MITEL
SEMICONDUCTOR

SP8830
1.5GHz ÷ 10 Prescaler
Advance Information

DS3690 Issue 3.3 June 1999

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

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

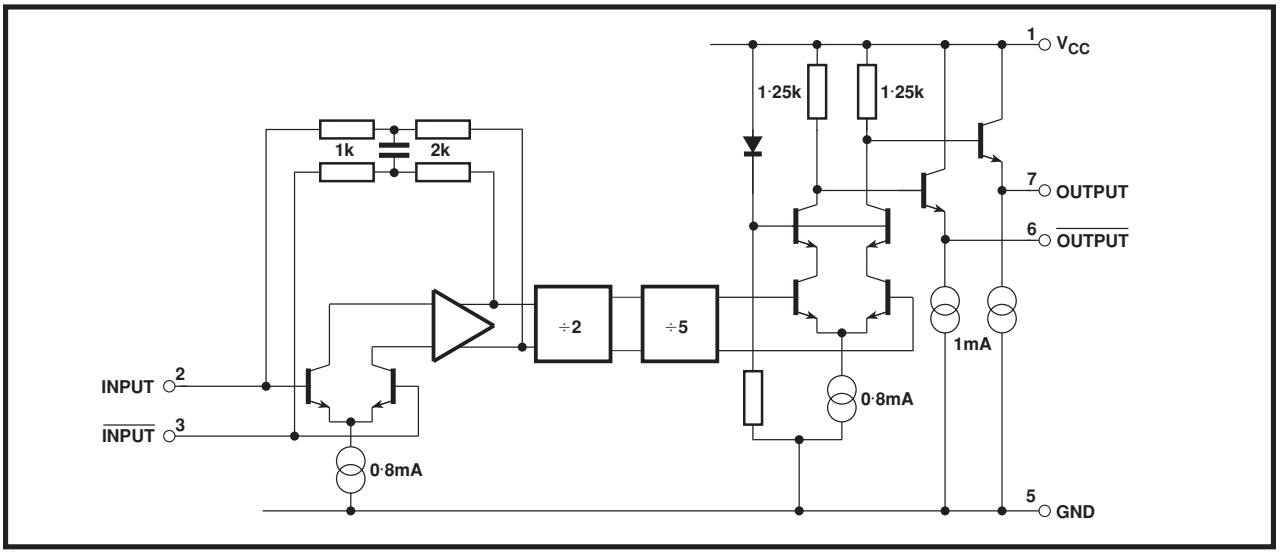


Figure 1 SP8830 block diagram

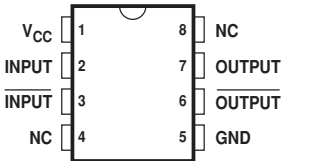


Figure 2 Pin connections

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 1500MHz	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} = 100MHz	6, 7	0·7	1		V p-p	
Output voltage with f_{IN} = 1500MHz	6, 7		0·4		V p-p	

