

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 370mW (typ)
- 5V Single Supply Operation
- High Input Sensitivity
- Very Wide Operating Frequency Range
- Available as DESC SMD 5962-9056701MPA

Description

The SP8804 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

SP8804/A/DG Military temperature range
DES9056701/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

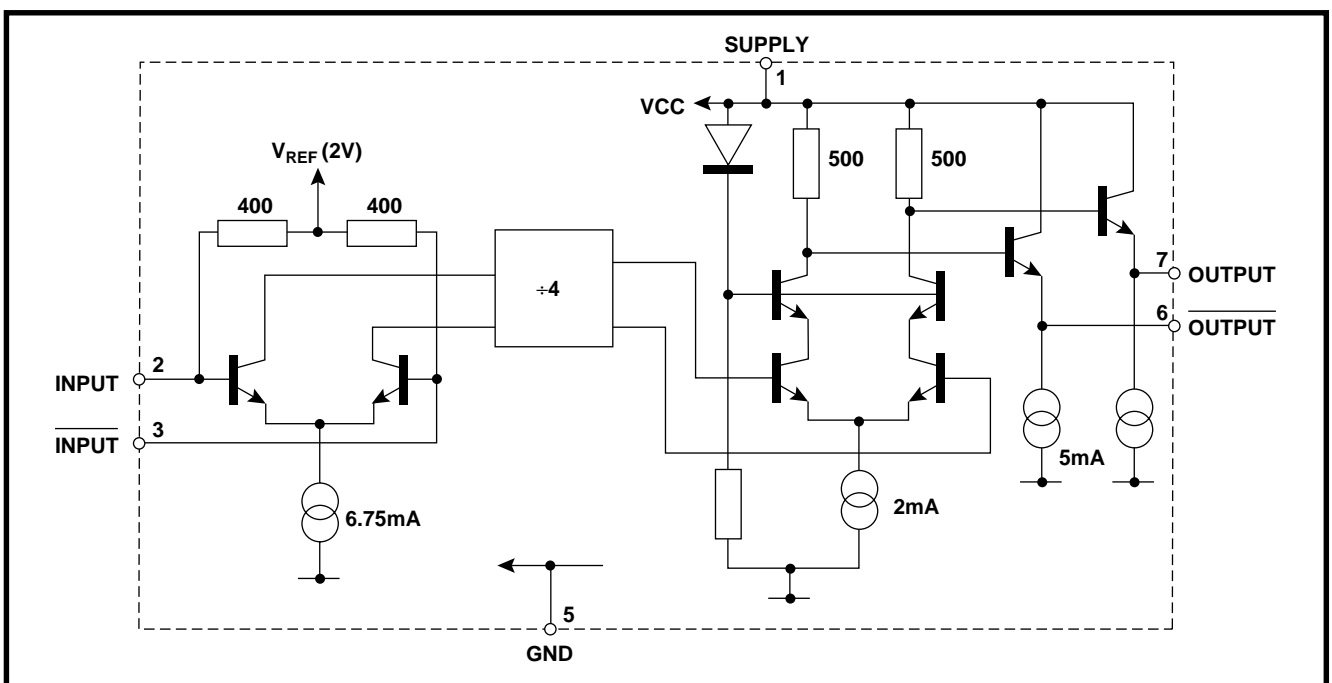


Figure 2 SP8804 Block diagram

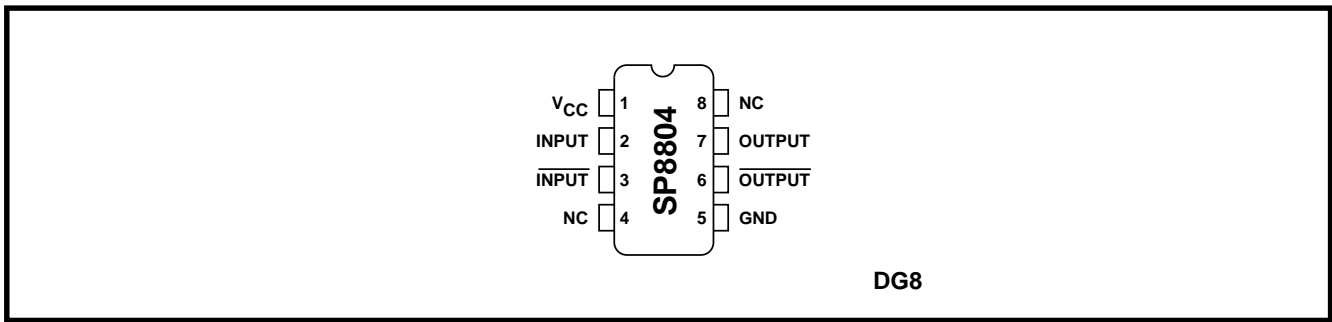


Figure 1 Pin connections

Electrical Characteristics

Guaranteed over the temperature range T_{amb} -55°C to $+125^{\circ}\text{C}$ (see note) and supply voltage range 4.75V to 5.25V. Tested at $T_{amb} = -55^{\circ}\text{C}$ and $+105^{\circ}\text{C}$, $V_{CC} = 4.75\text{V}$ and 5.25V .

Characteristic	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current	1		74	90	mA	$V_{CC} = 5\text{V}$
Input sensitivity 0.65GHz to 2.8GHz	2, 3			175	mV	RMS sinewave measured in 50 ohm system.
3.3GHz				400	mV	See Figs. 3 & 4
Input impedance (series equivalent)	2, 3		50		Ω	
			2		pF	
Output Voltage with $f_{in} = 1000\text{MHz}$	6, 7	0.8	1		Vp-p	$V_{CC} = 5\text{V}$
Output Voltage with $f_{in} = 3\text{GHz}$	6, 7		0.25		Vp-p	$V_{CC} = 5\text{V}$ load as Fig. 4

NOTE: Devices must be used with a suitable heatsink to maintain chip temperature below 175°C when operating at $T_{amb} > 105^{\circ}\text{C}$.

