

### Features

- Very High Speed Operation 3.3GHz
- Silicon Technology for low Phase Noise (Typically better than -140dBc/Hz at 10kHz)
- Specified Over the Full Military Temperature Range
- Low Power Dissipation 345mW (typ)
- 5V Single Supply Operation
- High Input Sensitivity
- Very Wide Operating Frequency Range
- Available as DESC SMD 5962-9157001MPA

### Description

The SP8808 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 source for the emitter follower outputs.

### Ordering Information

SP8808/A/DG Military temperature range  
DES9157001/AC/DGAZ (SMD)

### Thermal Characteristics

$\theta_{ja} = 150^{\circ}\text{C/W}$   
 $\theta_{jc} = 50^{\circ}\text{C/W}$

### 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

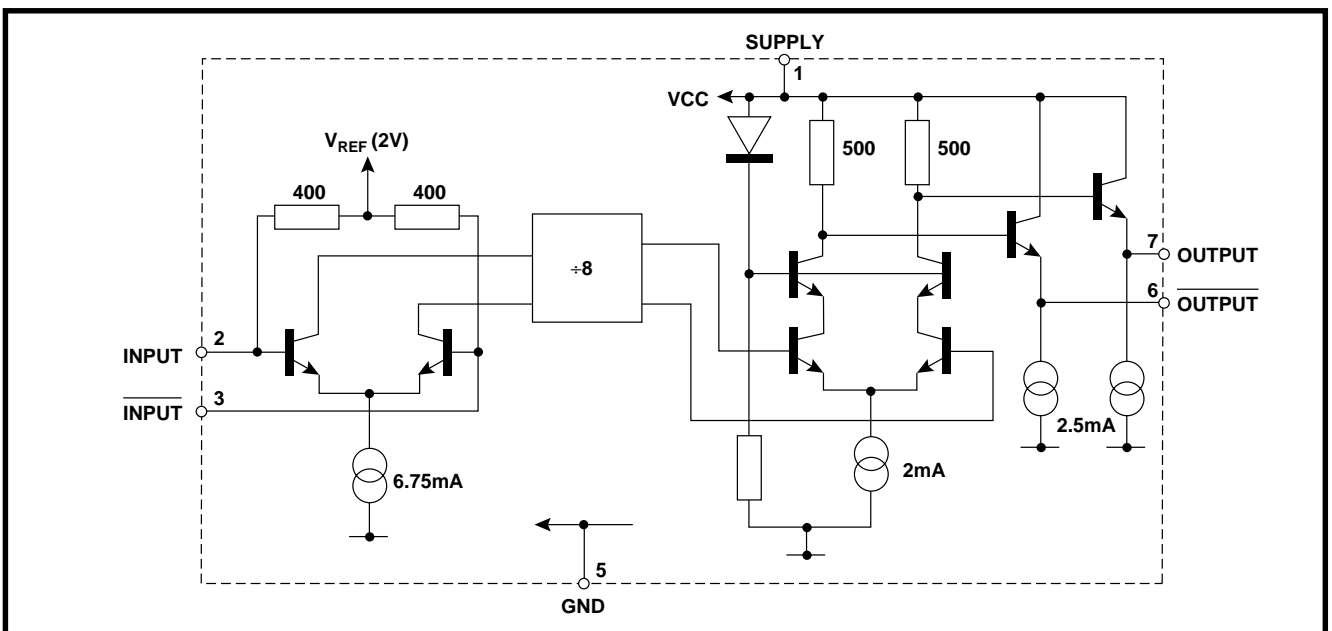


Figure 1 SP8808 Block diagram

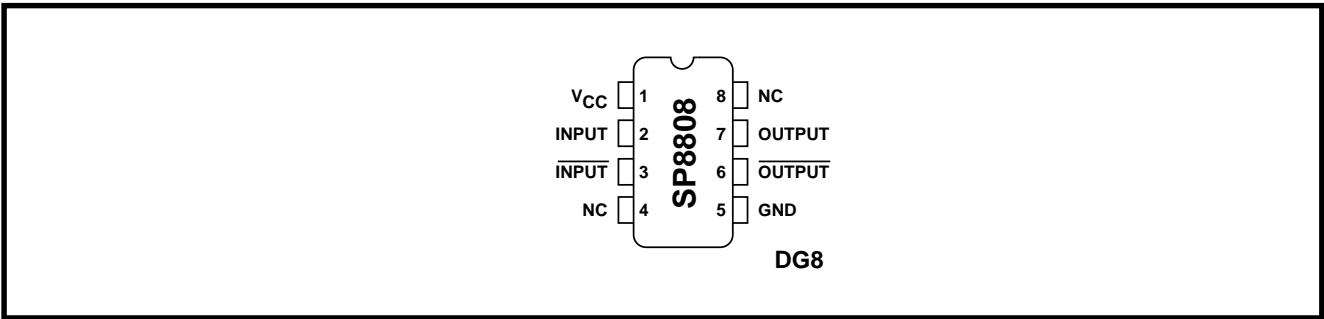


Figure 2 Pin connections

**Electrical Characteristics**

Guaranteed over the temperature range  $T_{amb}$  -55°C to +125°C (see note) and supply voltage range 4.75V to 5.25V. Tested at  $T_{amb}$  = -55°C and +110°C,  $V_{CC}$  = 4.75V and 5.25V.

Characteristic	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current	1		69	85	mA	$V_{CC} = 5V$ RMS sinewave measured in 50 ohm system. See Figs. 3 & 4
Input sensitivity 0.65GHz to 2.8GHz	2, 3			175	mV	
Input sensitivity 3.3GHz	2, 3			400	mV	
Input impedance (series equivalent)	2, 3		50 2		$\Omega$ pF	
Output Voltage with $f_{in} = 1000MHz$	6, 7	0.8	1		Vp-p	$V_{CC} = 5V$ $V_{CC} = 5V$ load as Fig. 4
Output Voltage with $f_{in} = 3GHz$	6, 7		0.4		Vp-p	

NOTE: Devices must be used with a suitable heatsink to maintain chip temperature below 175°C when operating at  $T_{amb} > 110^\circ C$ .

