

SP8803

3.3GHz ÷ 32 FIXED MODULUS DIVIDER

The SP8803 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 3.3GHz
- Silicon Technology for low Phase Noise (Typically better than -150dBc/Hz at 10kHz)
- Specified Over the Full Military Temperature Range
- Low Power Dissipation 390mW (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

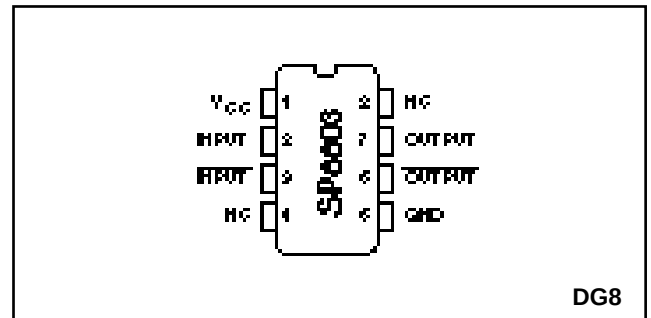


Fig.1 Pin connections top view

THERMAL CHARACTERISTICS

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

ORDERING INFORMATION

SP8803/A/DG Military temperature range

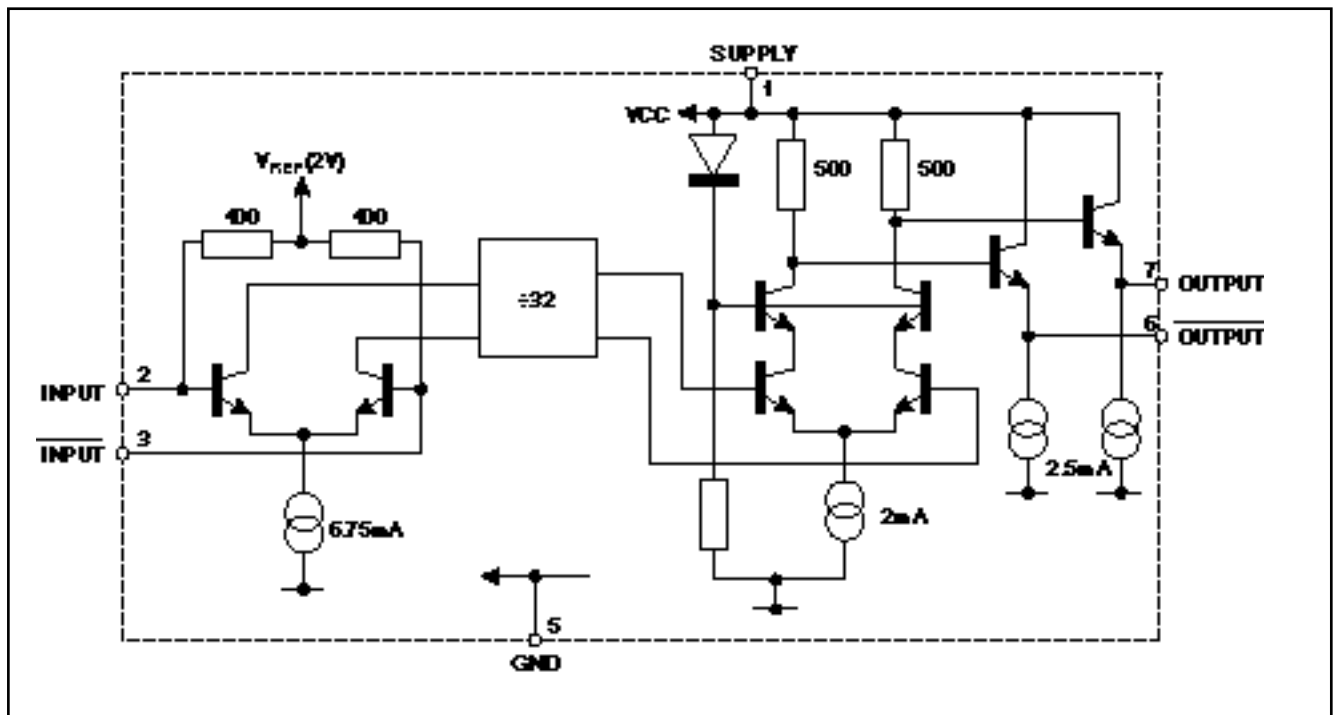


Fig.2 SP8803 Block diagram

SP8803

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 +125°C, V_{CC} = 4.75V and 5.25V.

