

**Features**

- High Speed Operation 1.5GHz
- Silicon Technology for Low Phase Noise (Typically Better Than  $-140\text{dBc} / \text{Hz}$  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

**Ordering Information**  
**SP8830 A DG**  
**SP8830 B DG**  
**DES9157201/AC/DGAZ (SMD)**

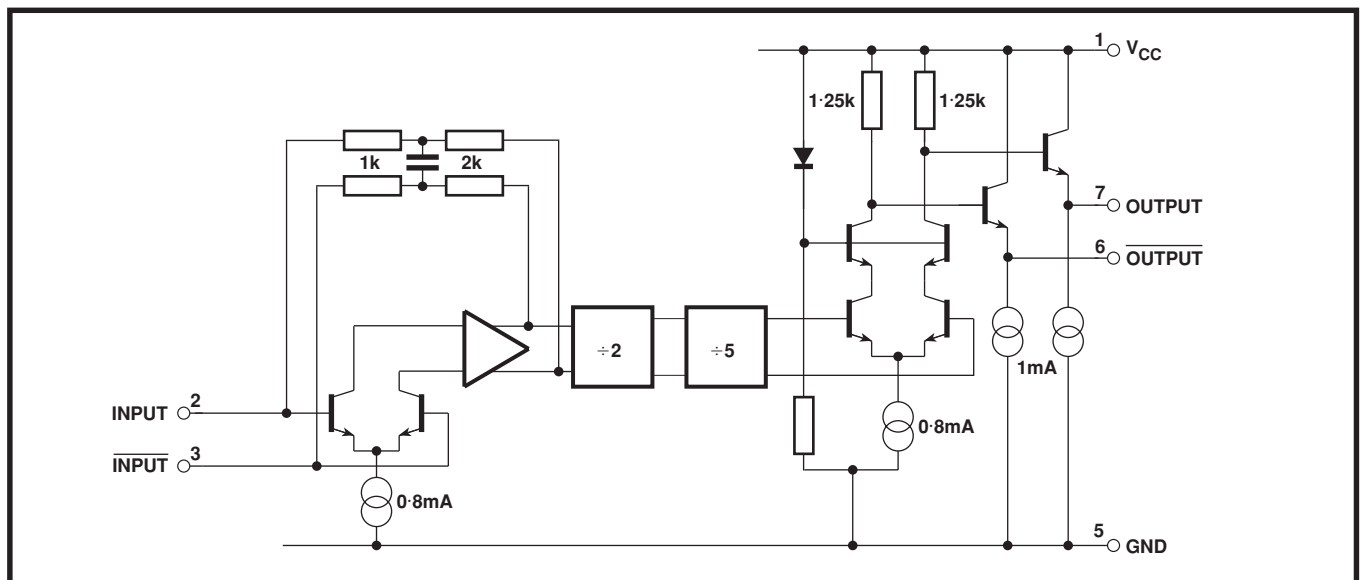
- Temperature Range:  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (A Grade)  
 $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  (B Grade)

**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	$65^{\circ}\text{C}$ to $+150^{\circ}\text{C}$
Junction temperature	$+175^{\circ}\text{C}$



