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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

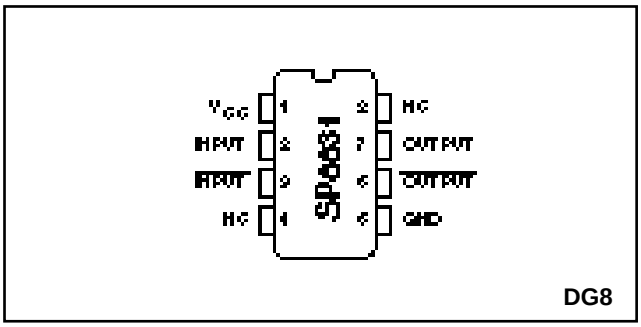


Fig.1 Pin connections top view

THERMAL CHARACTERISTICS

θja = 150°C/W

ORDERING INFORMATION

SP8831/B/DG Military temperature range

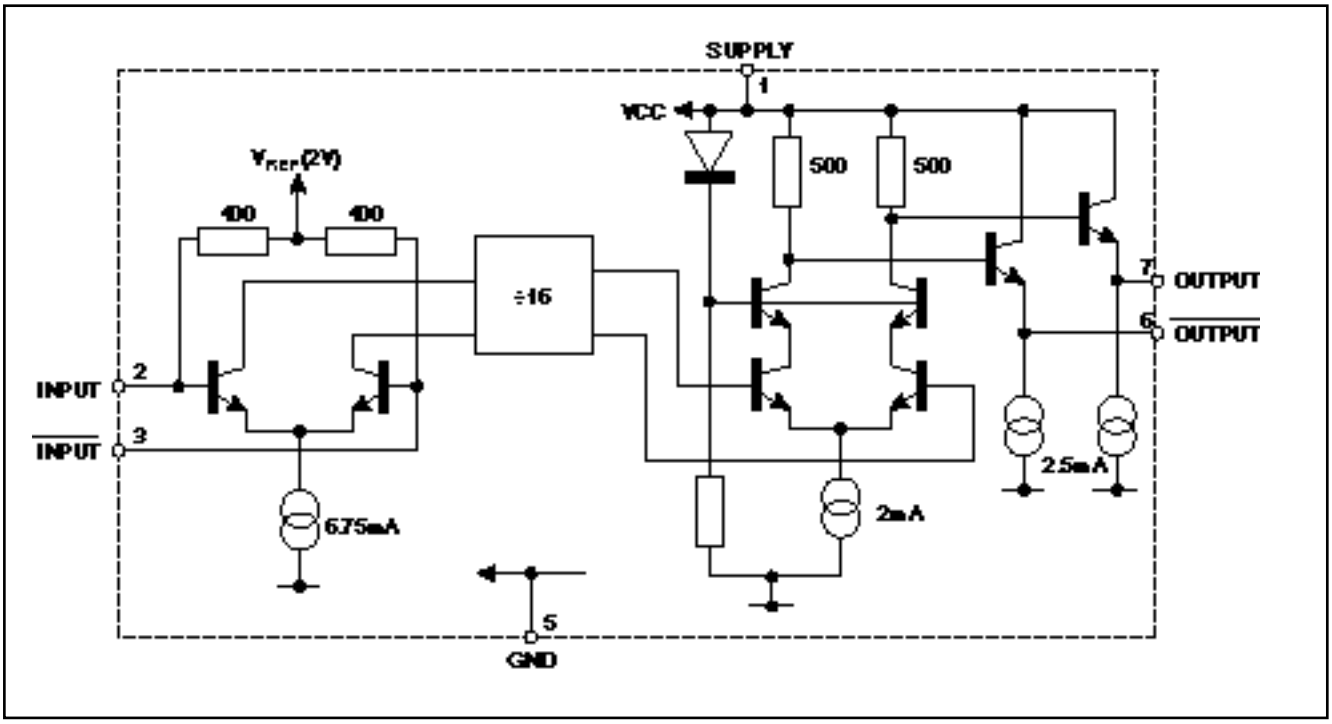


Fig.2 SP8831 Block diagram

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
Input sensitivity	2, 3					RMS sinewave
0.65GHz to 3.0GHz				175	mV	measured in 50Ω
3.5GHz				500	mV	system. See Figs. 3 & 4
Input impedance (series equivalent)	2, 3		50		Ω	
			2		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

