

The SP8910 is one of a range of very high speed low power prescalers for professional applications. The dividing elements are static D type flip flops and therefore allow operation down to DC if the drive signal is a pulse waveform with fast risetime. The output stage has internal 100 ohm pull up resistors giving a 0.5V p-p output. If required an external 100 ohm resistor can be connected in parallel to give a 50 ohm output.

FEATURES

- Very High Operating Speed
- Operation down to DC with square wave input
- Silicon Technology for low Phase Noise
(Typically better than -140dBc/Hz at 1KHz)
- 5V Single Supply Operation
- Low Power Dissipation-340mW (Typ.)
- Surface Mount Plastic Package

ABSOLUTE MAXIMUM RATINGS

Supply Voltage, V_{CC}	6.5V
Storage Temperature	-65°C to $+150^{\circ}\text{C}$
Maximum Junction Temperature	$+150^{\circ}\text{C}$
Prescaler Input Voltage	2.5Vp-p
Operating Temperature	KG -40°C to $+85^{\circ}\text{C}$ T_{case}

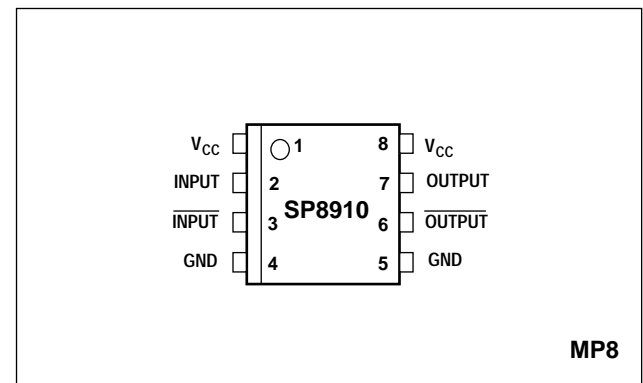


Fig.1 Pin connections - top view

ORDERING INFORMATION

SP8910/KG/MP1S (Tubes)
 SP8910/KG/MP1T (Tape and Reel)

