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SP8831

3.5GHz ÷ 16 FIXED MODULUS DIVIDER

The SP8831 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.

FEATURES

- Very High Speed Operation 3.5GHz
- Silicon Technology for low Phase Noise (Typically better than -150dBc/Hz at 10kHz)
- Specified Over the Full Military Temperature Range
- Low Power Dissipation 375mW (typ)
- 5V Single Supply Operation
- High Input Sensitivity
- Very Wide Operating Frequency Range

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

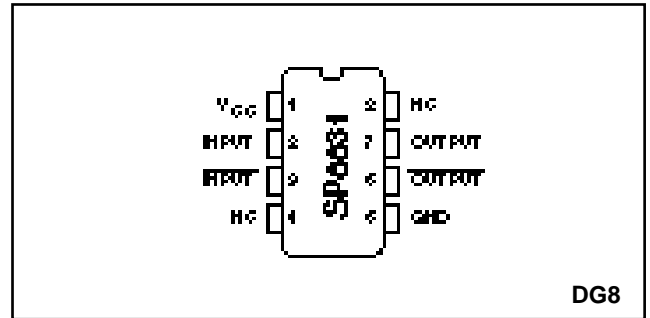


Fig.1 Pin connections top view

THERMAL CHARACTERISTICS

$j_a = 150^\circ\text{C/W}$

ORDERING INFORMATION

SP8831/B/DG Military temperature range

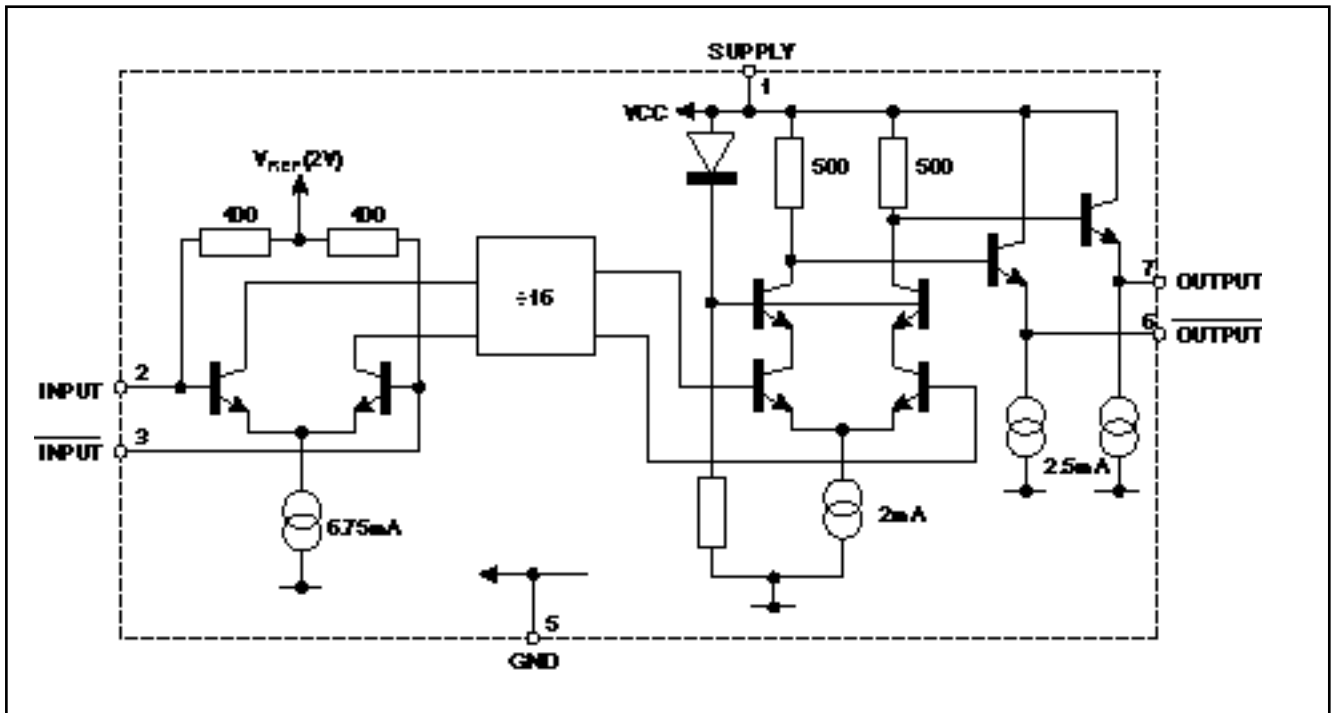


Fig.2 SP8831 Block diagram

SP8831

ELECTRICAL CHARACTERISTICS

Guaranteed over the temperature range T_{amb} -40°C to +85°C and supply voltage range V_{CC} = 4.75V to 5.25V.
 Tested at T_{amb} = -40°C and +85°C, V_{CC} = 4.75V and 5.25V.