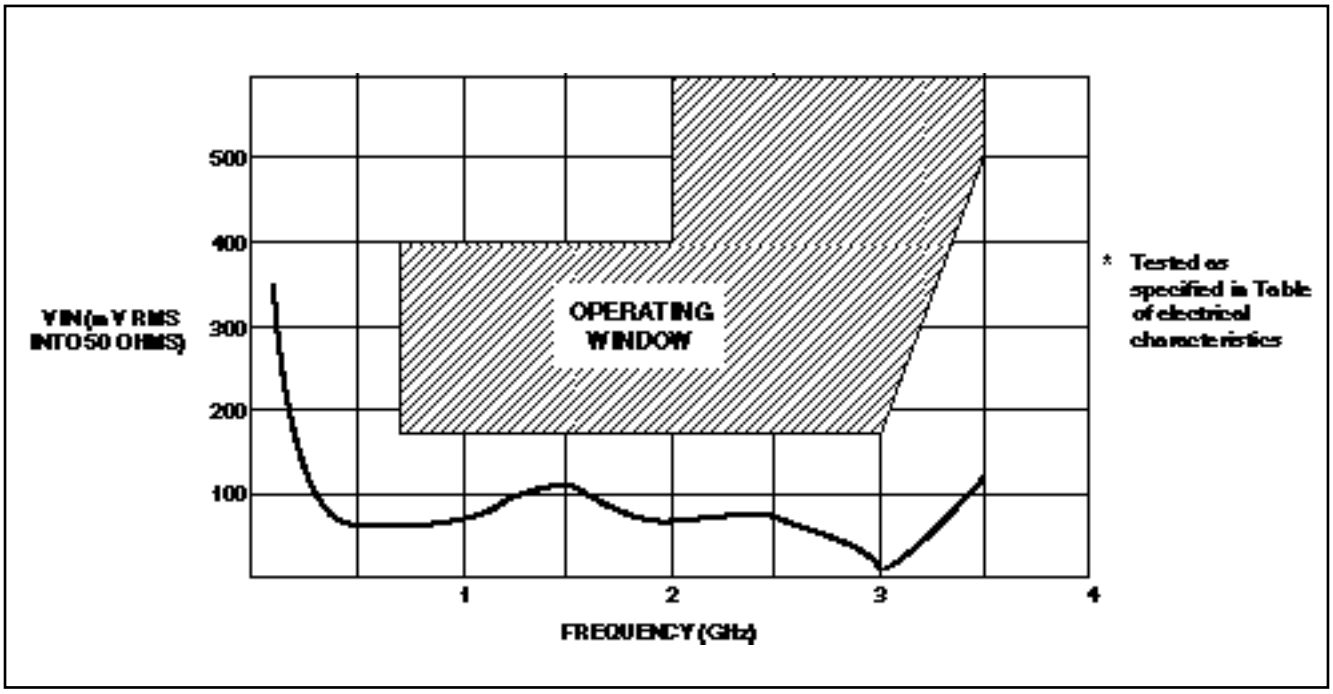


Fig.3 Typical input sensitivity

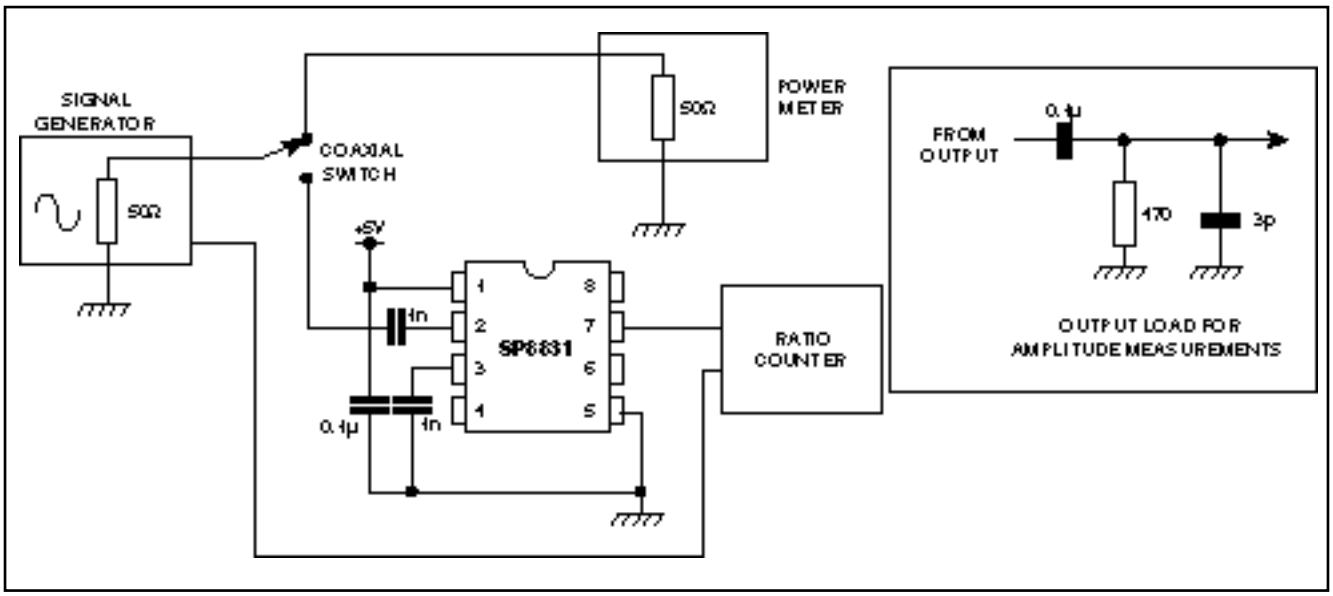