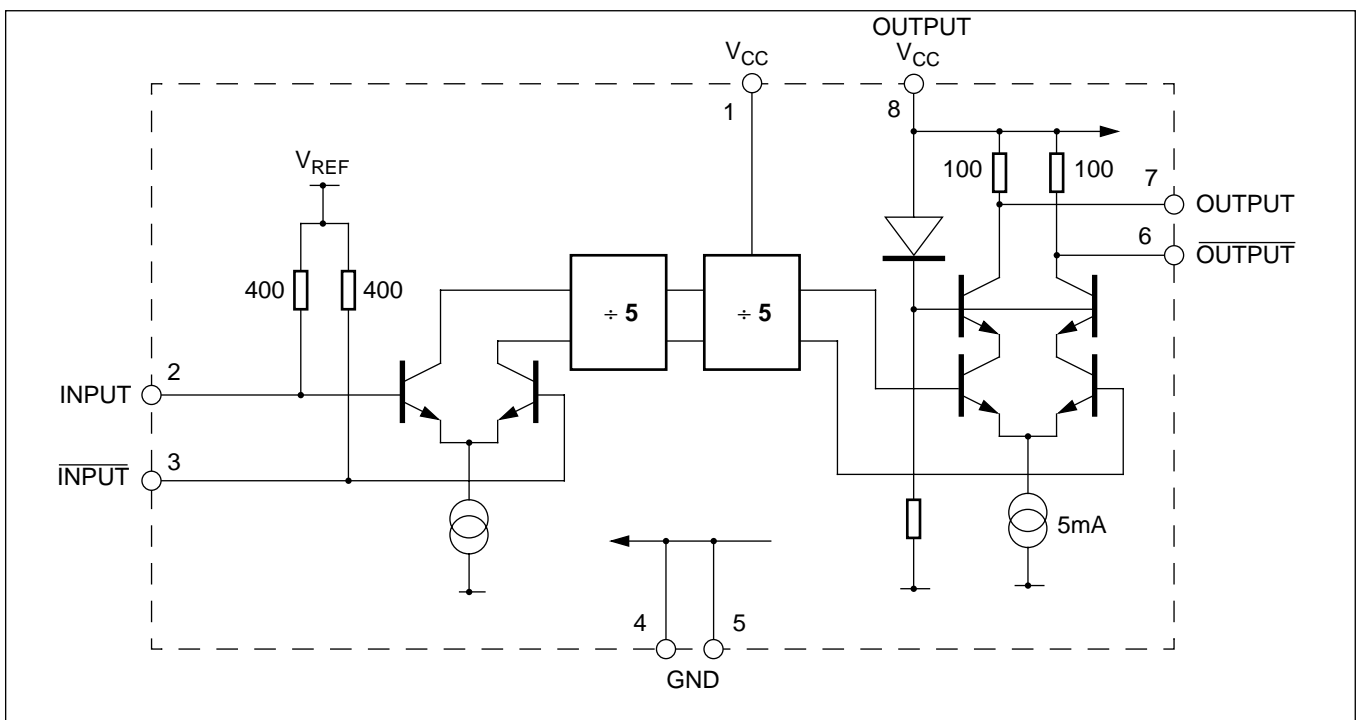


Fig.2 SP8910 block diagram

SP8910

SP8910CG ELECTRICAL CHARACTERISTICS

Guaranteed over the full specified temperature and supply voltage range

Test conditions (unless otherwise stated):

Temperature $T_{amb} = -40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$.

Supply Voltage: $V_{CC} = 4.75\text{V}$ and 5.25V

Characteristic	Pin	Value			Units	Conditions
		Min.	Typ.	Max.		
Supply current	1, 8	-	68	92	mA	
Input frequency	2, 3	1.0	-	5.0	GHz	RMS sinewave
Input frequency	2, 3	1.0	-	5.5	GHz	RMS sinewave, $T_{case} = -55^{\circ}\text{C}$ & $+85^{\circ}\text{C}$
Input sensitivity	2, 3	-	-	180	mVrms	$f_{in} = 1\text{GHz}$ & 4.2GHz
Input sensitivity	2, 3	-	-	570	mVrms	$f_{in} = 5\text{GHz}$
Input overload	2, 3	440	-	-	mVrms	$f_{in} = 1\text{GHz}$ & 3GHz
Input overload	2, 3	700	-	-	mVrms	$f_{in} = 5\text{GHz}$ & 3.8GHz
Output voltage	6, 7	-	0.25	-	Vp/p	Into 100Ω pull up resistor
Output power	6, 7	-18.0	-9.0	-4.0	dBm	$f_{in} = 1$ and 5GHz (see note 1)

NOTE 1.

Measured into 50Ω measuring instrument in parallel with 100Ω pull up resistor. See Fig.5.

