MITEL
SEMICONDUCTOR

SP8802

3.3GHz ÷ 2 fixed Modulus Divider

Advance Information

DS2111 Issue 7.2 June 1999

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 420mW (typ)
- 5V Single Supply Operation
- High Input Sensitivity
- Very Wide Operating Frequency Range
- Available as DESC SMD 5962-9066101MPA

Description

The SP8802 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

SP8802/A/DG Military temperature range
DES9066101/AC/DGAZ (SMD)

Thermal Characteristics

θja = 150°C/W
θjc = 50°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

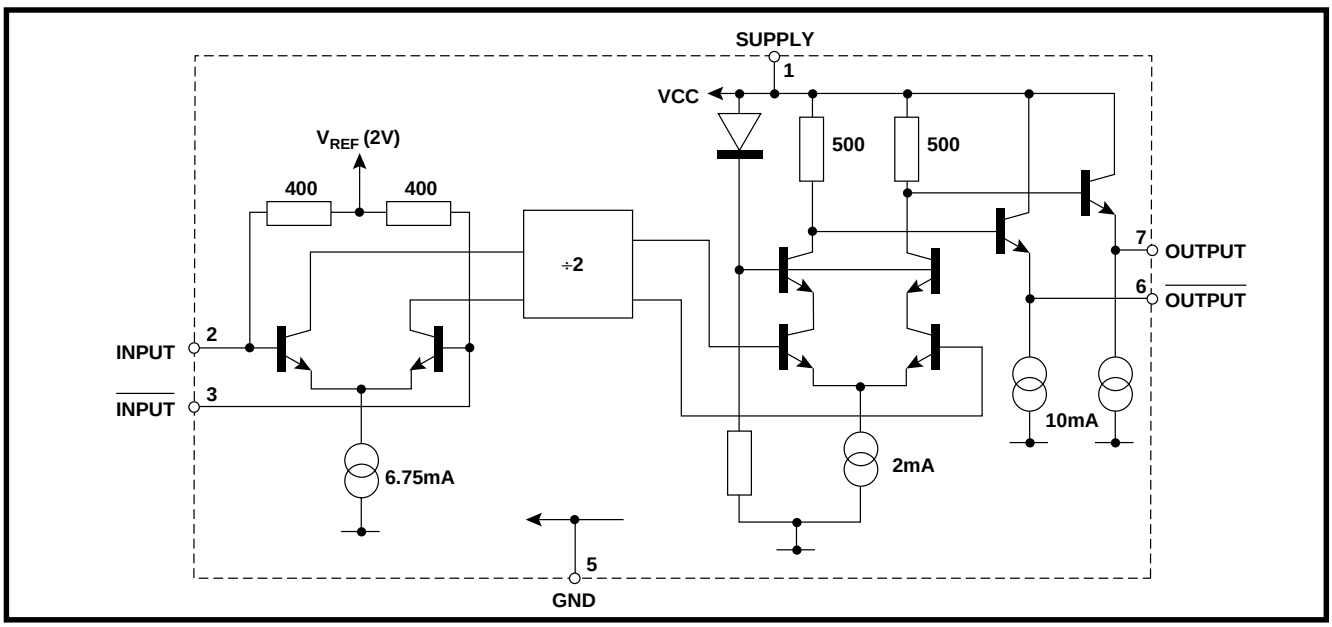
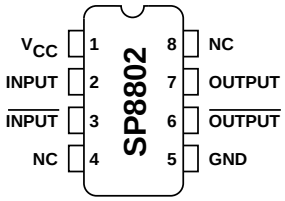


Figure 1 SP8802 Block diagram



DG8

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 +100°C, V_{CC} = 4.75V and 5.25V.

Characteristic	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current	1		84	100	mA	V_{CC} = 5V
Input sensitivity 0.65GHz to 2.8GHz	2, 3			175	mV	RMS sinewave
3.3GHz				400	mV	measured in 50 ohm system.
Input impedance	2, 3		50		Ω	See Figs. 3 & 4
(series equivalent)			2		pF	
Output Voltage with f_{in} = 1000MHz	6, 7	0.8	1		Vp-p	V_{CC} = 5V
Output Voltage with f_{in} = 3GHz	6, 7		0.35		Vp-p	V_{CC} = 5V 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}>100°C.