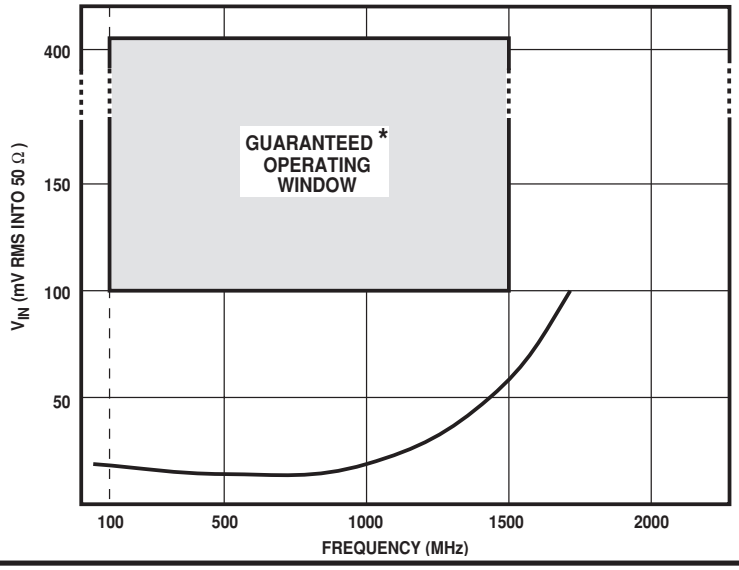


Figure 3 Typical input sensitivity

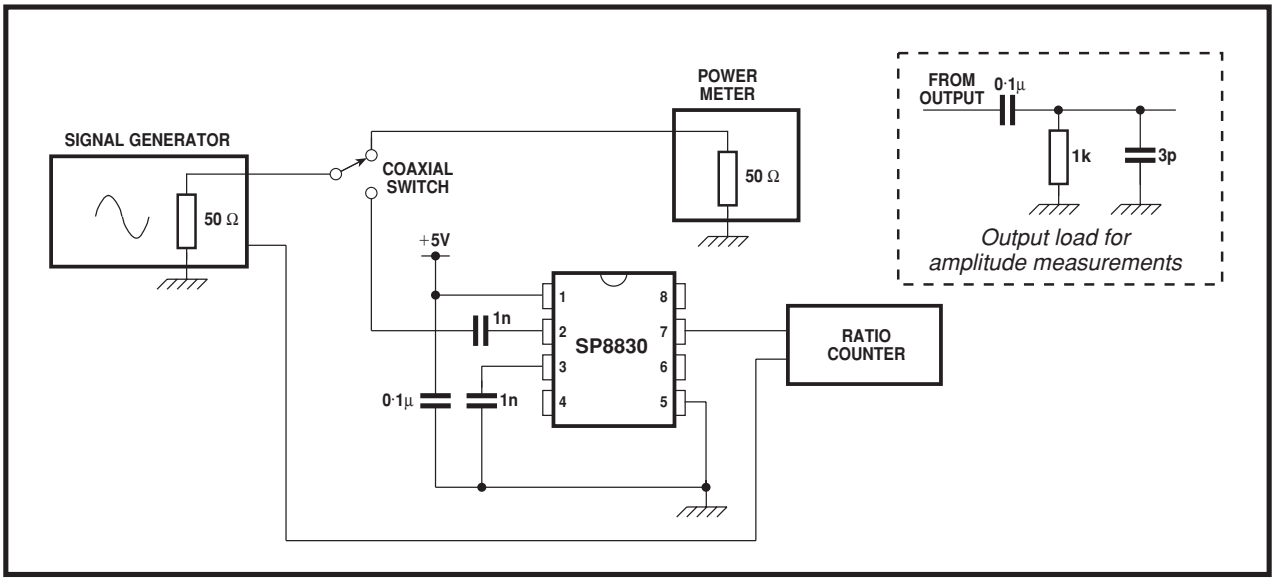


Figure 4 Test circuit

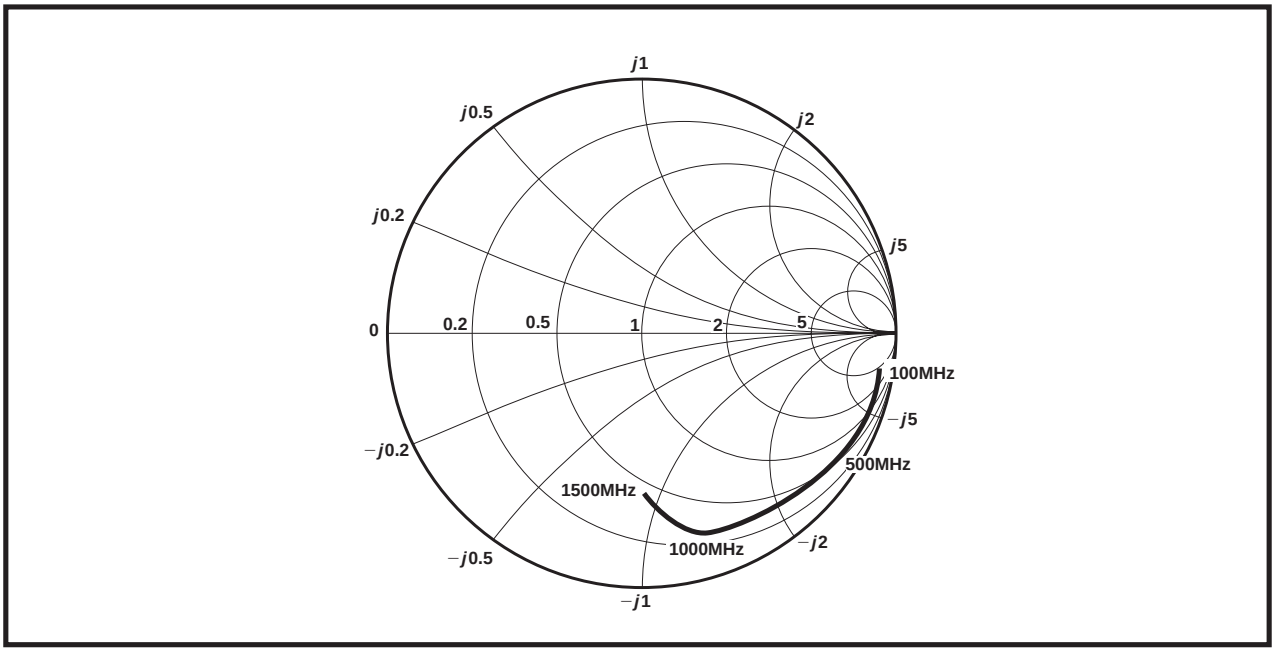
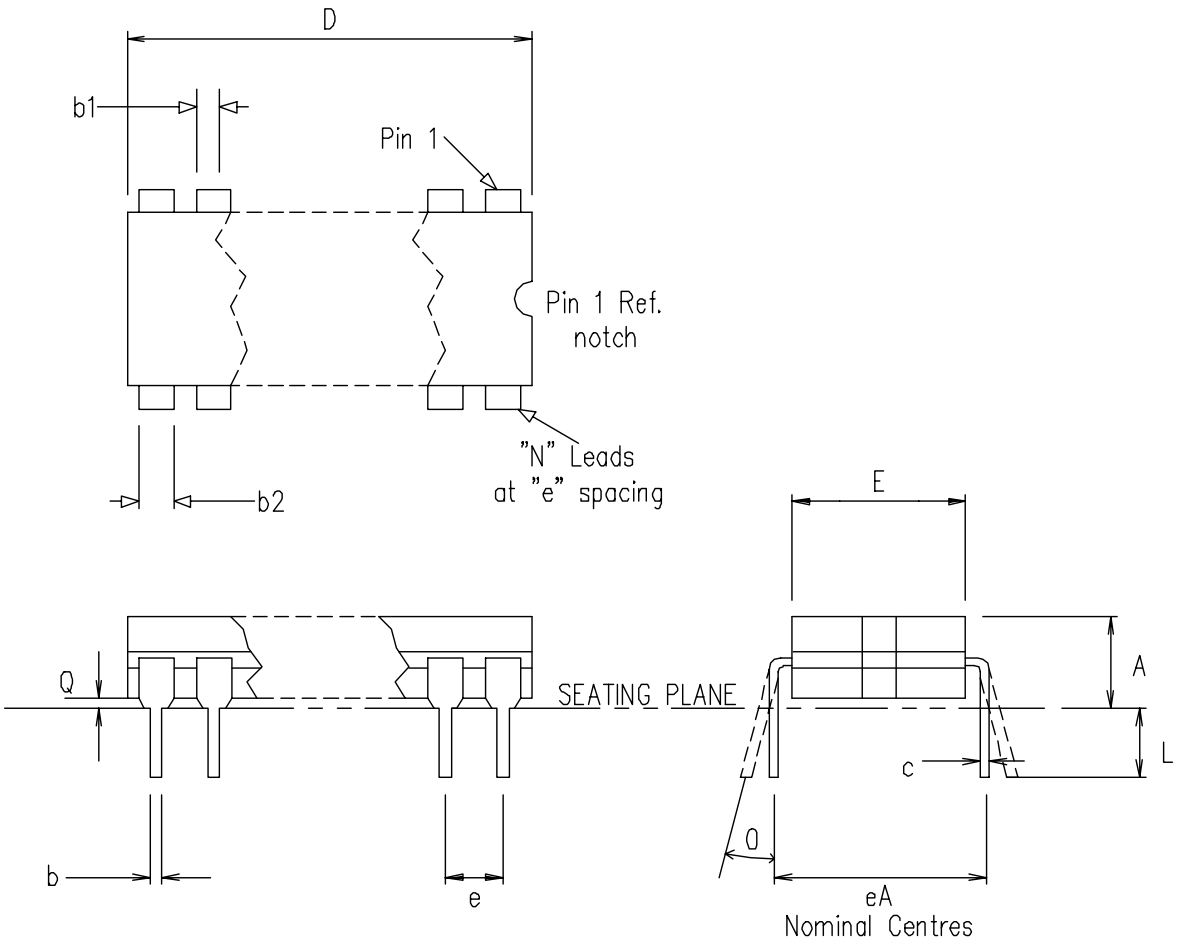


Figure 5 Typical input impdance, normalised to 50Ω



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
θ			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
ACN	201728					
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APPROVED						

Title: Outline drawing for 8 Lead Cerdip (DG)

Drawing Number
GPD00270

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