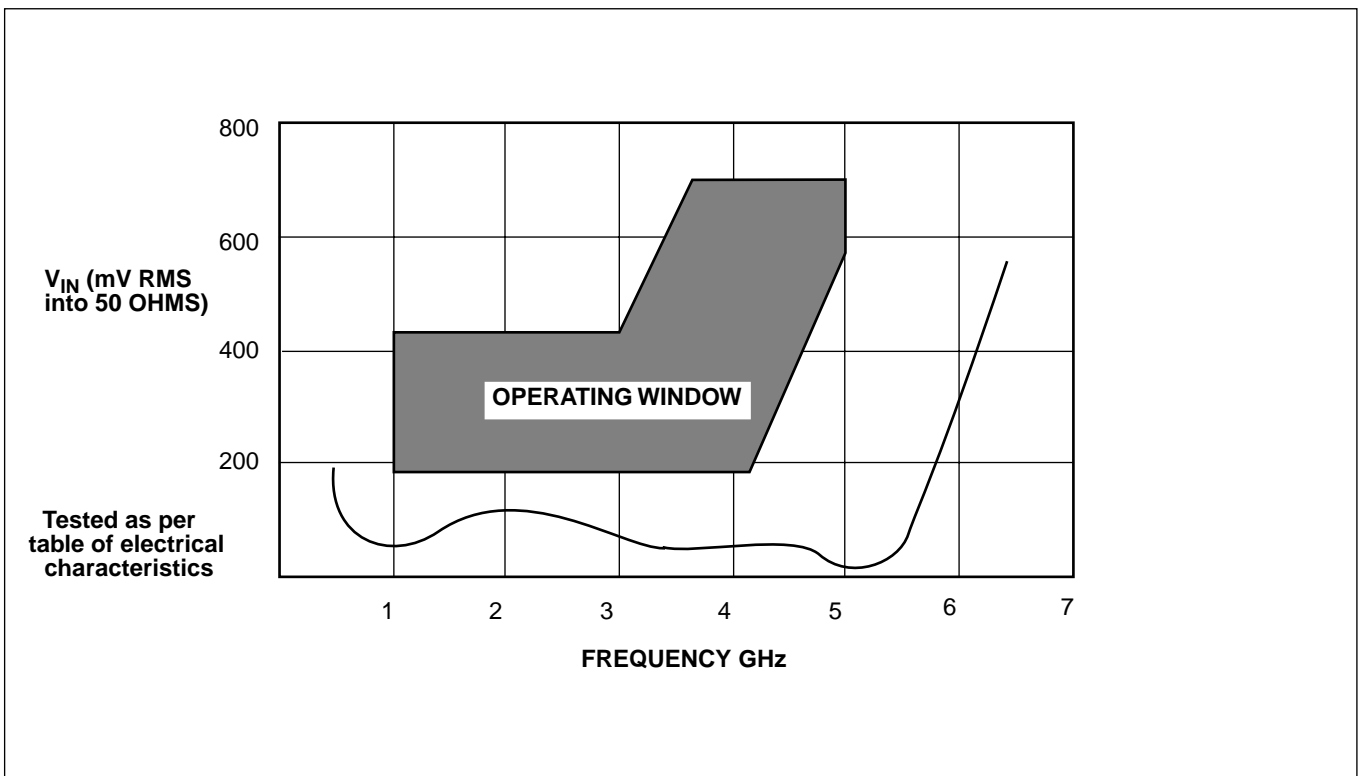


Fig.3 Typical input sensitivity (sine wave drive)