**Figure 1 SP8830 block diagram**

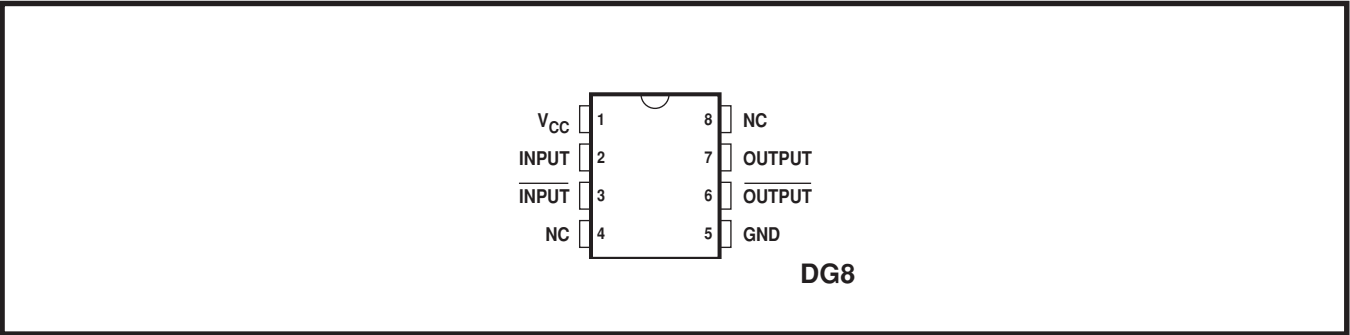


Figure 2 Pin connections

**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	

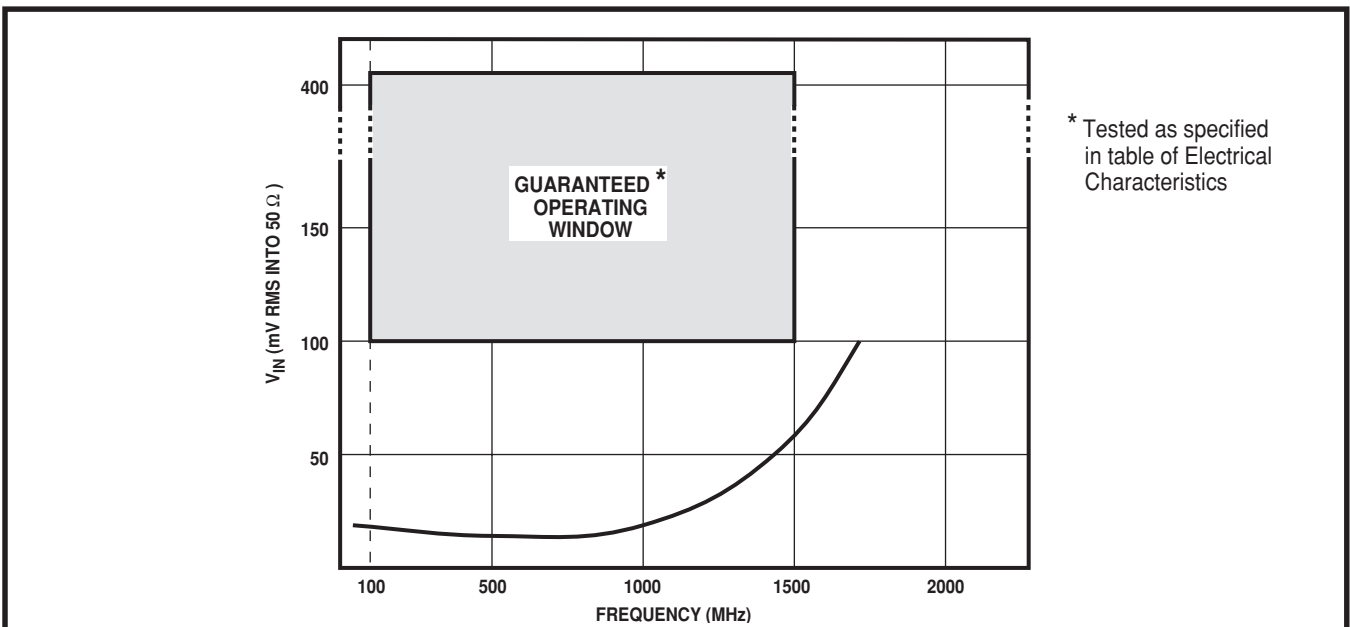


Figure 3 Typical input sensitivity