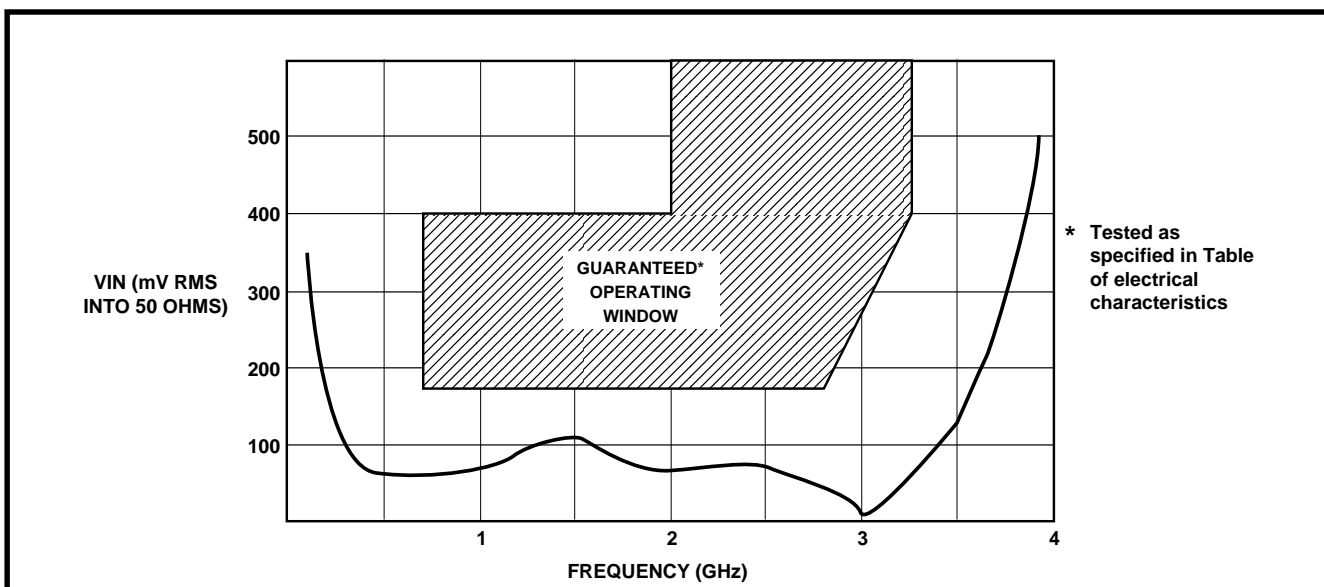


Figure 3 Typical input sensitivity