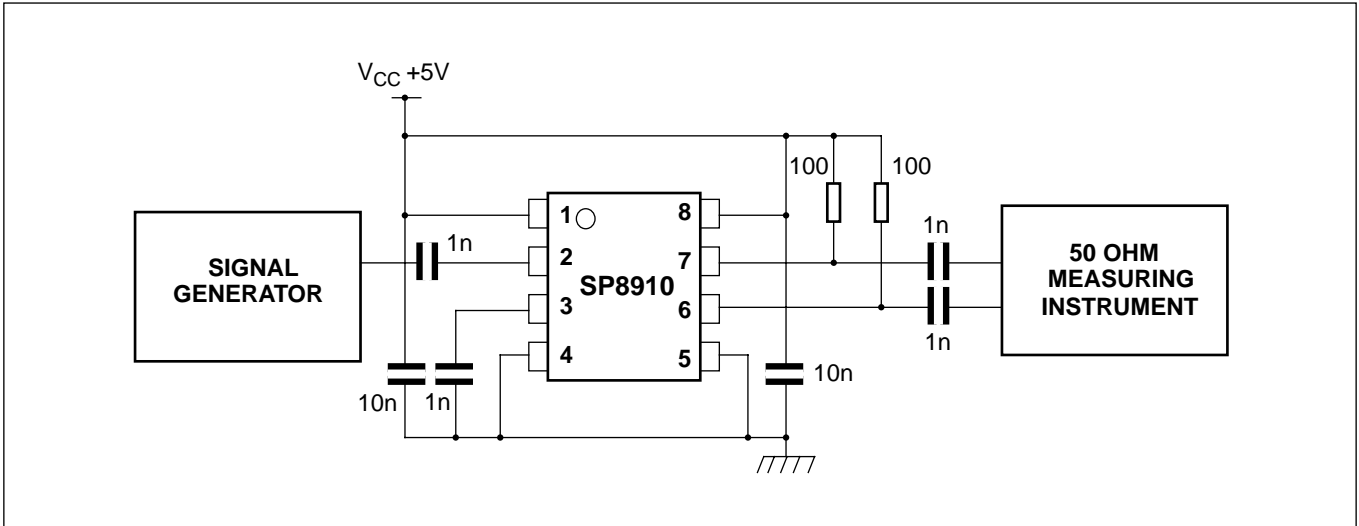


Fig.4 Typical application and test circuit

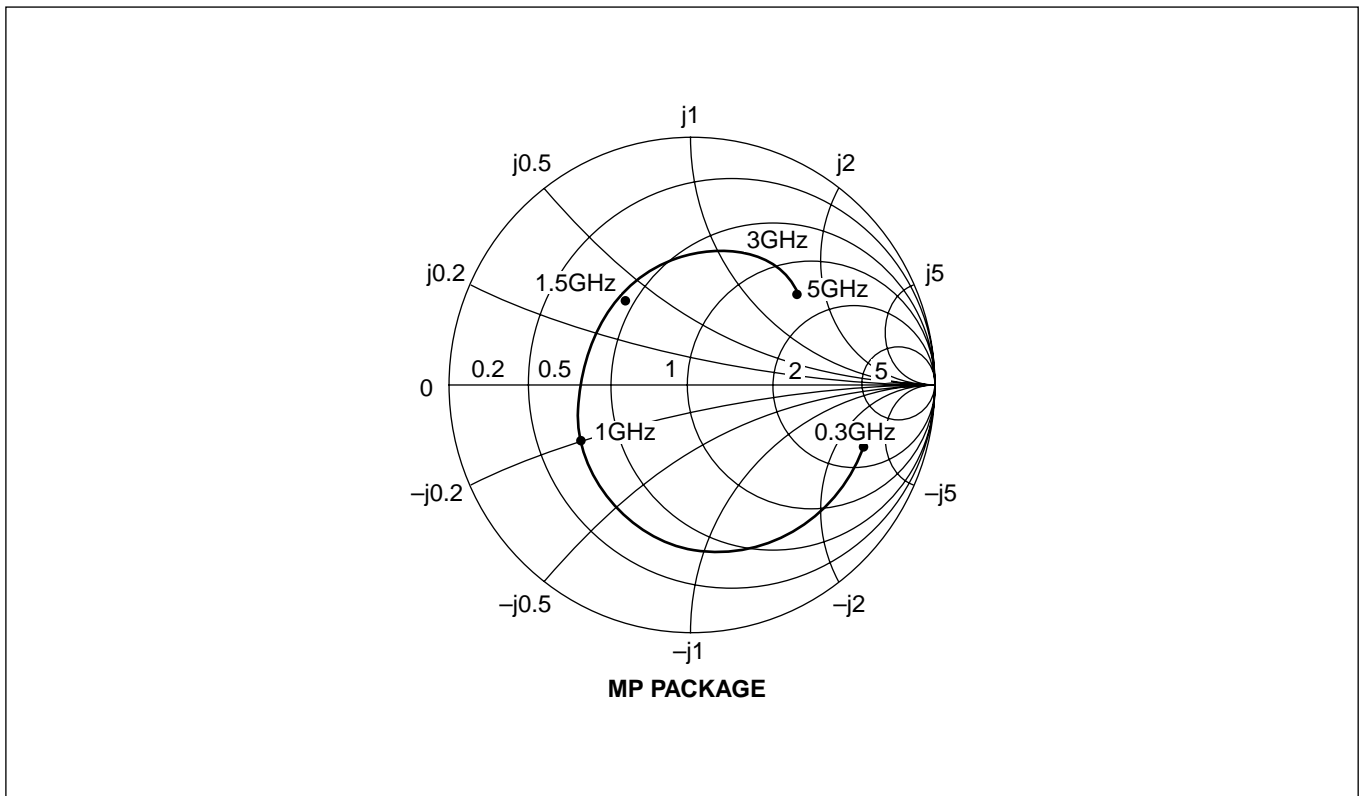


Fig.5 Typical input impedance