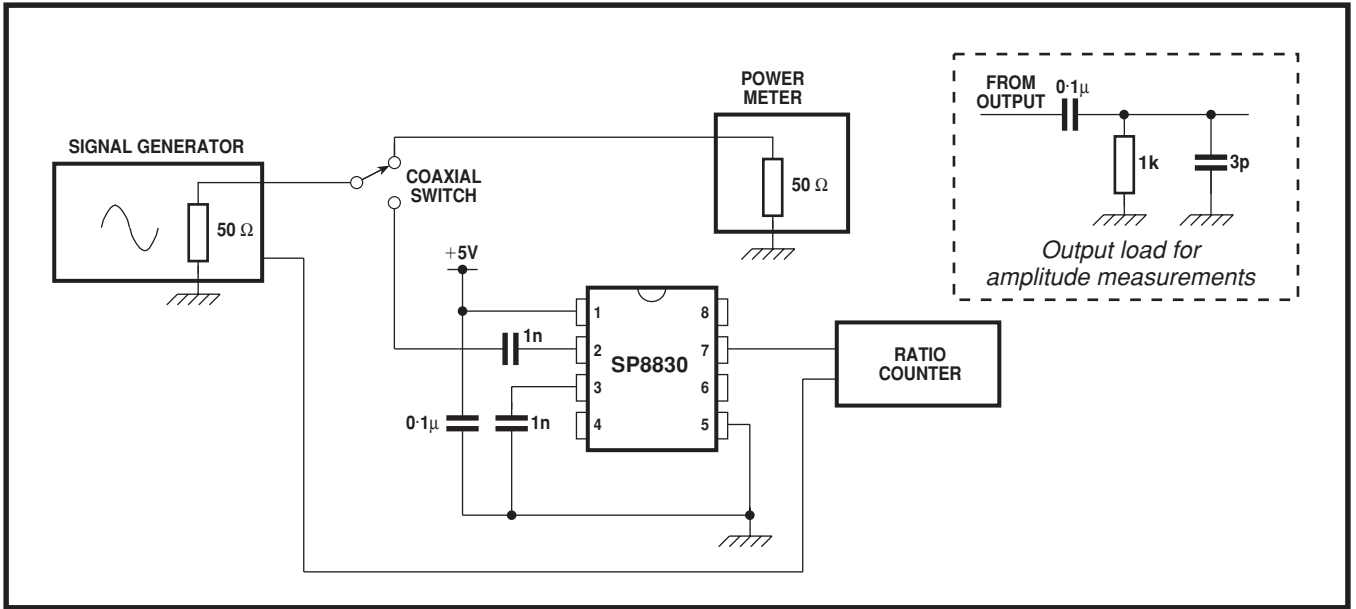


Figure 4 Test circuit

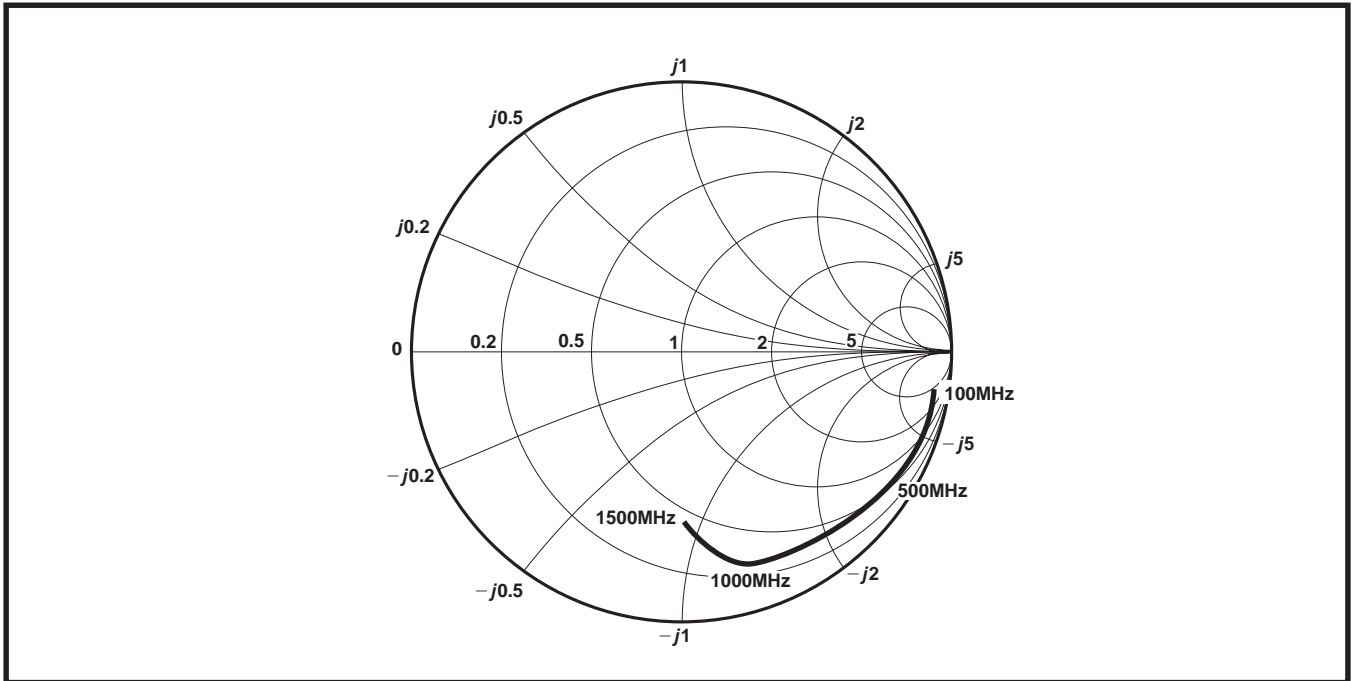
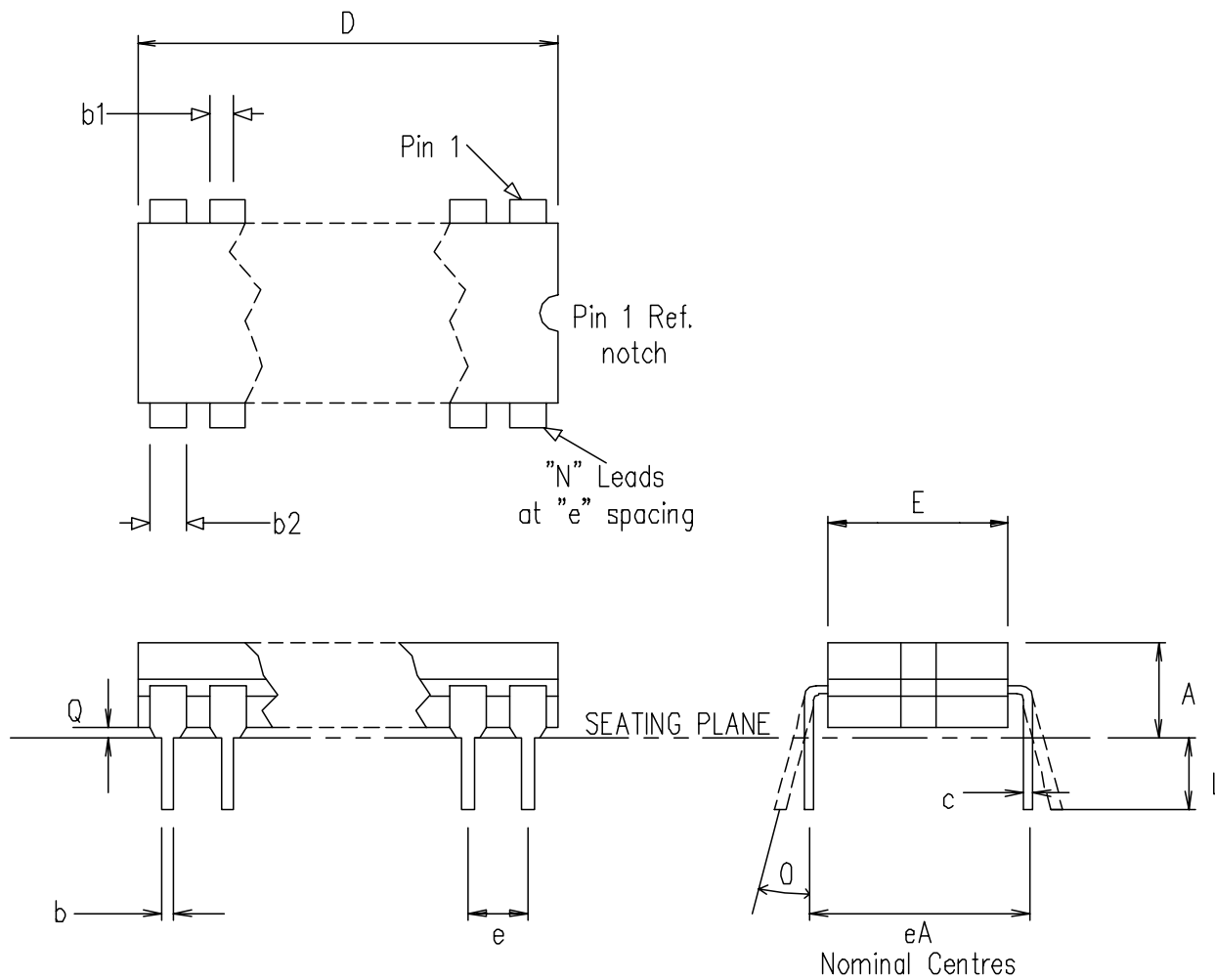


Figure 5 Typical input impedance, normalised to 50Ω



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

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

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ORIGINATING SITE: SWINDON

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MITEL SEMICONDUCTOR

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