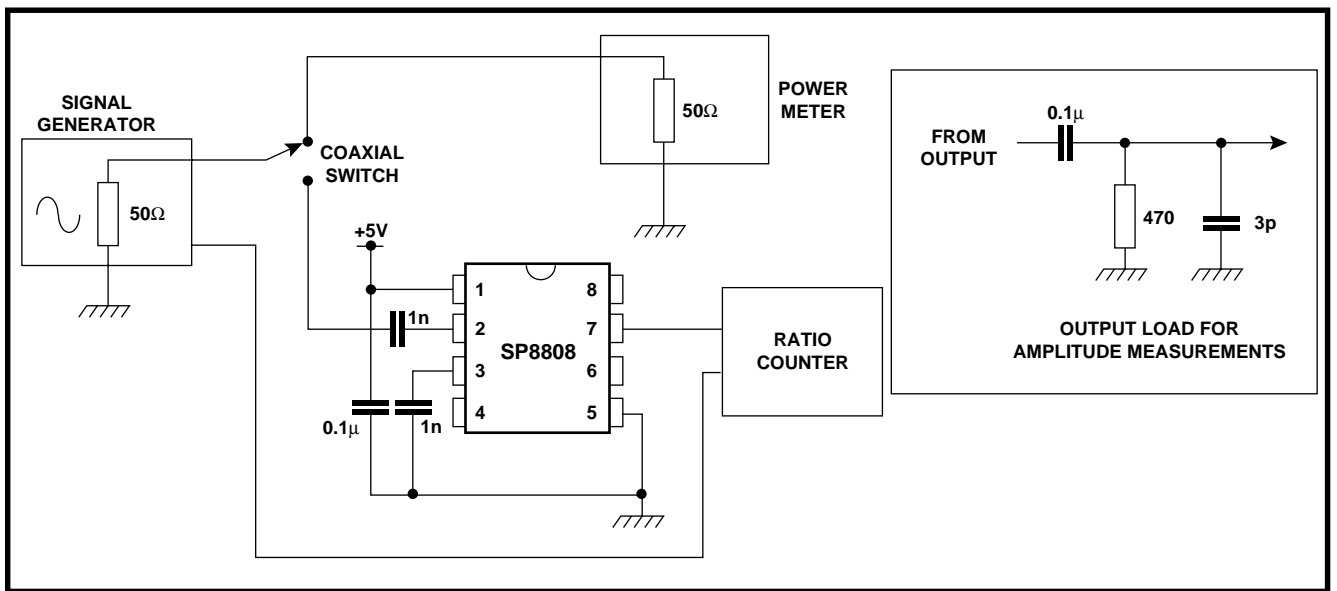


Figure 4 Test circuit