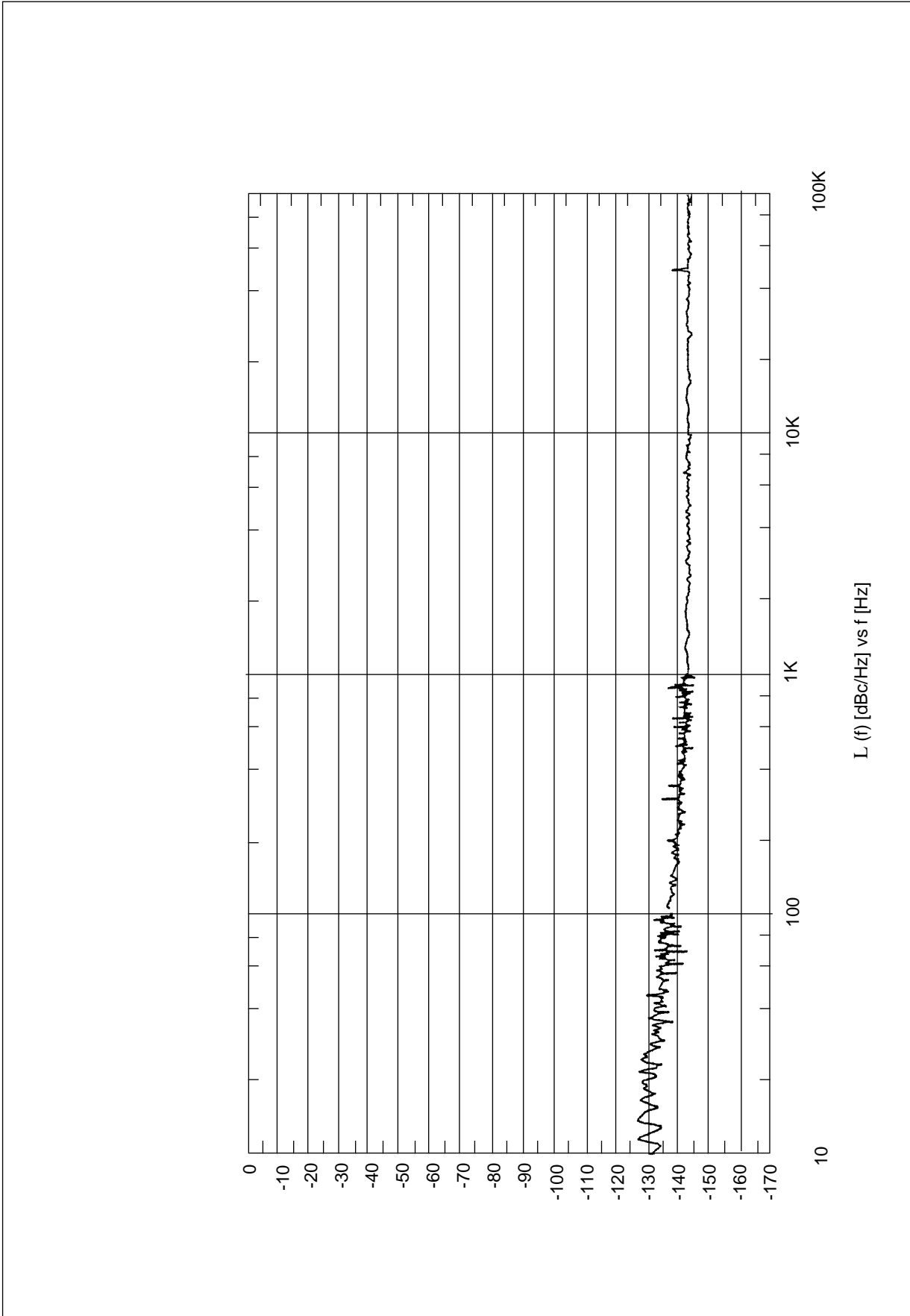


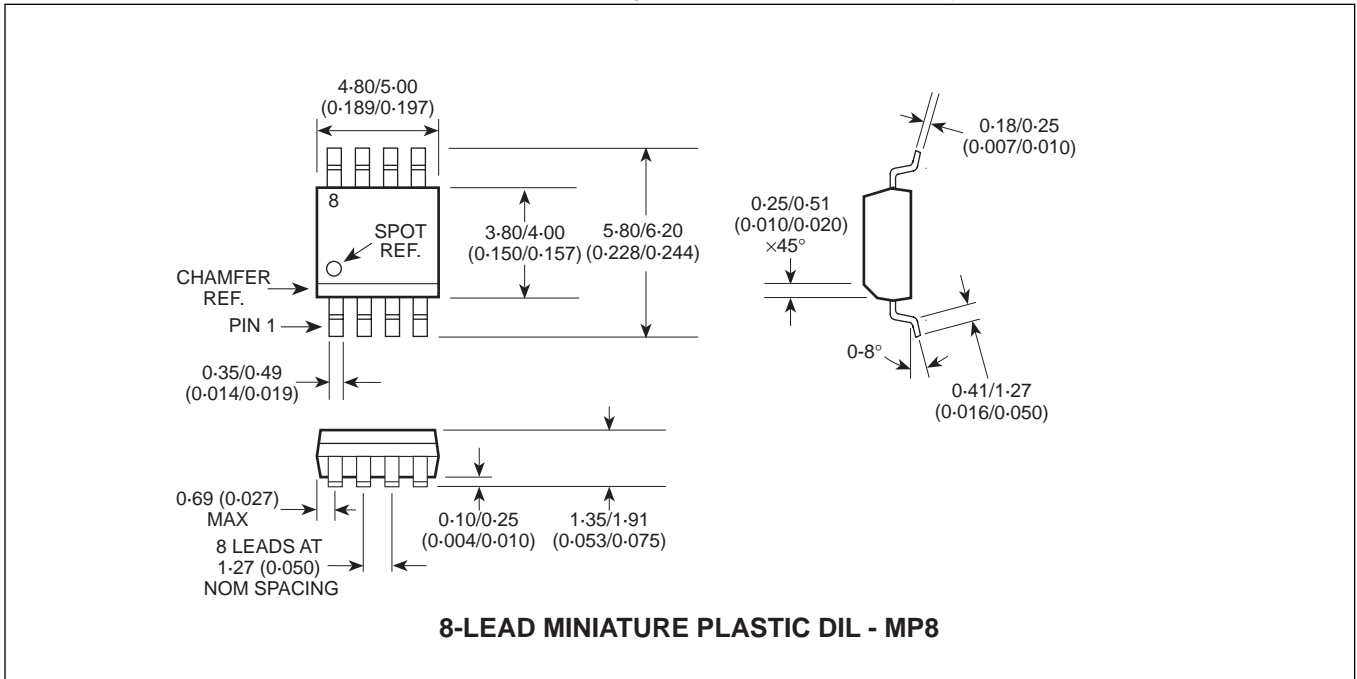
Fig.6 Typical phase noise of SP8910, input frequency = 3GHz

NOTES

SP8910

PACKAGE DETAILS

Dimensions are shown thus: mm (in). For further package information please contact your local Customer Service Centre.



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