Characteristic	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current	1		75	88	mA	V_{CC} = 5V RMS sinewave measured in 50 system. See Figs. 3 & 4
Input sensitivity 0.65GHz to 3.0GHz	2, 3			175	mV	
				500	mV	
Input impedance (series equivalent)	2, 3		50		pF	
Output Voltage with f_{in} = 650MHz	6, 7	.780	1.04	1.30	Vp-p	V_{CC} = 5V
Output Voltage with f_{in} = 3GHz	6, 7		0.95		Vp-p	V_{CC} = 5V load as Fig. 4

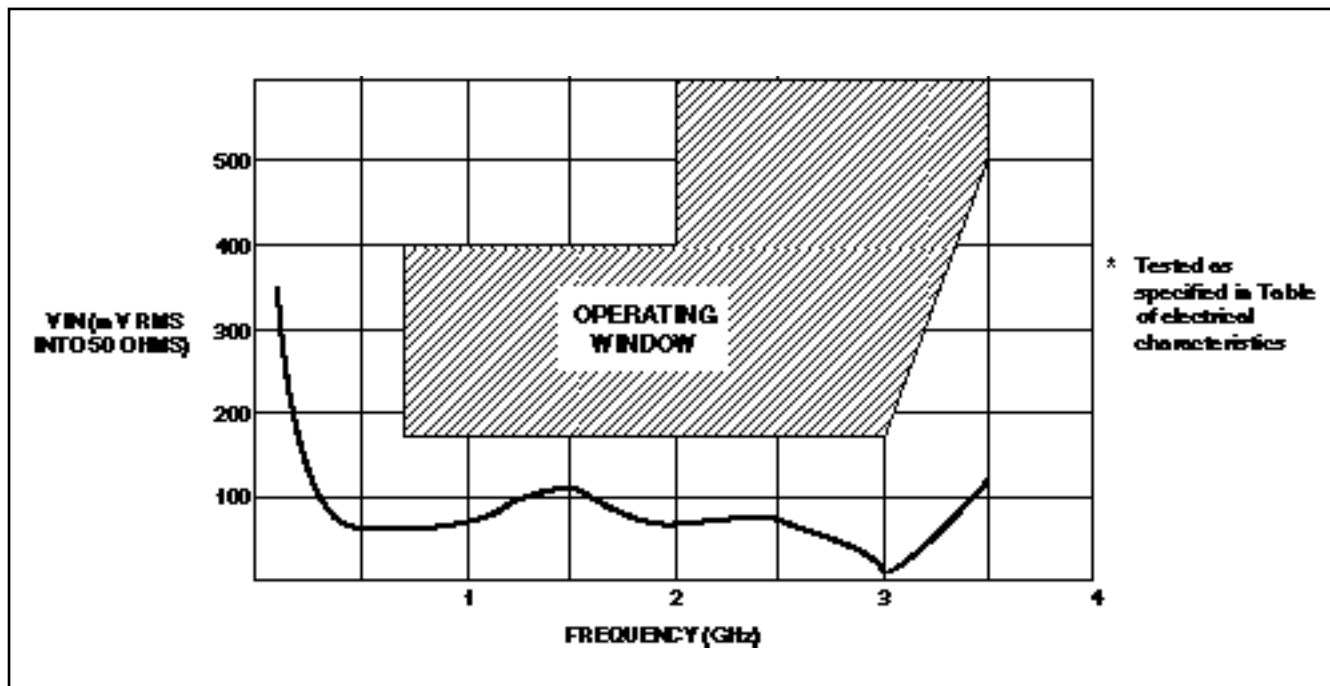


Fig.3 Typical input sensitivity

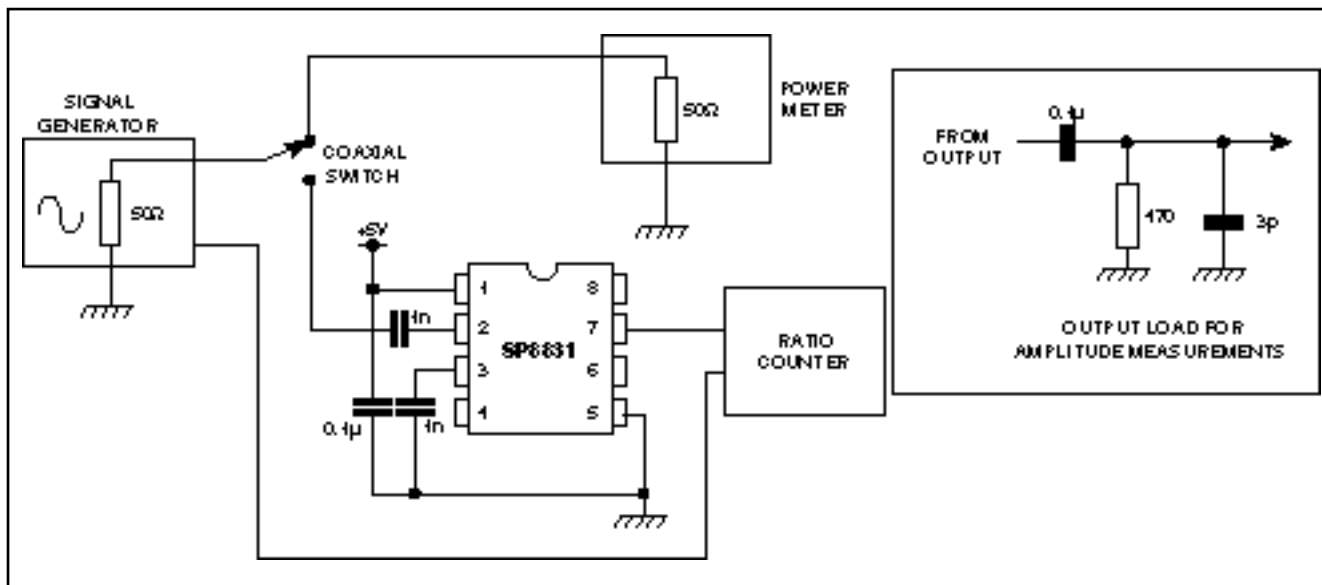


Fig.4 Test circuit

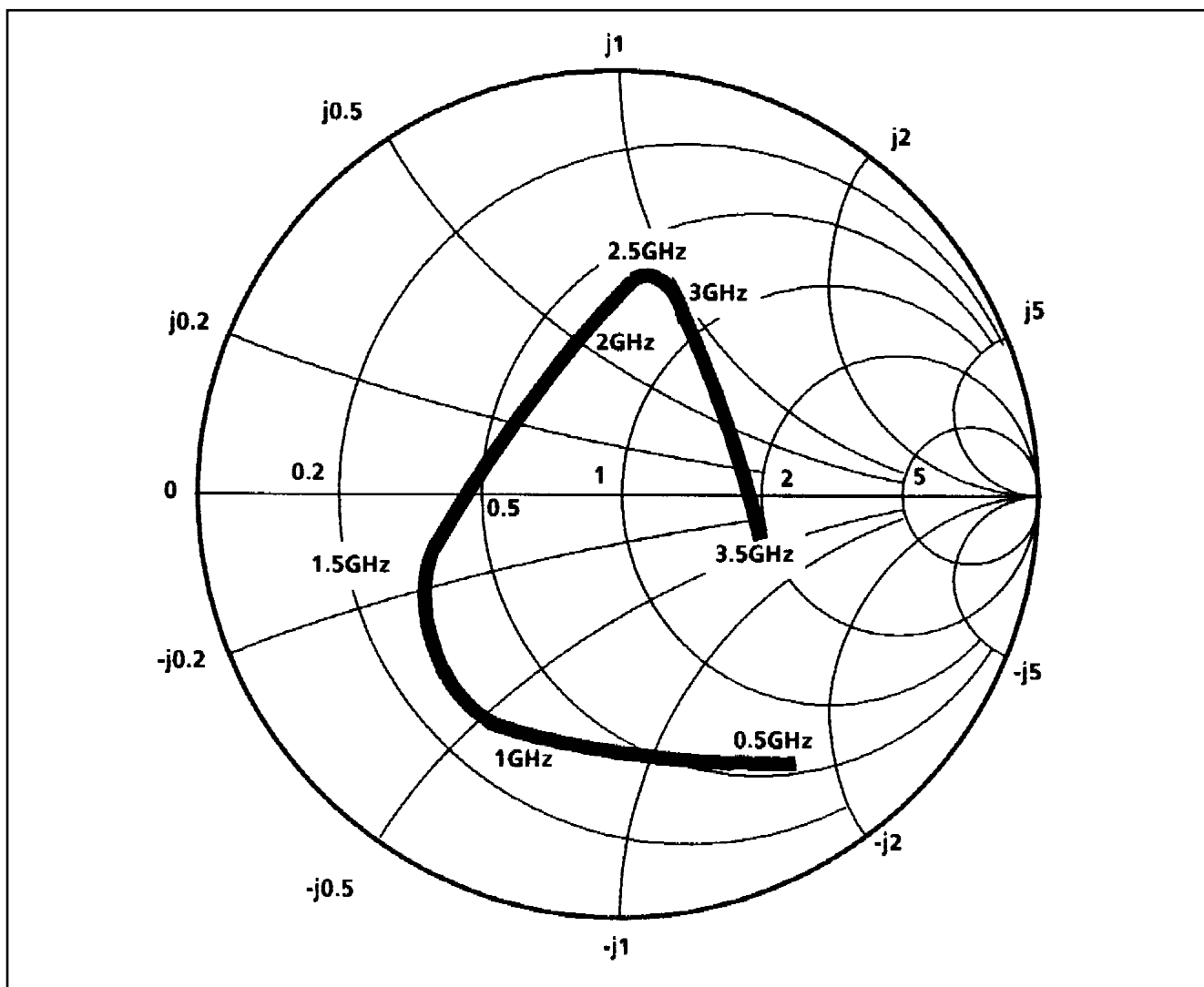


Fig.5 Typical input impedance

