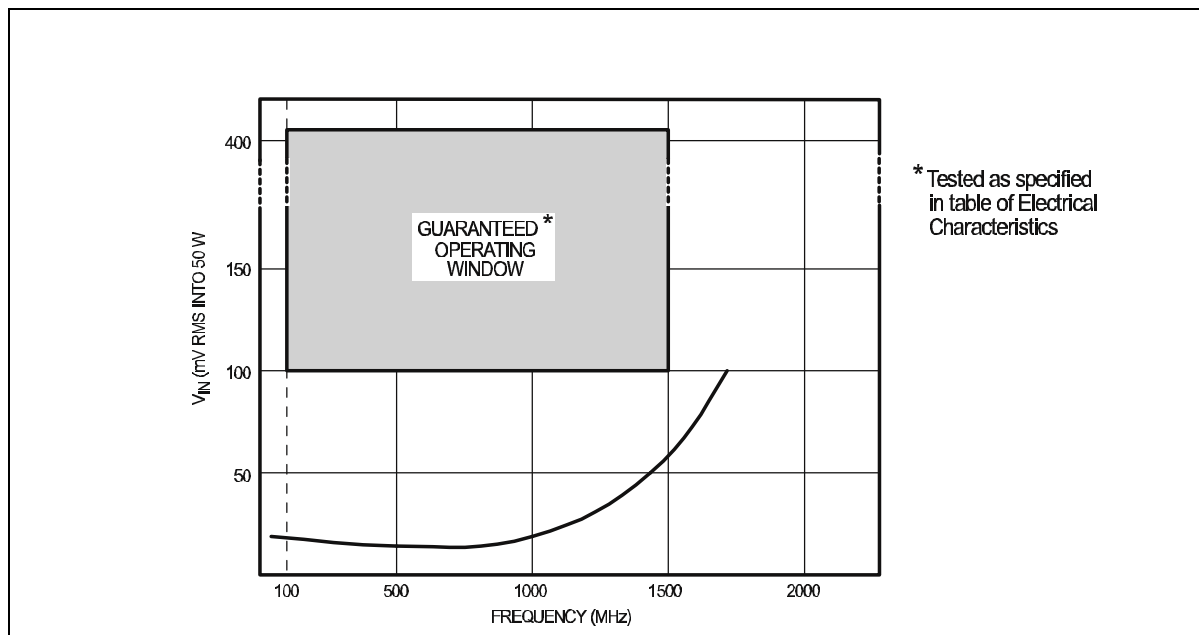


Figure 2 - Pin Connections

**Electrical Characteristics** - Unless otherwise stated, the Electrical Characteristics are guaranteed over specified supply, frequency and temperature range.  
 Supply voltage,  $V_{CC}$  -4.75V to +5.25V. Temperature,  $T_{AMB}$  = -55°C to +125°C (A Grade), -40°C to +85°C (B Grade)

Characteristic	Pin	Value			Units	Conditions
		Min.	Typ.	Max.		
Supply current, $I_{CC}$	1		40	50	mA	
Input sensitivity, 100MHz to 500MHz	2, 3			100	mV	RMS sinewave, measured in 50Ω system. See Figs. 3 and 4.
Input impedance (series equivalent)	2, 3		50	2	Ω pF	See Fig. 5
Output voltage with $f_{IN} = 100\text{MHz}$	6, 7	0.7	1		V p-p	
Output voltage with $f_{IN} = 1500\text{MHz}$	6, 7		0.4		V p-p	



