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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

Ordering Information
SP8803/A/DG Military temperature range

Description

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.

Thermal Characteristics

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

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

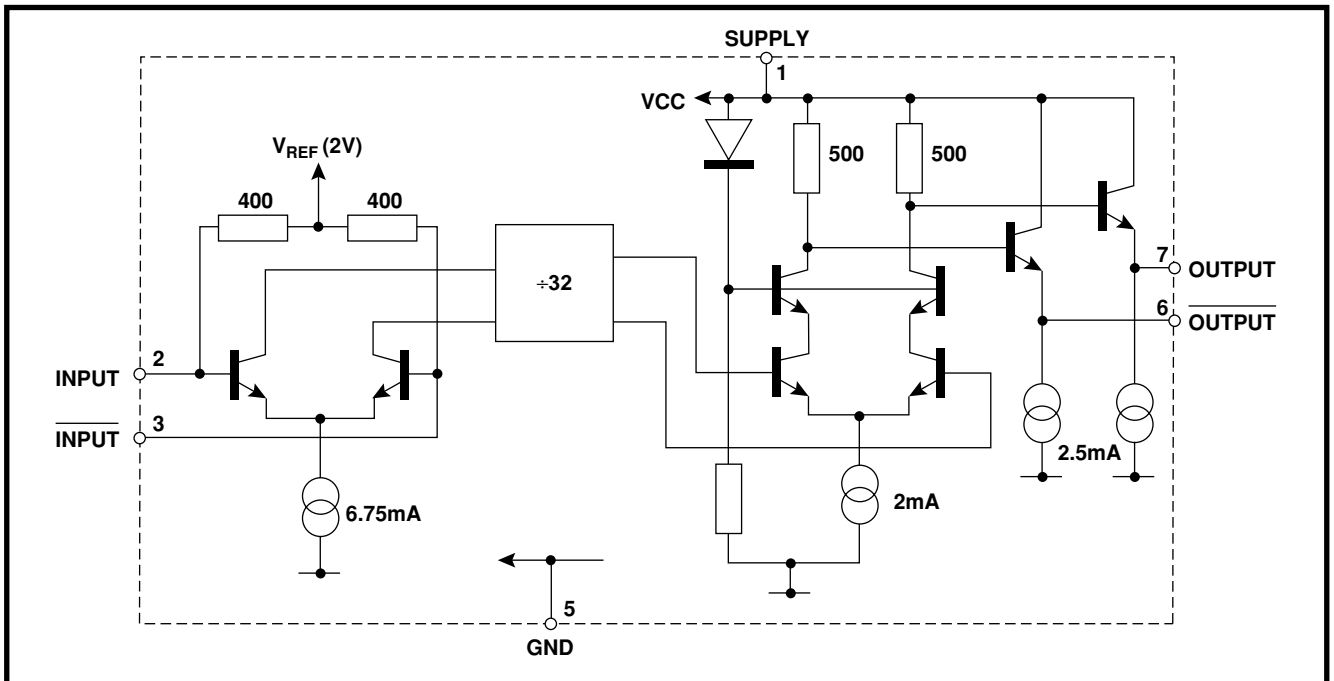


Figure 1 SP8803 Block diagram

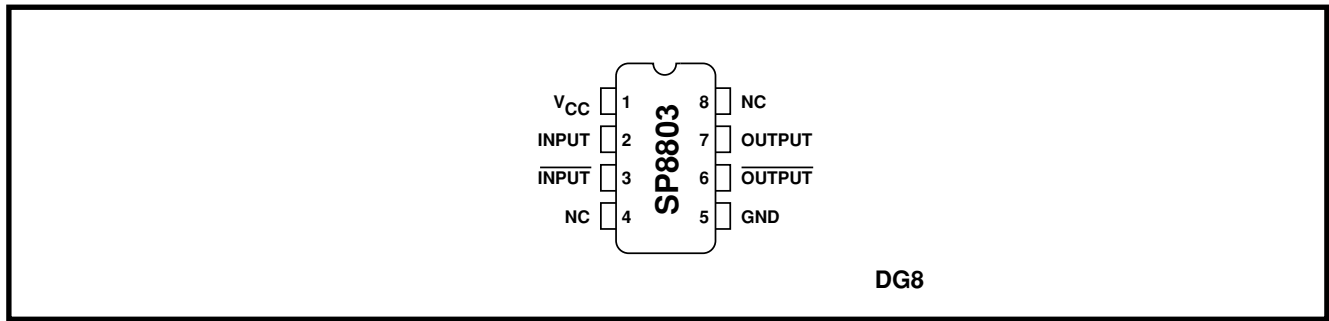


Figure 2 Pin connections

Electrical Characteristics

Guaranteed over the temperature range T_{amb} -55°C to $+125^{\circ}\text{C}$ (see note) and supply voltage range 4.75V to 5.25V. Tested at $T_{amb} = -55^{\circ}\text{C}$ and $+125^{\circ}\text{C}$, $V_{CC} = 4.75\text{V}$ and 5.25V .