Characteristic	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current	1		78	90	mA	V_{CC} = 5V
Input sensitivity	2, 3					RMS sinewave
0.65GHz to 2.8GHz				175	mV	measured in 50W
3.3GHz				400	mV	system. See Figs. 3 & 4
Input impedance (series equivalent)	2, 3		50		W	
			2		pF	
Output Voltage with f_{in} = 650MHz	6, 7	.815	1.09	1.36	Vp-p	V_{CC} = 5V
Output Voltage with f_{in} = 3GHz	6, 7		1.03		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 $T_{amb} > 105^\circ\text{C}$.

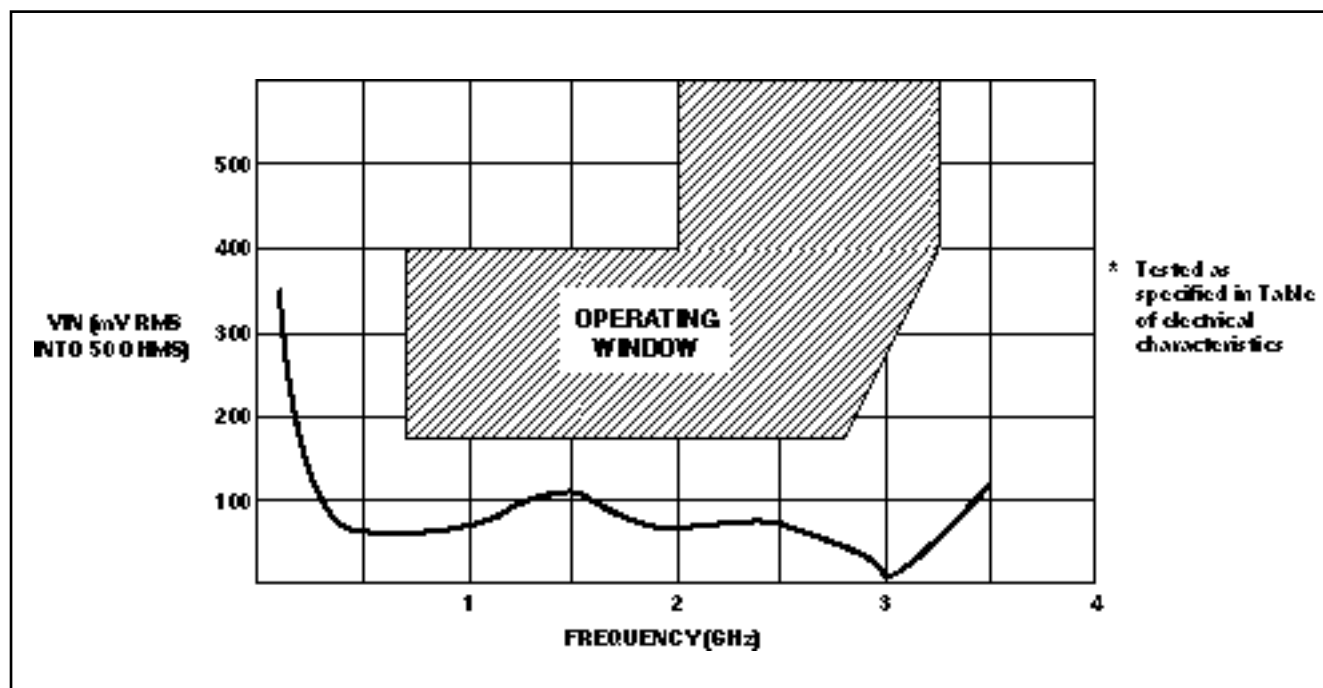


Fig.3 Typical input sensitivity

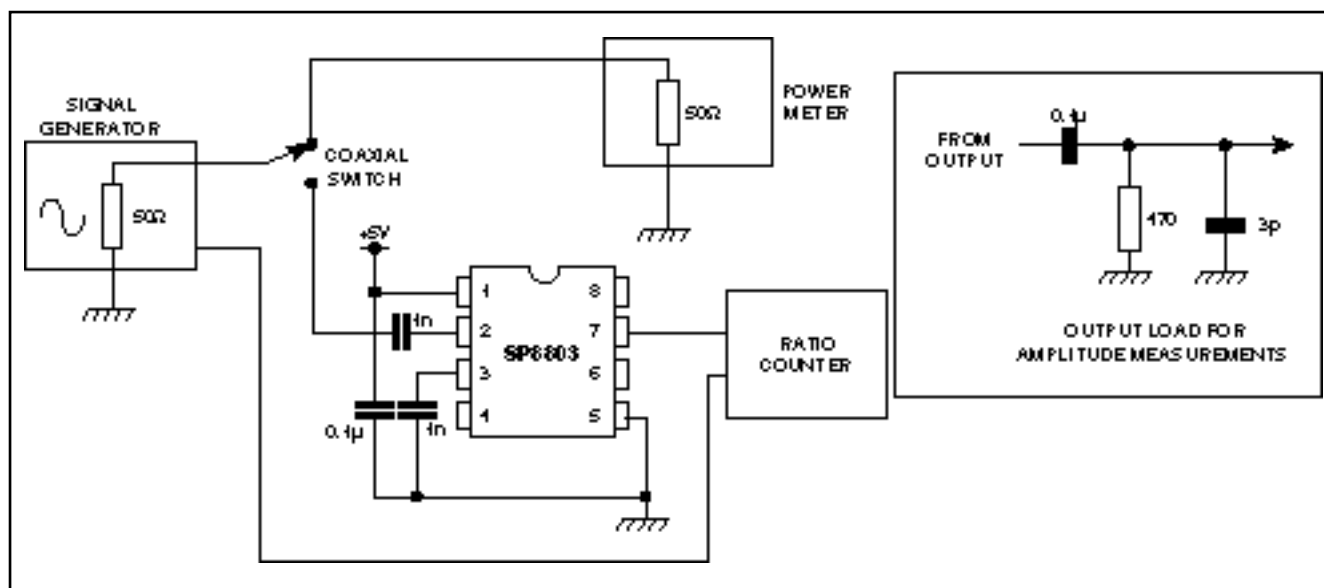


Fig.4 Test circuit

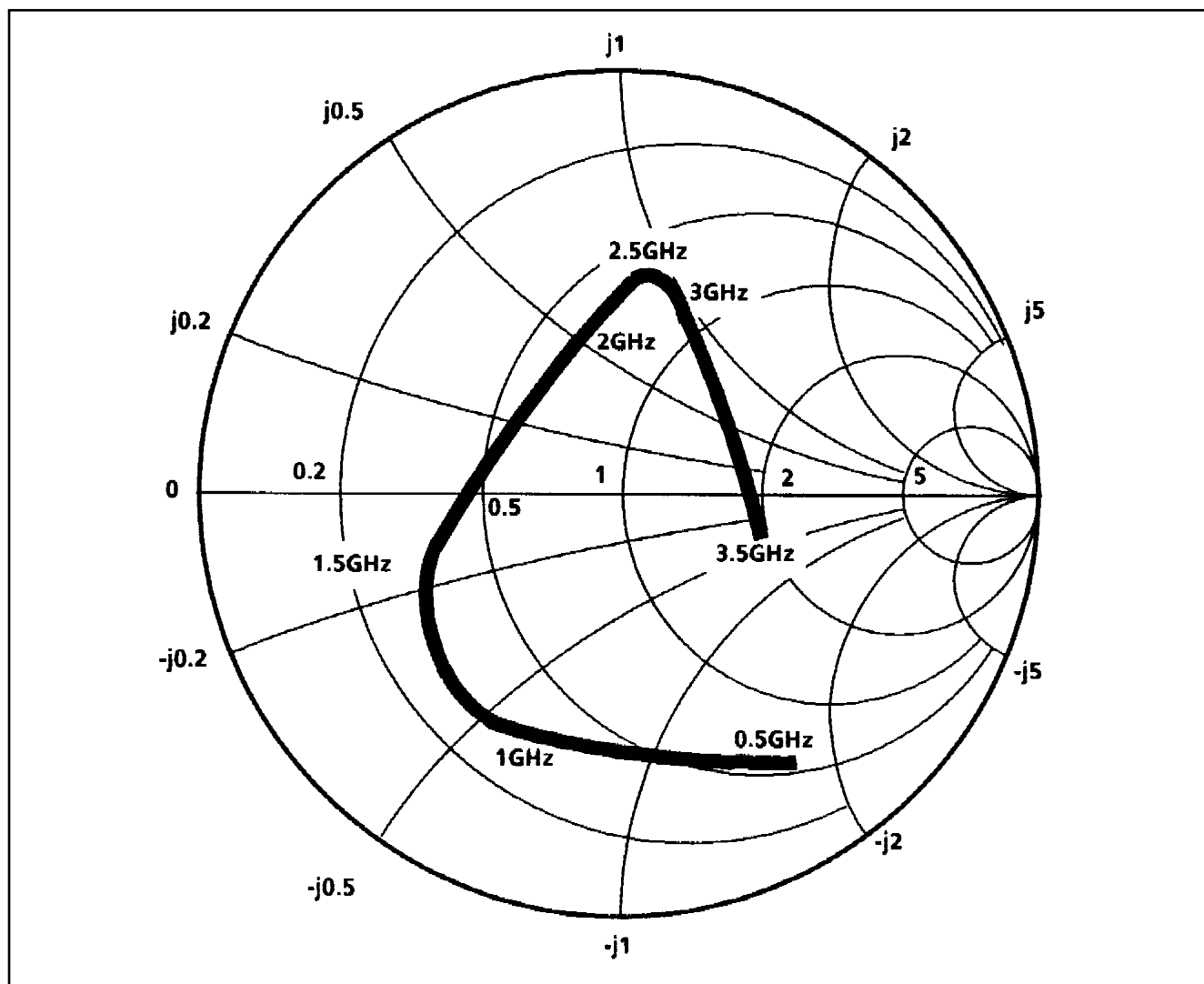