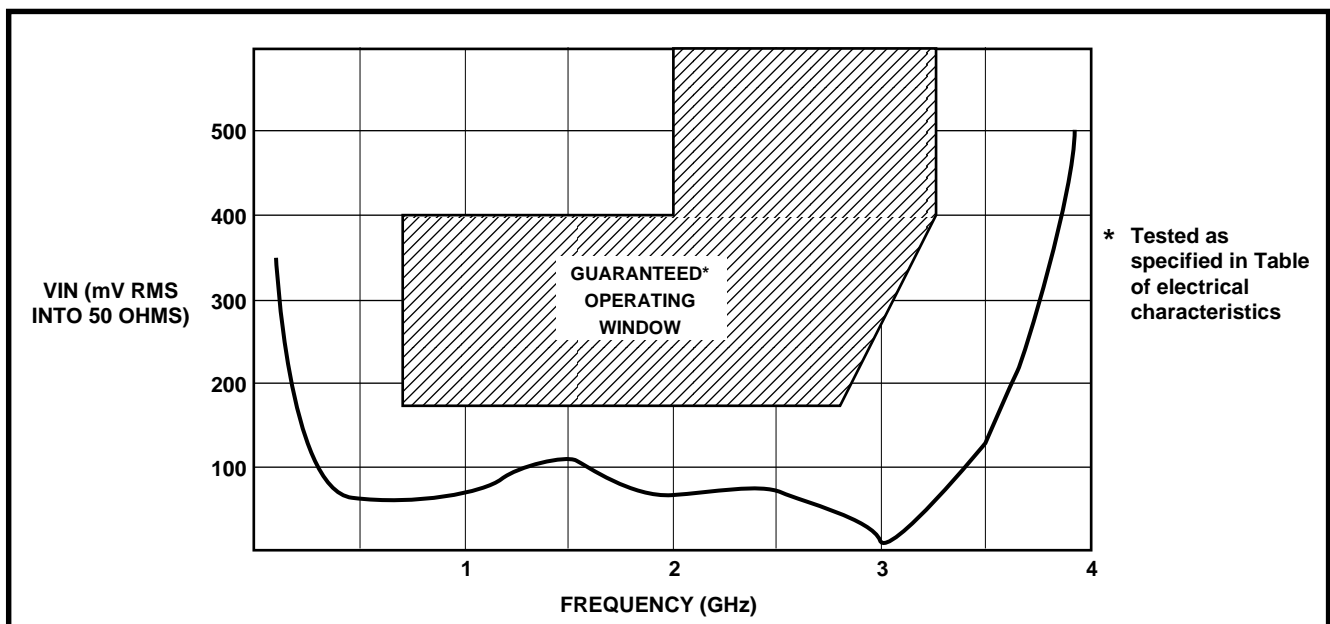


Figure 3 Typical input sensitivity

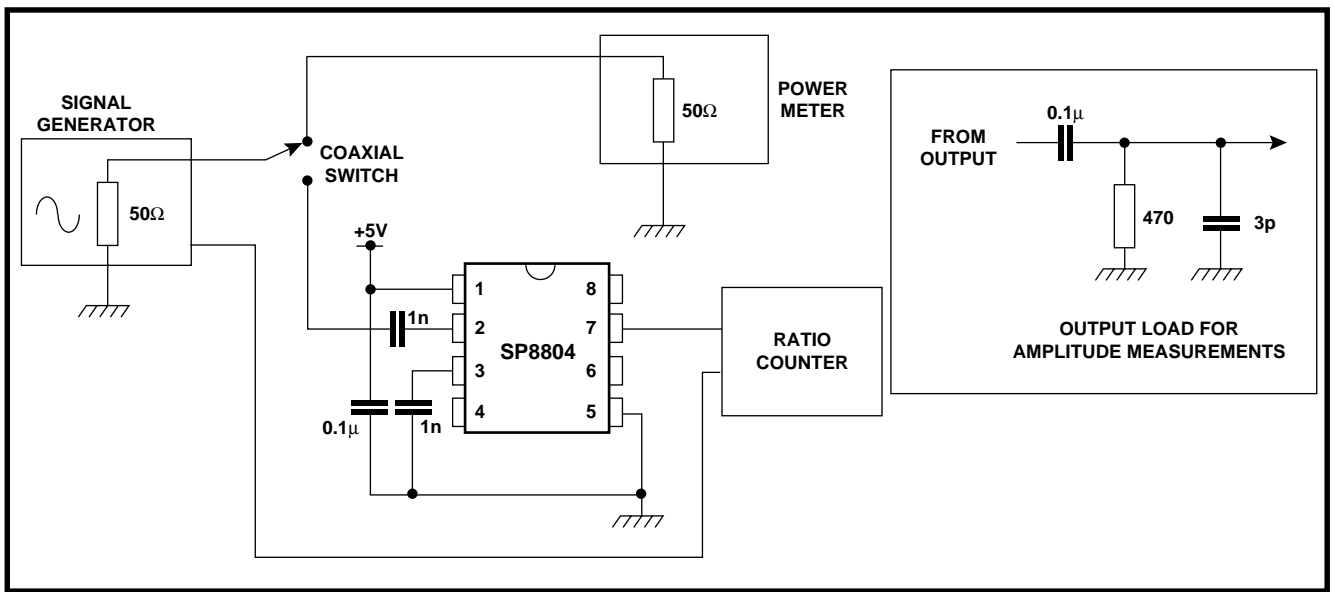


Figure 4 Test circuit

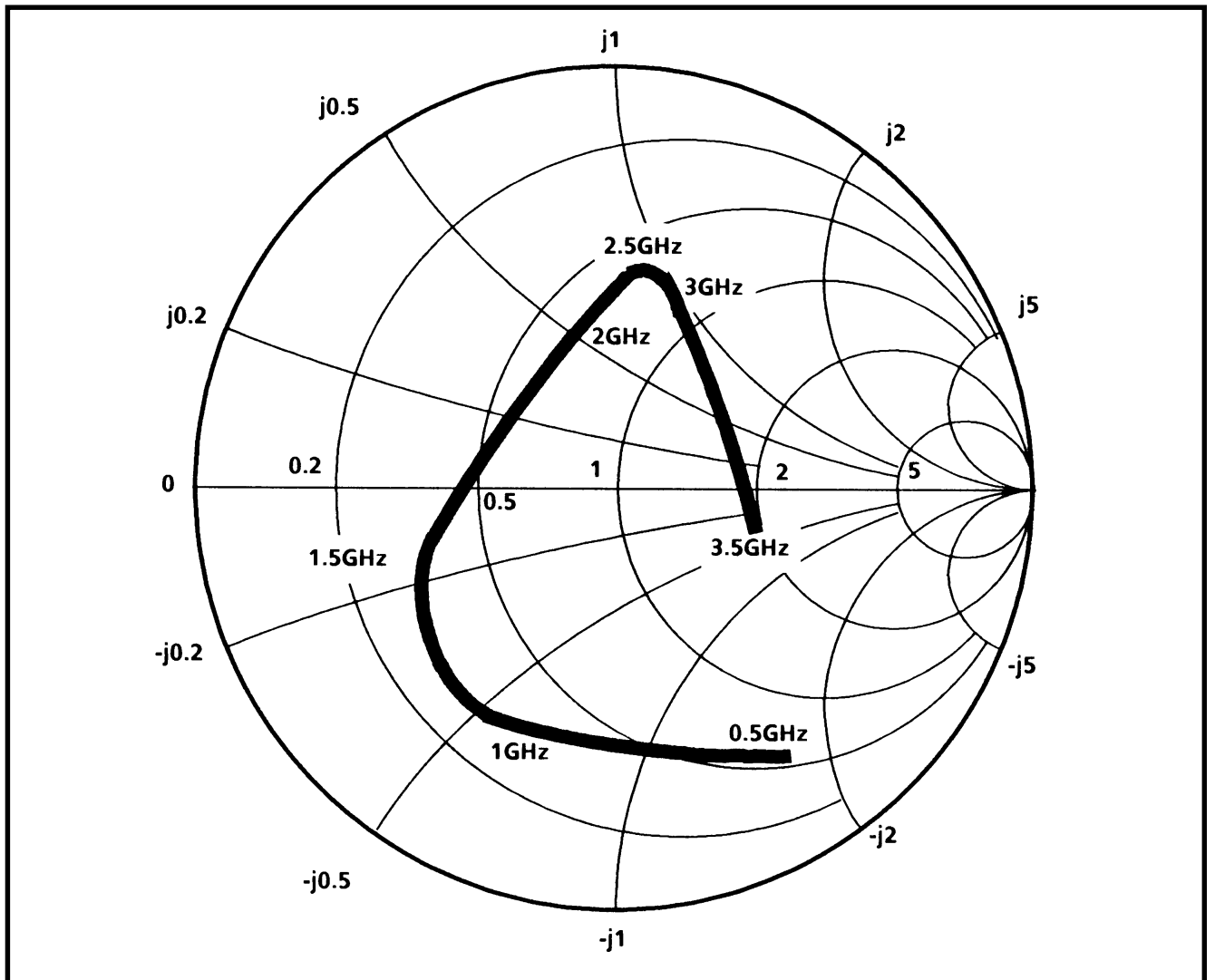


Figure 5 Typical input impedance



<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 3213

Asia/Pacific

Tel: +65 333 6193

Fax: +65 333 6192

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

Tel: +44 (0) 1793 518528

Fax: +44 (0) 518581

South America

Tel/Fax: +55 (48) 225 2061

Preliminary and Advance Data: Some data sheets carry the designation "Preliminary" or "Advance". Preliminary Information represents the design objective for a device type in development and may be revised without notice before the device reaches production. Advance Information is intended for design guidance purposes and refers to a device type in early production where device characterisation is ongoing and information is still subject to change without notice. Current information on the status of Preliminary or Advance programs may be obtained from Mitel Sales Offices, Representatives or Distributors.

Information relating to products and circuits ("Product") furnished herein by Mitel Corporation or its subsidiaries ("Mitel") is believed to be reliable. However, Mitel assumes no liability for errors that may appear in this document, or for liability otherwise arising from the application or use of any such information or Product 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 the purchase of Product conveys any license, either expressed 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 intellectual property rights owned by Mitel. The Products, their specifications and the information appearing in the document are subject to change by Mitel without notice.

M Mitel (design) and ST-BUS are registered trademarks of MITEL Corporation
Mitel Semiconductor is an ISO 9001 Registered Company
Copyright 1998 MITEL Corporation

All Rights Reserved
Printed in 1998

Publication No. DS2112 Issue No 7.2 June 1999 TECHNICAL DOCUMENTATION – NOT FOR RESALE.