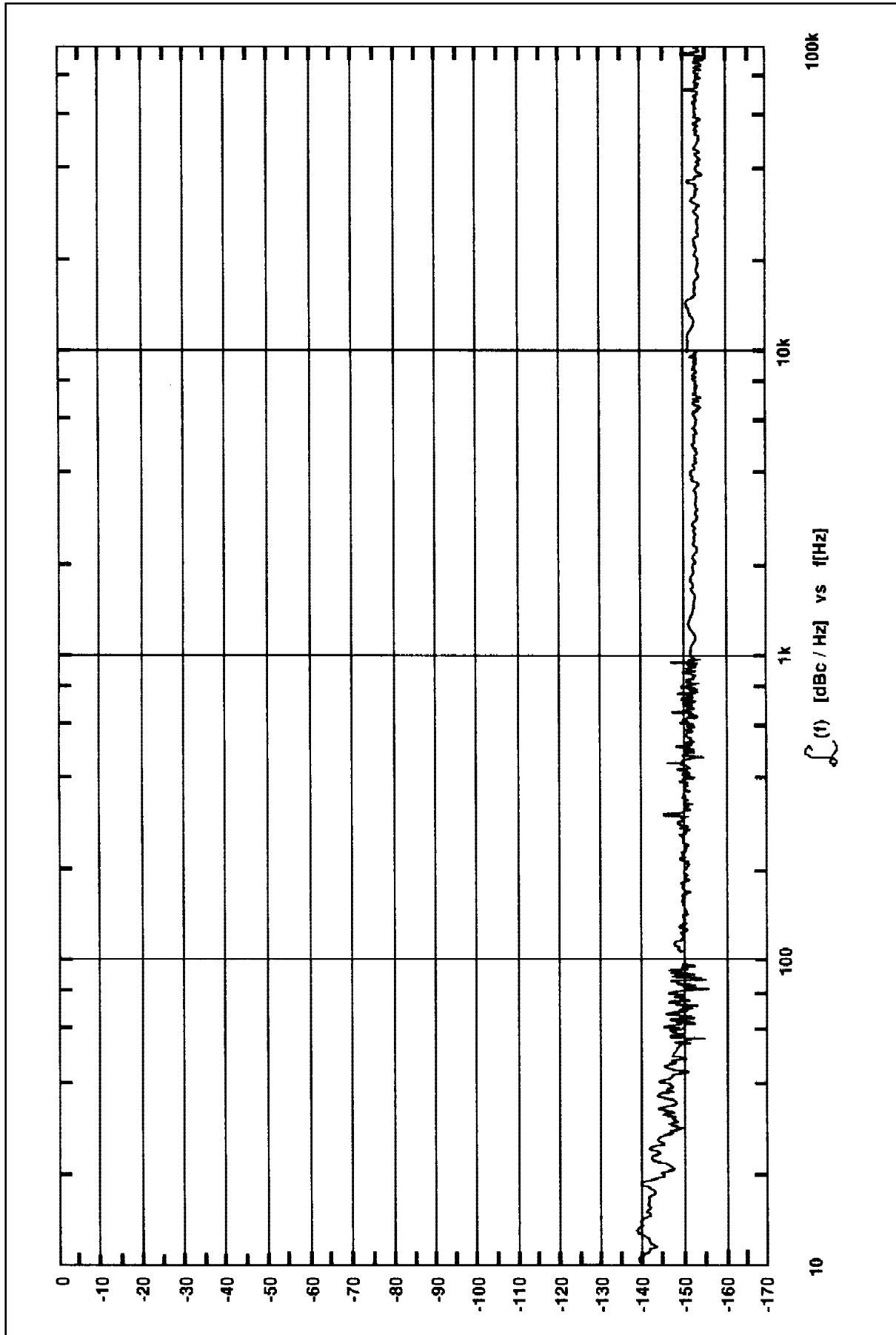
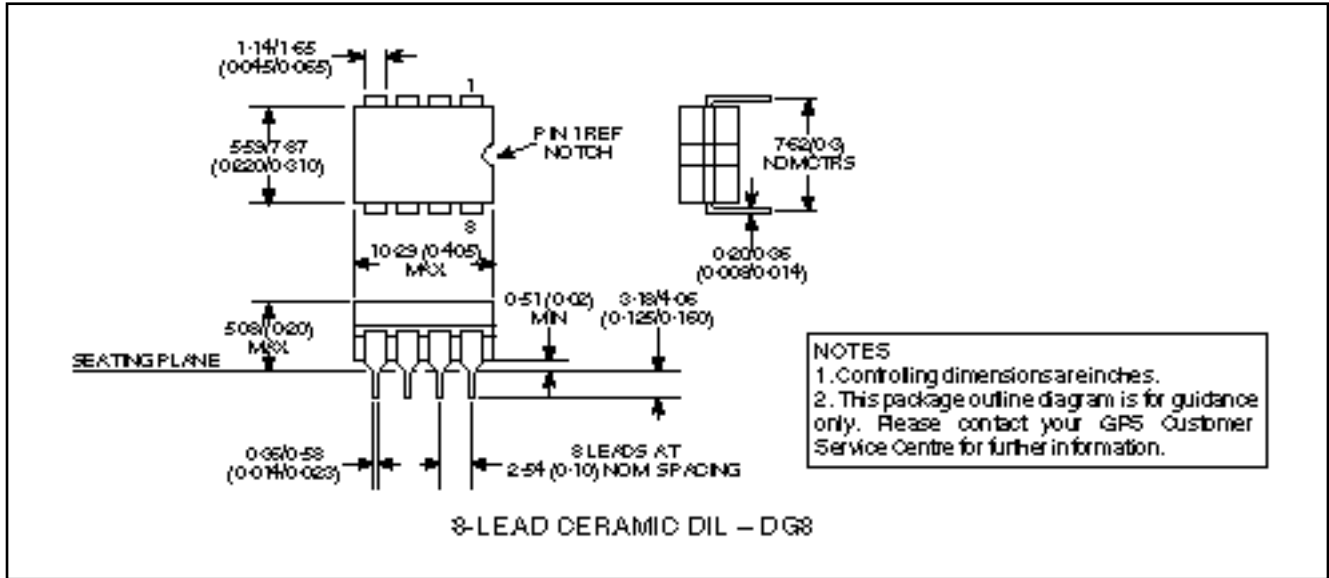


Fig.6 Typical phase noise of SP8831 at 1GHz carrier



HEADQUARTERS OPERATIONS

GEC PLESSEY SEMICONDUCTORS

Cheney Manor, Swindon,
Wiltshire SN2 2QW, United Kingdom.
Tel: (01793) 518000
Fax: (01793) 518411

GEC PLESSEY SEMICONDUCTORS

P.O. Box 660017
1500 Green Hills Road,
Scotts Valley, California 95067-0017,
United States of America.
Tel: (408) 438 2900
Fax: (408) 438 5576

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Swindon Tel: (01793) 518510 Fax : (01793) 518582

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