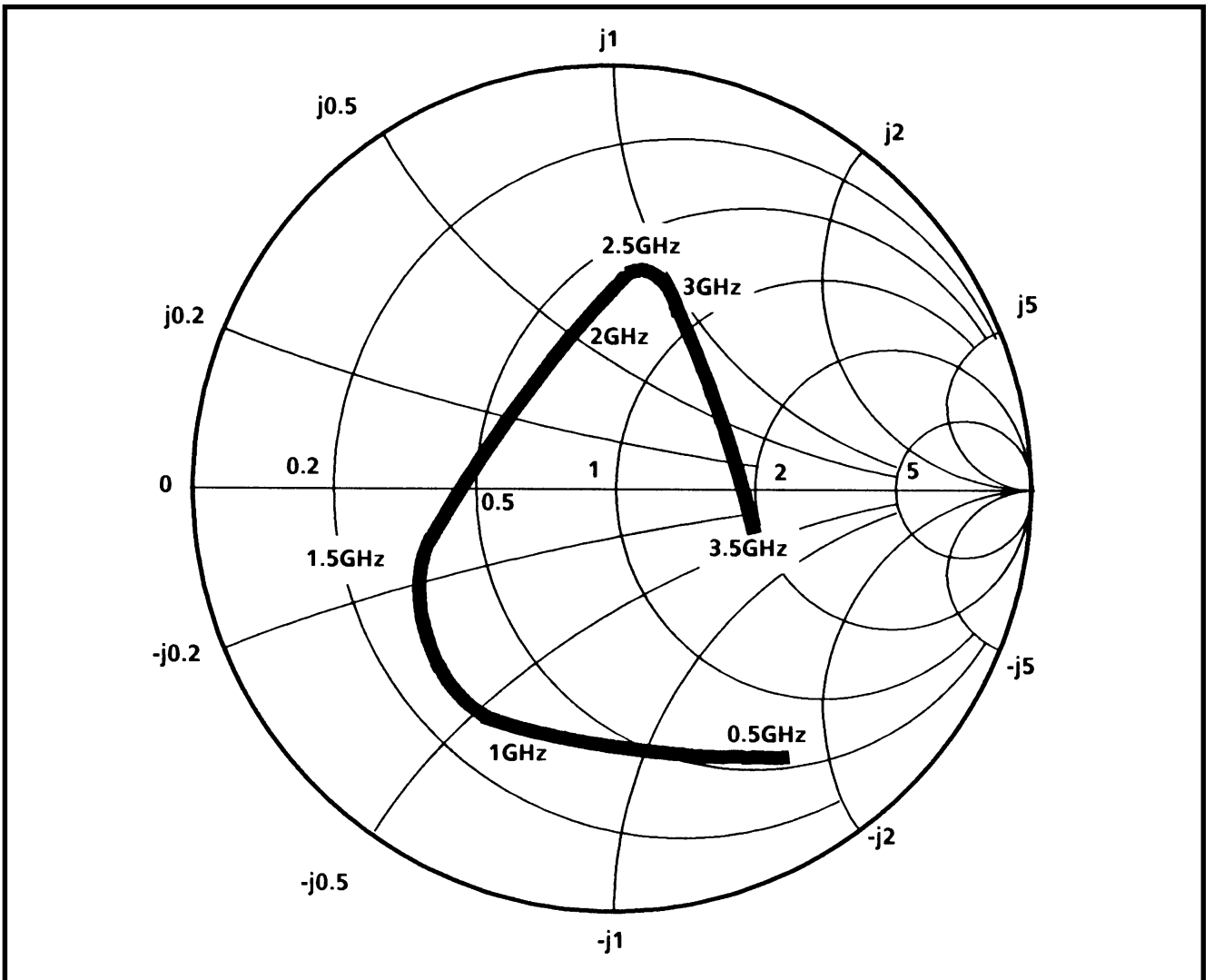
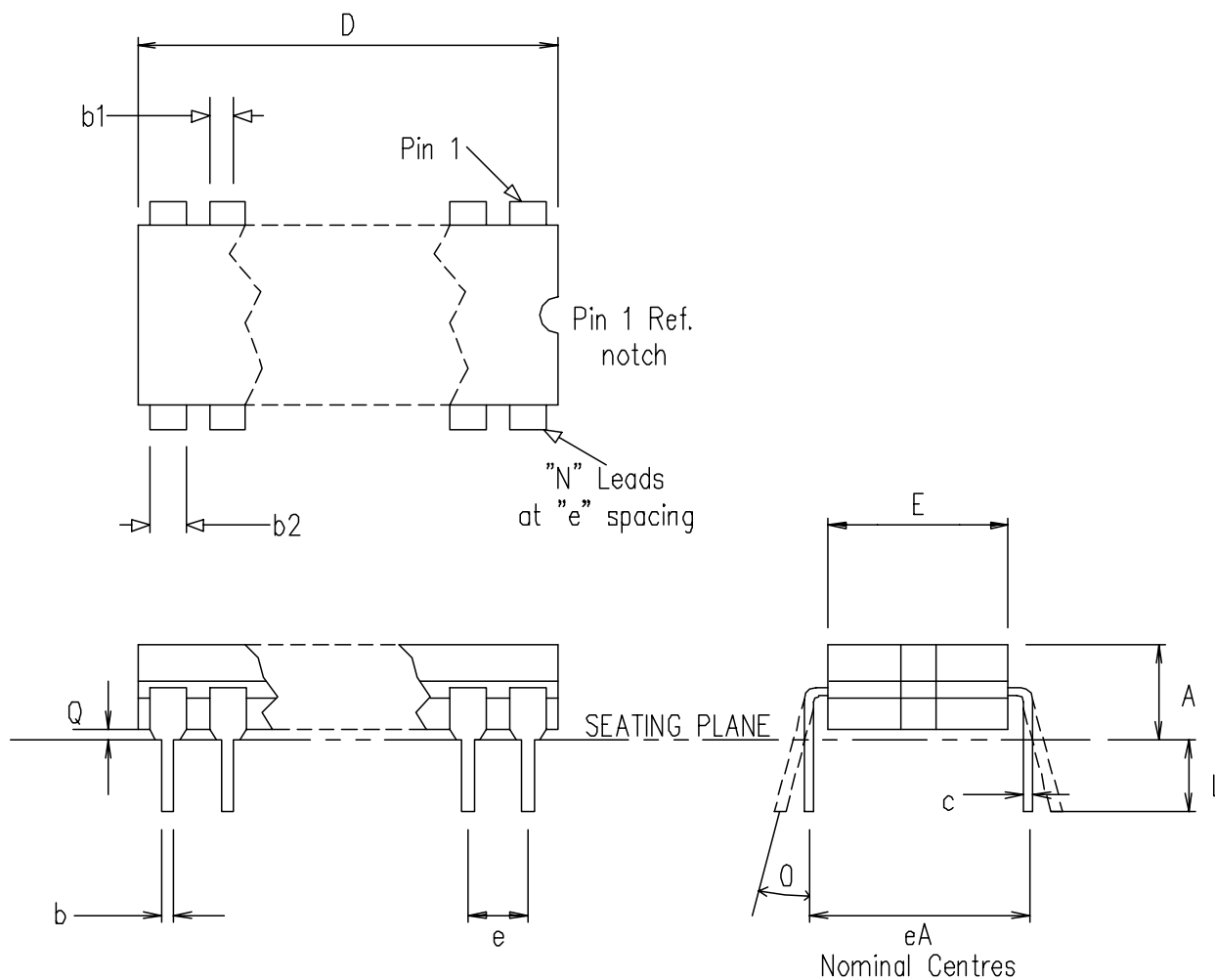