Fig.4 Test circuit

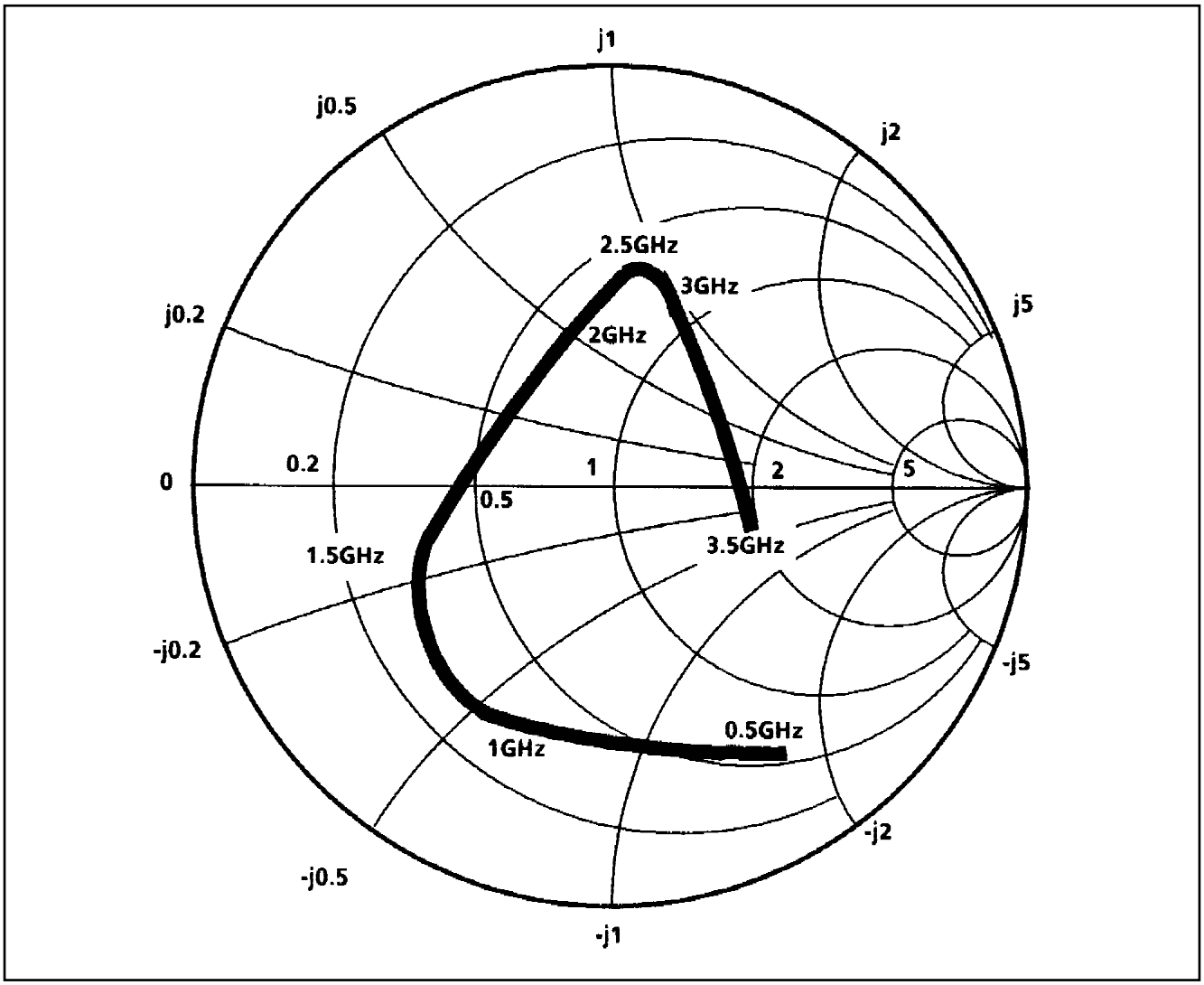


Fig.5 Typical input impedance