Fig.5 Typical input impedance

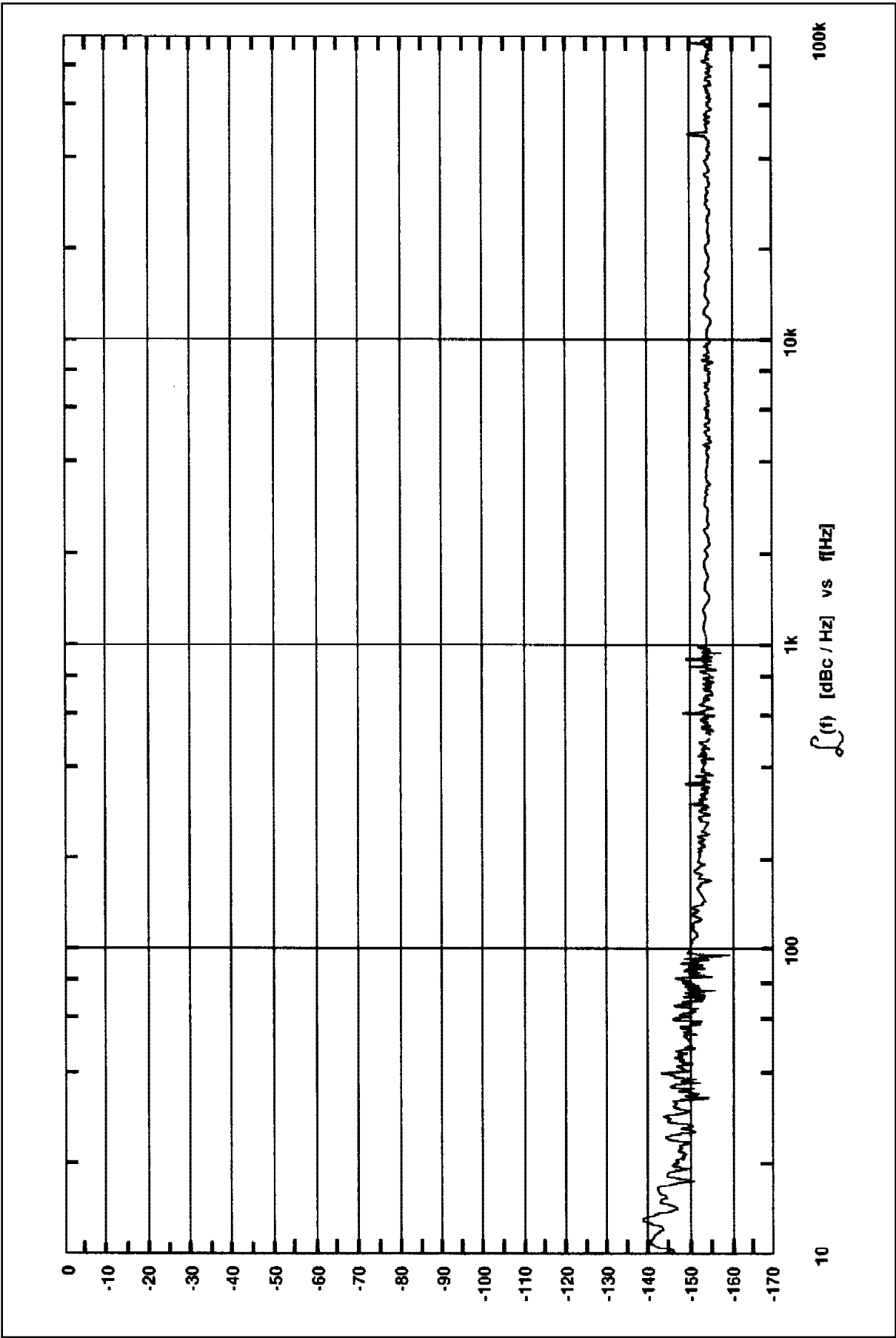
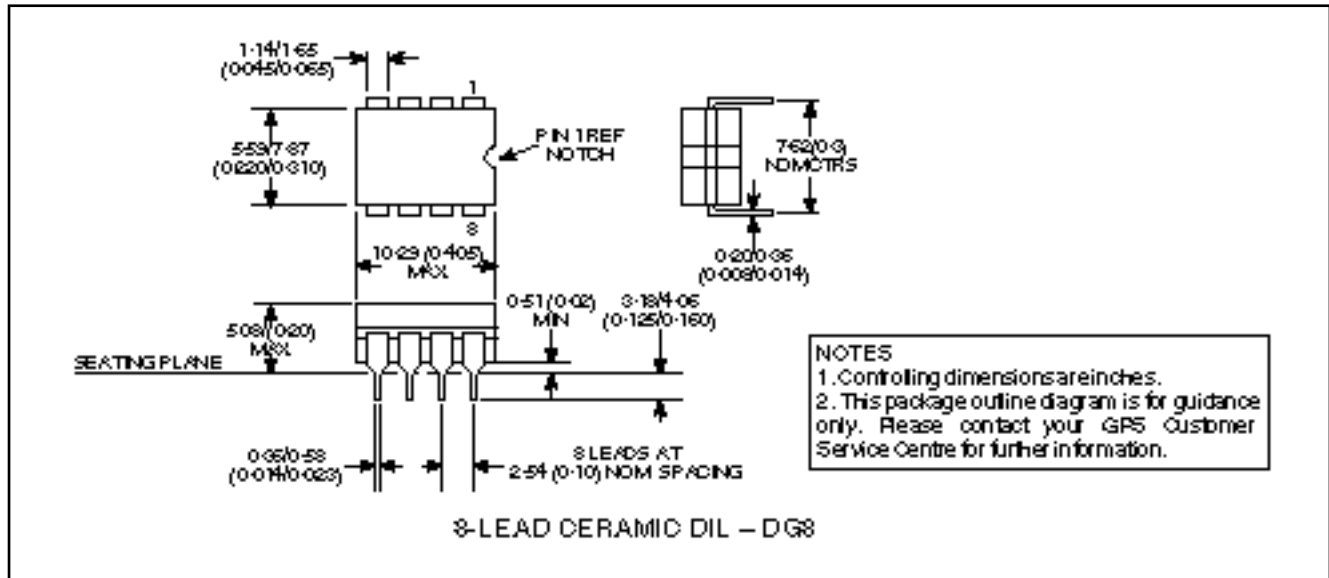


Fig.6 Typical phase noise of SP8803 at 1GHz carrier



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