Figure 5 Typical input impedance



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.		
b1	1.14		1.65	0.045		0.065
b	0.36		0.58	0.014		0.023
b2	0.73		1.12	0.029		0.044
Q			15*			15*
Pin features						
N	8					
ND	4					
NE	0					
NOTE	RECTANGULAR					

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

© Mitel

ORIGINATING SITE: SWINDON

ISSUE	1				
ACN	201728				
DATE	20.NOV.96				
APPROVED					

MITEL SEMICONDUCTOR

Title: Outline drawing for  
8 Lead Cerdip (DG)

Drawing Number  
GPD00270



<http://www.mitelsemi.com>

**World Headquarters - Canada**

Tel: +1 (613) 592 2122  
Fax: +1 (613) 592 6909

**North America**

Tel: +1 (770) 486 0194  
Fax: +1 (770) 631 8213

**Asia/Pacific**

Tel: +65 333 6193  
Fax: +65 333 6192

**Europe, Middle East,  
and Africa (EMEA)**

Tel: +44 (0) 1793 518528  
Fax: +44 (0) 1793 518581

Information relating to products and services furnished herein by Mitel Corporation or its subsidiaries (collectively "Mitel") is believed to be reliable. However, Mitel 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 Mitel or licensed from third parties by Mitel, whatsoever. Purchasers of products are also hereby notified that the use of product in certain ways or in combination with Mitel, or non-Mitel furnished goods or services may infringe patents or other intellectual property rights owned by Mitel.

This publication is issued to provide information only and (unless agreed by Mitel 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 Mitel 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 Mitel's conditions of sale which are available on request.

M Mitel (design) and ST-BUS are registered trademarks of MITEL Corporation  
Mitel Semiconductor is an ISO 9001 Registered Company  
Copyright 1999 MITEL Corporation  
All Rights Reserved  
Printed in CANADA

TECHNICAL DOCUMENTATION - NOT FOR RESALE