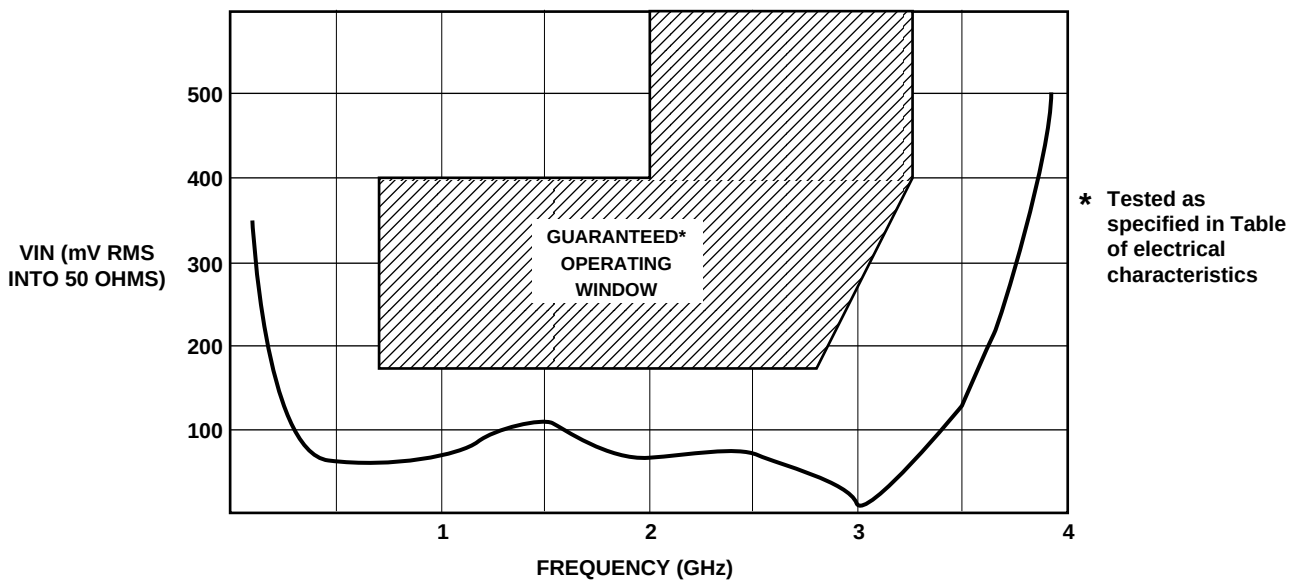


Figure 3 Typical input sensitivity

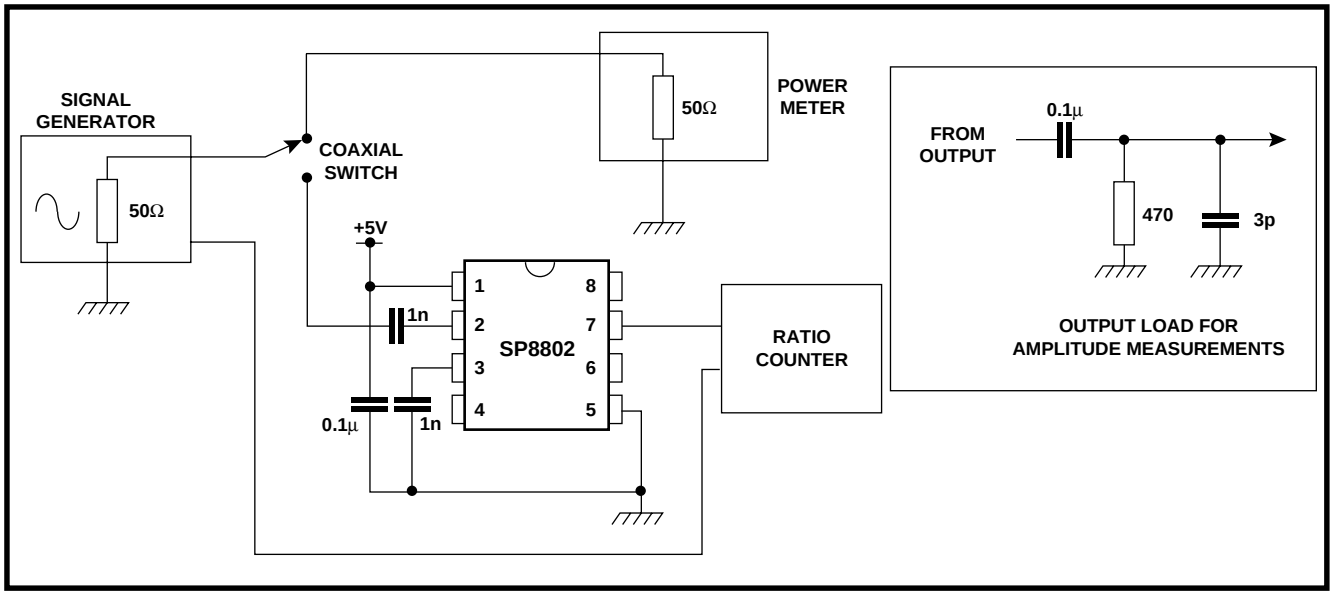


Figure 4 Test circuit

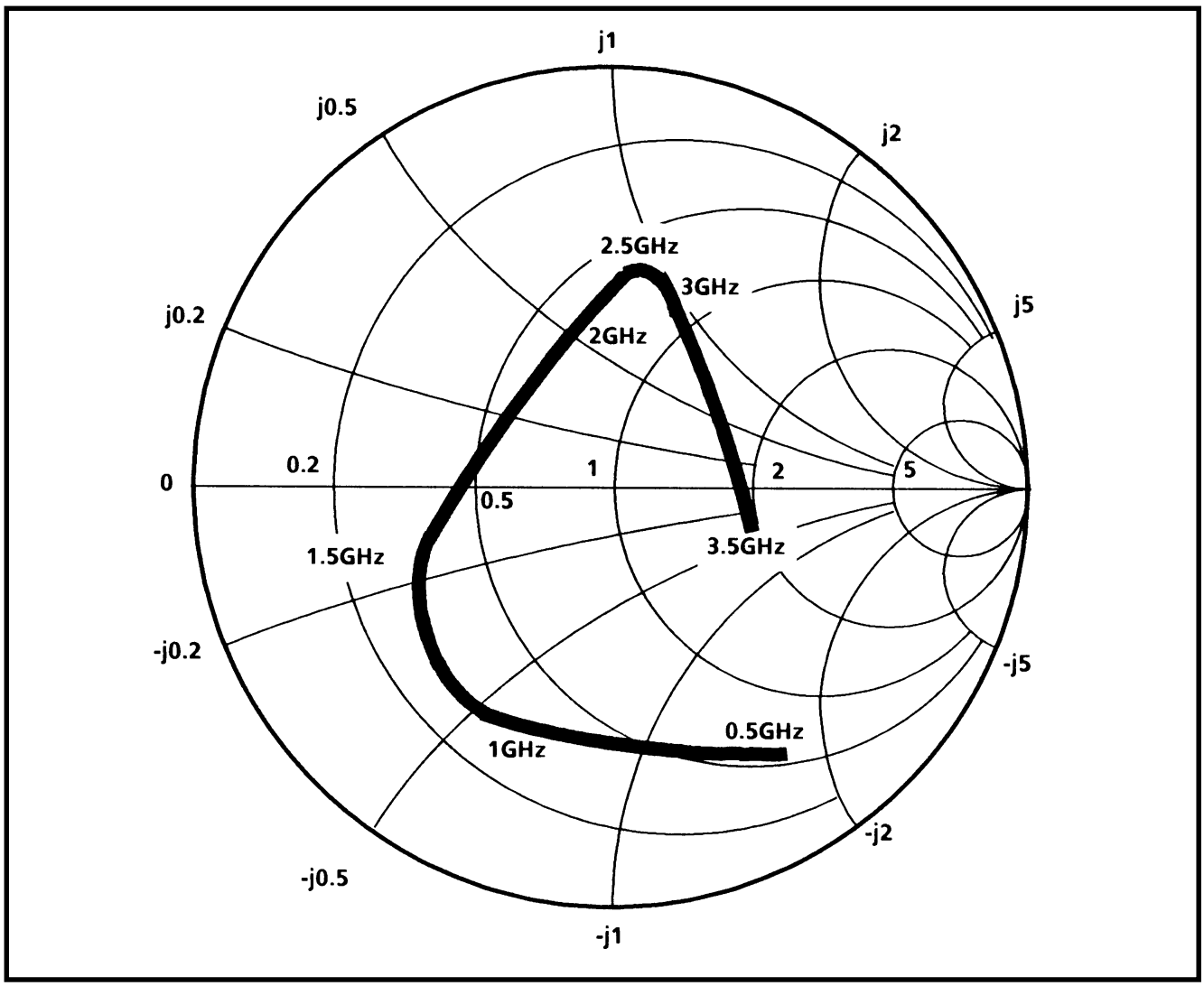
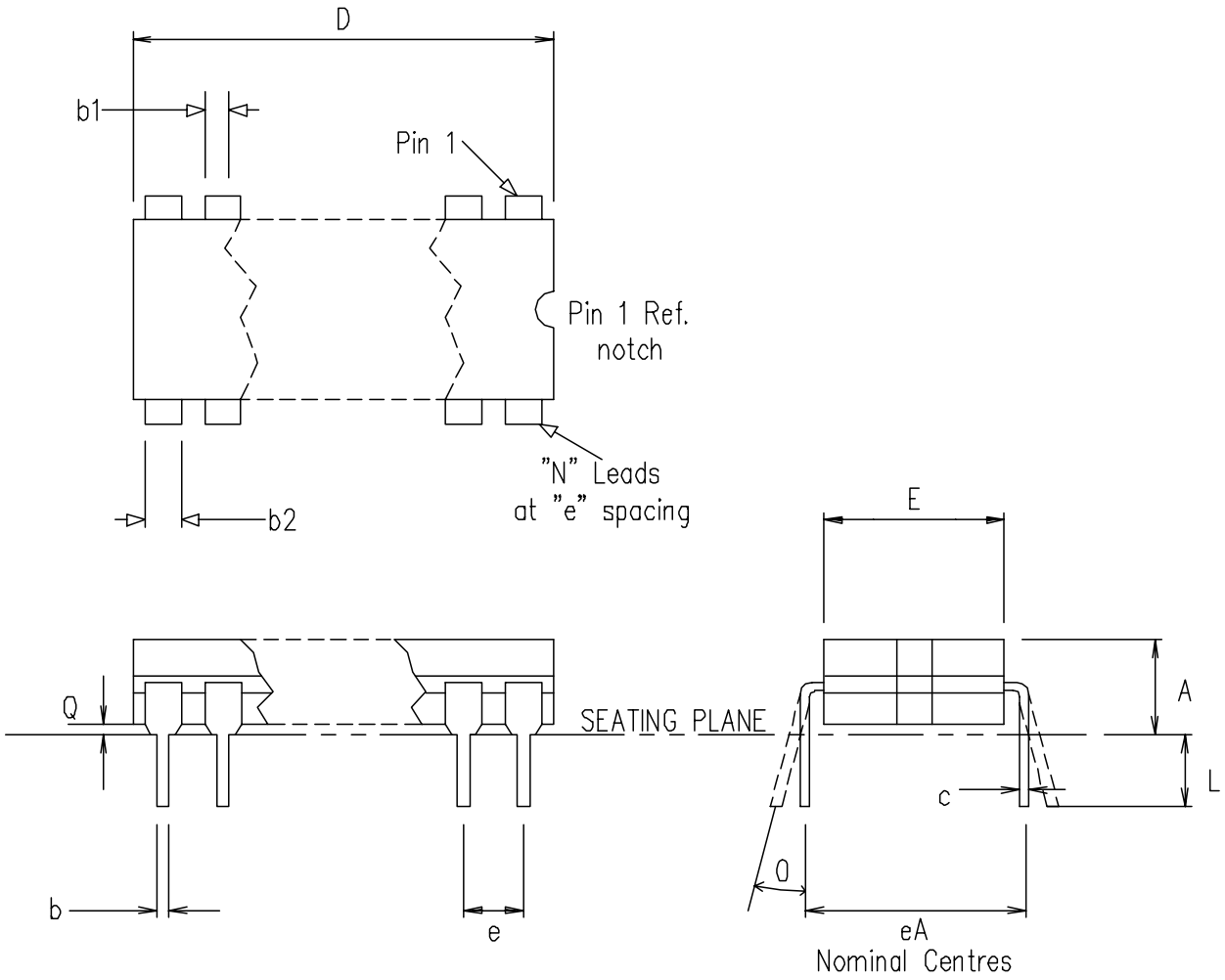


Figure 5 Typical input impedance



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
0			15°				15°
	Pin features						
N	8						
ND	4						
NE	0						
NOTE	RECTANGULAR						

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

ORIGINATING SITE: SWINDON

ISSUE	1					MITEL SEMICONDUCTOR
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APPROVED						

Title: Outline drawing for 8 Lead Cerdip (DG)

Drawing Number
GPD00270

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