\* Tested as specified in table of Electrical Characteristics

Figure 3 - Typical Input Sensitivity

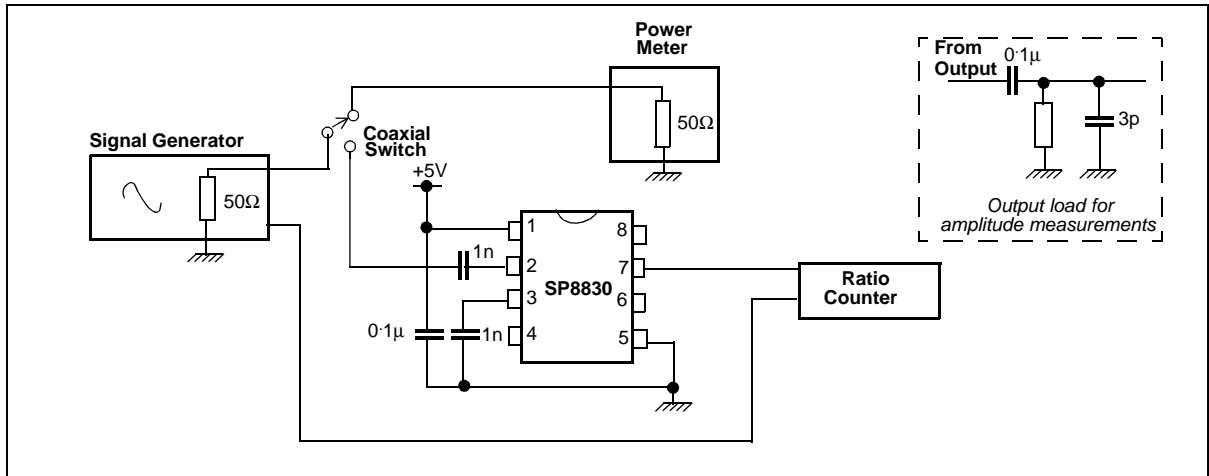


Figure 4 - Test Circuit

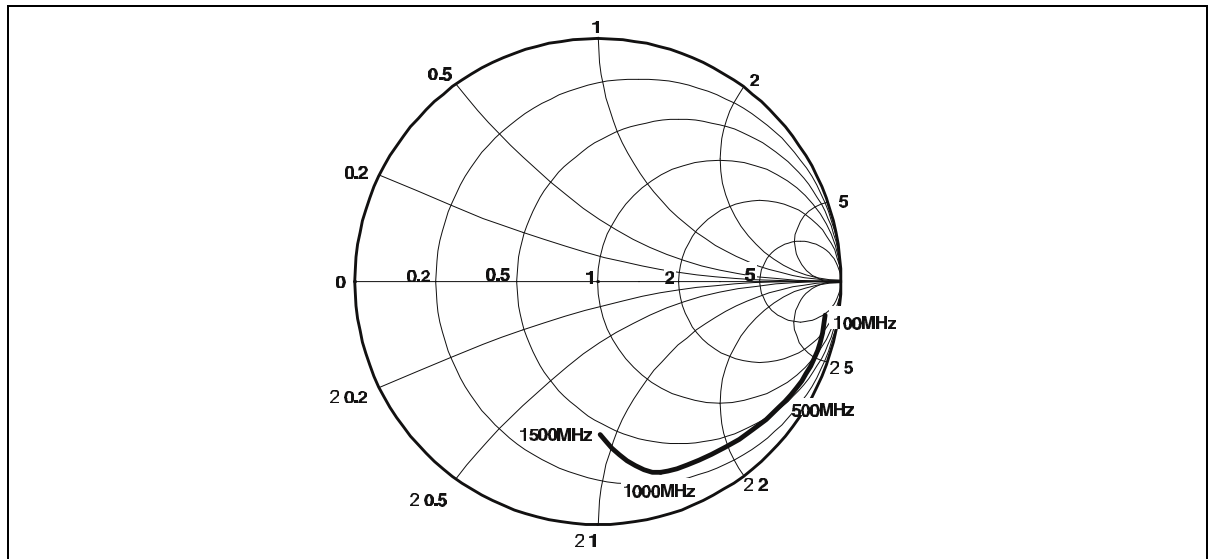
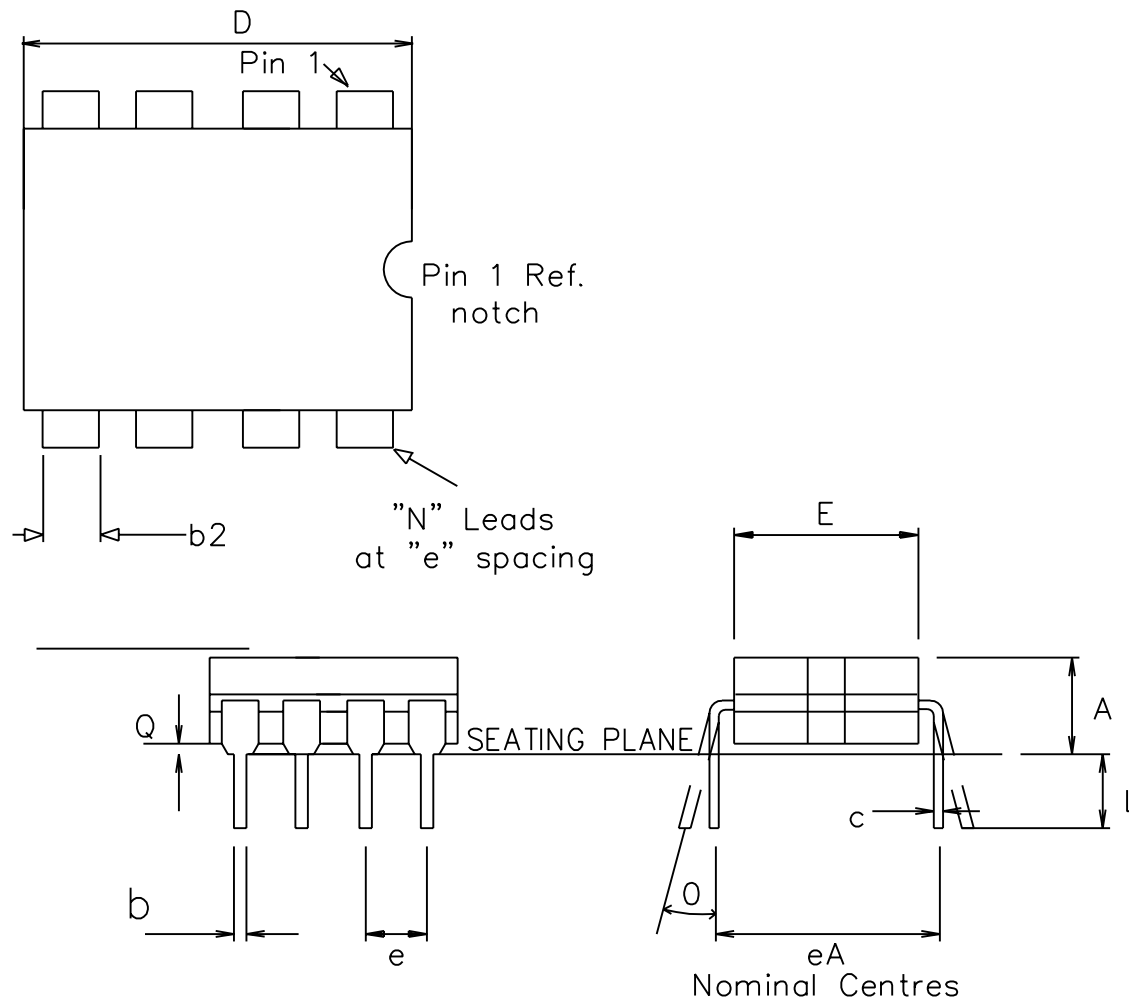


Figure 5 - Typical Input Impedance, Normalised to 50W



Symbol	Altern. Dimensions in millimetres			Control Dimensions in inches		
	MIN	Nominal	MAX	MIN	Nominal	MAX
L	3.18		4.06	0.125		0.160
A			5.08			0.200
Q	0.51			0.020		
E	5.59		7.87	0.220		0.310
eA		7.62			0.300	
c	0.20		0.36	0.008		0.014
D			10.29			0.405
e	2.54 BSC.			0.100 BSC.		
b2	1.14		1.65	0.045		0.065
b	0.36		0.58	0.014		0.023
0			15			15
Pin features						
N				8		
ND				4		
NE				0		
NOTE	RECTANGULAR					

This drawing supersedes 418/ED/39501/001 (Swindon)

© Zarlink Semiconductor 2002 All rights reserved.

ISSUE	1	2		
ACN	201728	212450		
DATE	20Nov96	26Mar02		
APPRD.				



Previous package codes

DG / C

Package Code **DH**

Package Outline for 8 lead DIL  
(Glass Seal Ceramic)

GPD00270



**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 2002, Zarlink Semiconductor Inc. All Rights Reserved.

**TECHNICAL DOCUMENTATION - NOT FOR RESALE**

---