Characteristic	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current	1		78	90	mA	$V_{CC} = 5\text{V}$ RMS sinewave measured in 50 ohm system. See Figs. 3 & 4
Input sensitivity 0.65GHz to 2.8GHz	2, 3			175	mV	
Input sensitivity 3.3GHz	2, 3			400	mV	
Input impedance (series equivalent)	2, 3		50	2	Ω pF	
Output Voltage with $f_{in} = 650\text{MHz}$	6, 7	0.815	1.09	1.36	Vp-p	$V_{CC} = 5\text{V}$
Output Voltage with $f_{in} = 3\text{GHz}$	6, 7		1.03		Vp-p	$V_{CC} = 5\text{V}$ load as Fig. 4

NOTE: Devices must be used with a suitable heatsink to maintain chip temperature below 175°C when operating at $T_{amb} > 105^{\circ}\text{C}$.

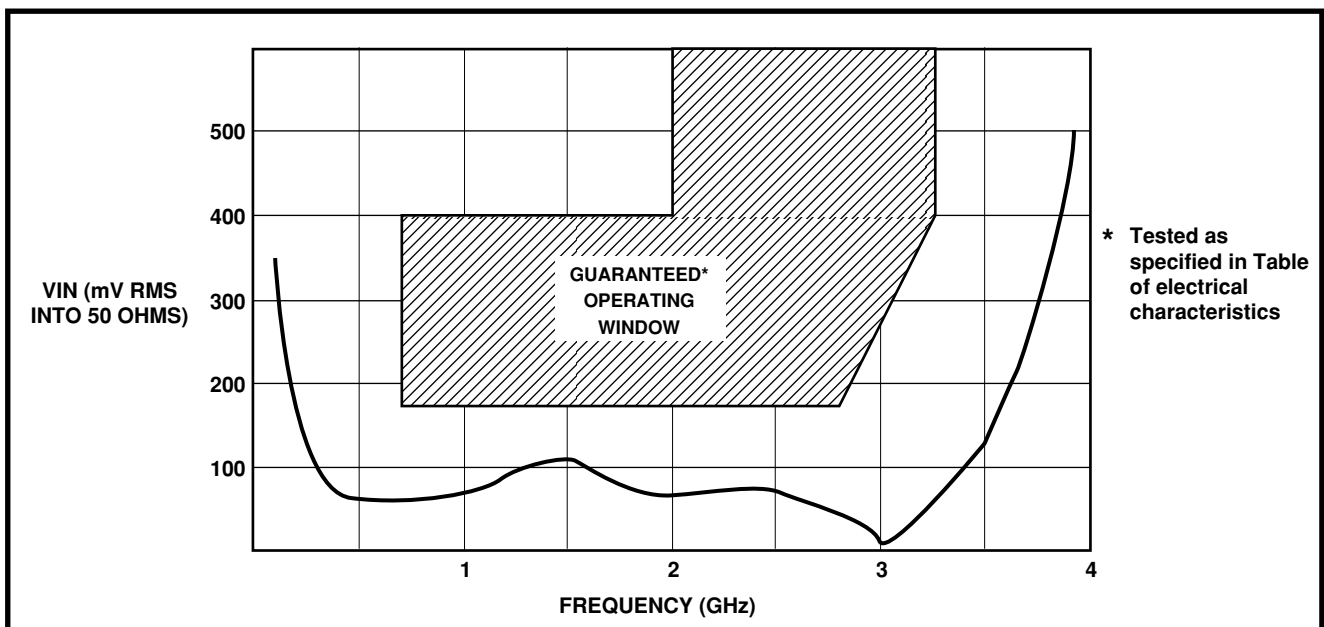


Figure 3 Typical input sensitivity

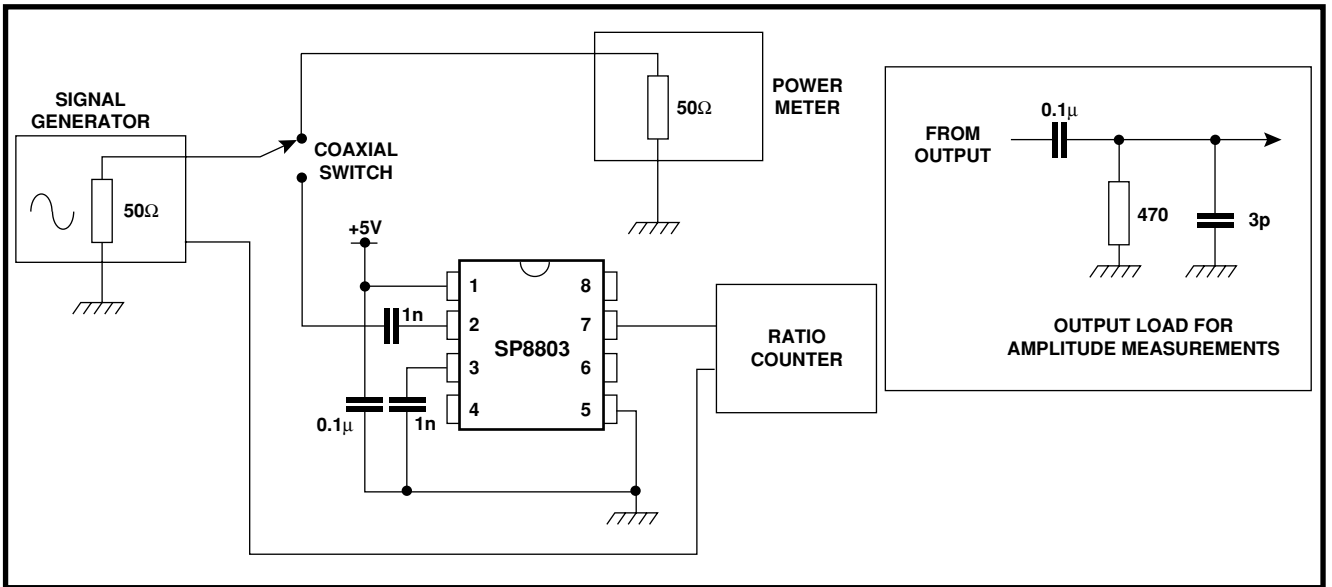


Figure 4 Test circuit

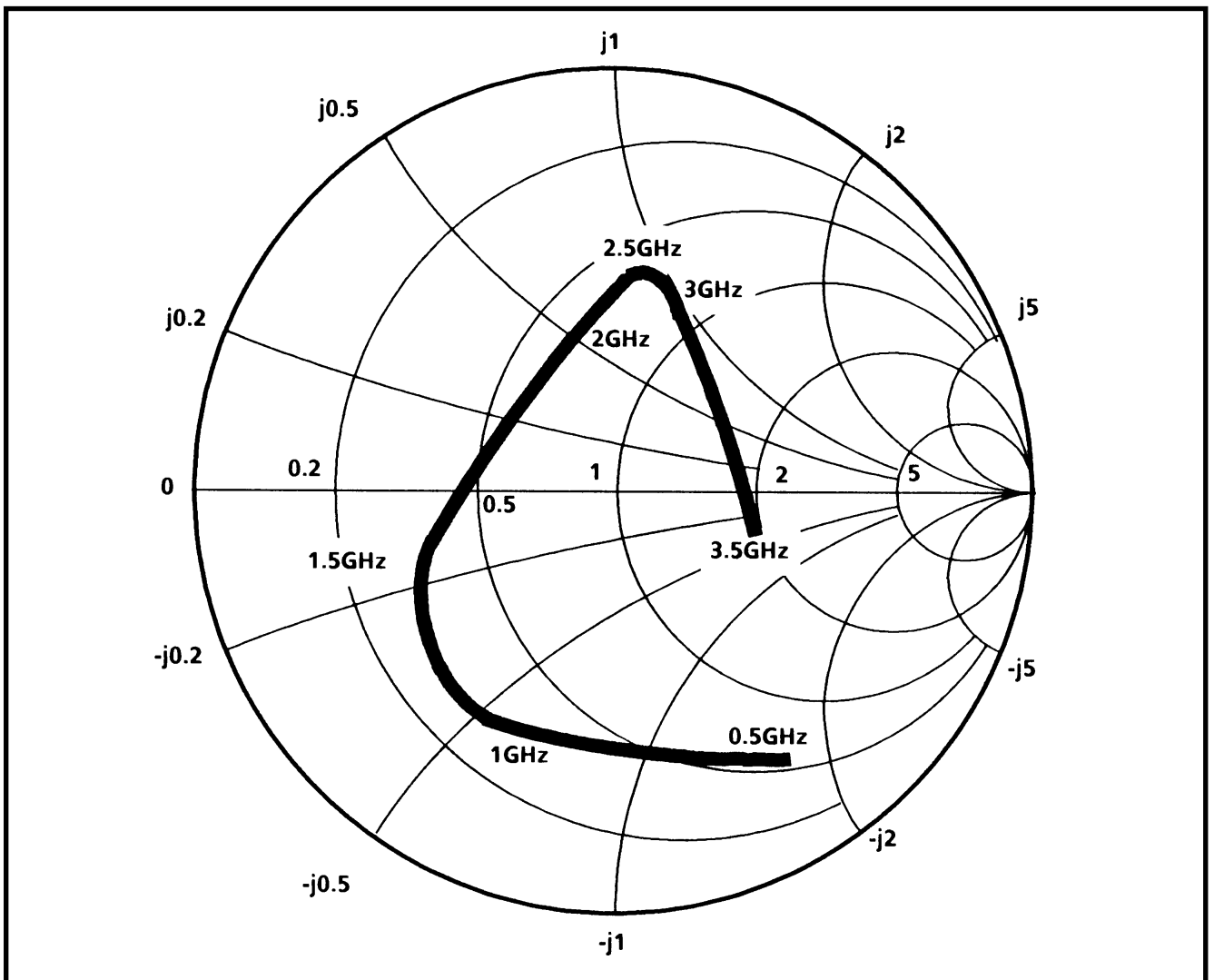


Figure 5 Typical input impedance



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