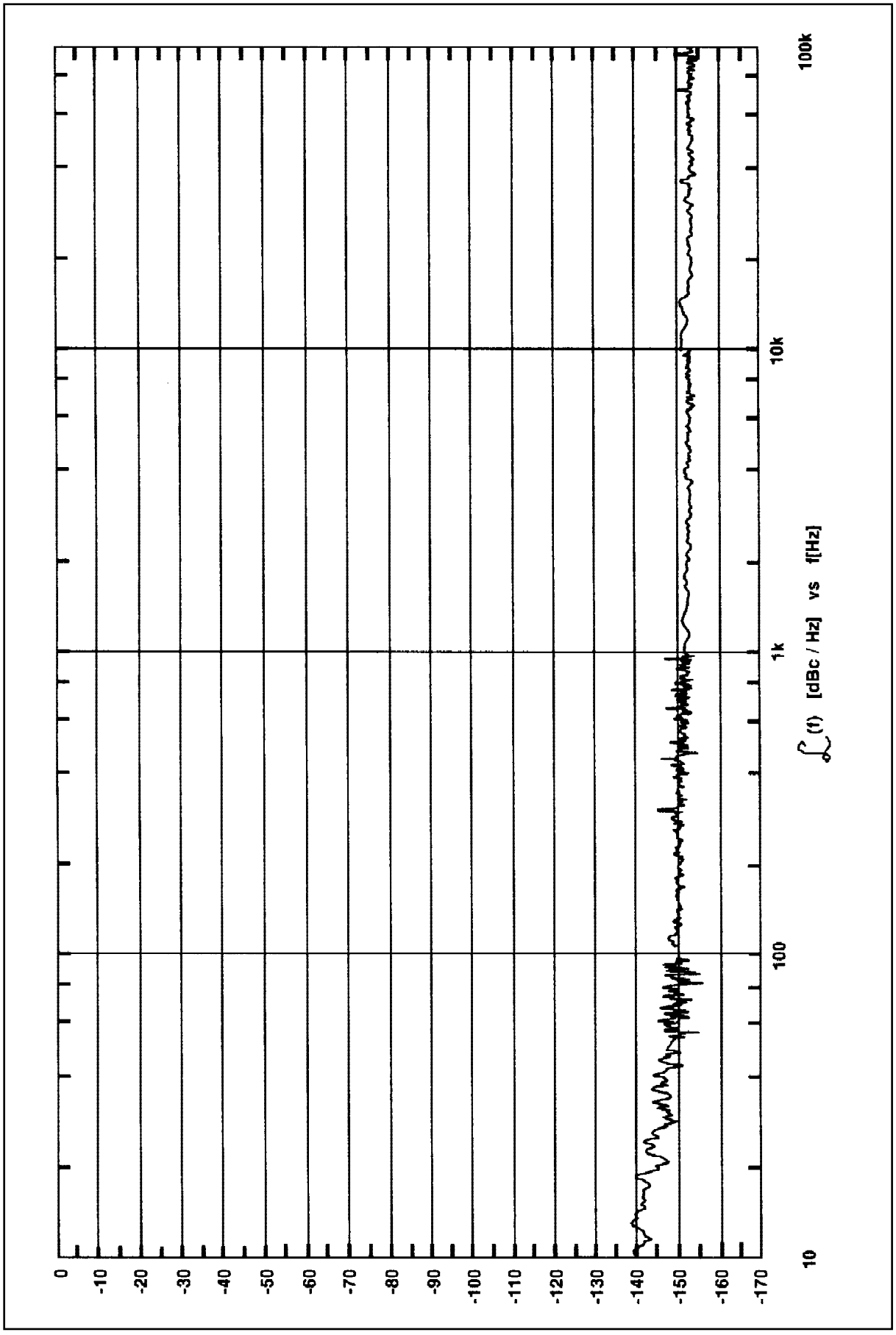
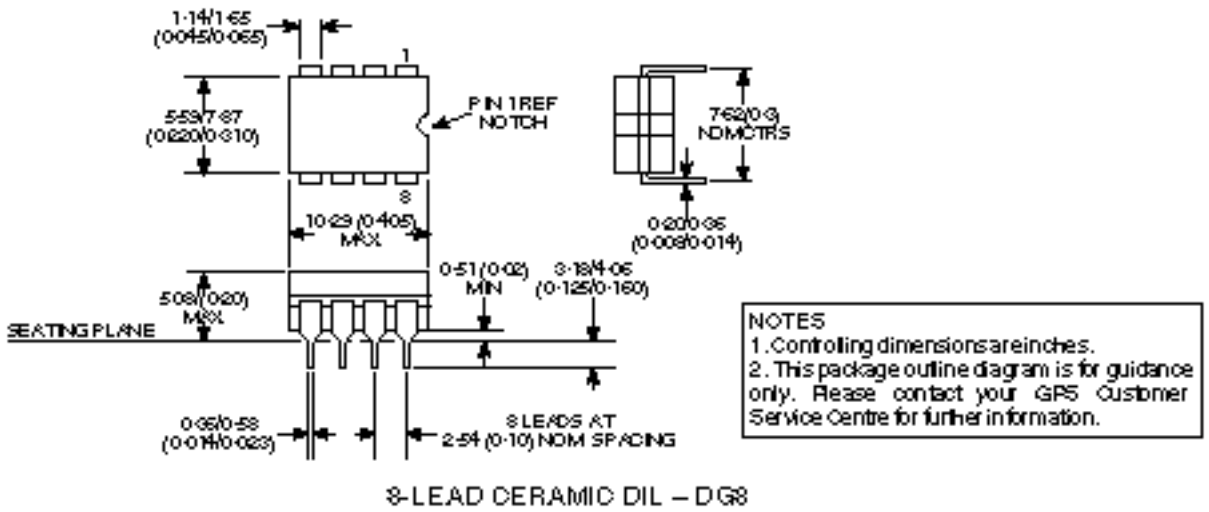


Fig.6 Typical phase noise of SP8831 at 1GHz carrier



8-LEAD CERAMIC DIL – DG8

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