

SP8804

3.3GHz ÷4 FIXED MODULUS DIVIDER (Supersedes May 1991 Professional Products I.C. Handbook)

The SP8804 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 -140dBc/Hz at 10kHz)
- Specified Over the Full Military Temperature Range
- Low Power Dissipation 370mW (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

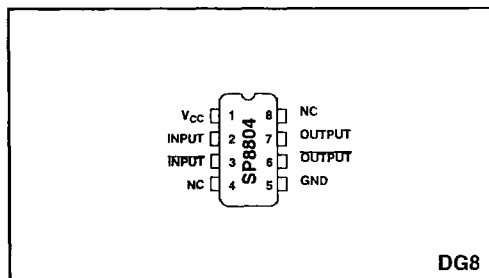


Fig. 1 Pin connections top view

THERMAL CHARACTERISTICS

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

ORDERING INFORMATION

SP8804/A/DG Military temperature range
SP8804/AC/DG Military (MIL STD 883C) class B compliant. (Contact GPS for DATA Sheet)

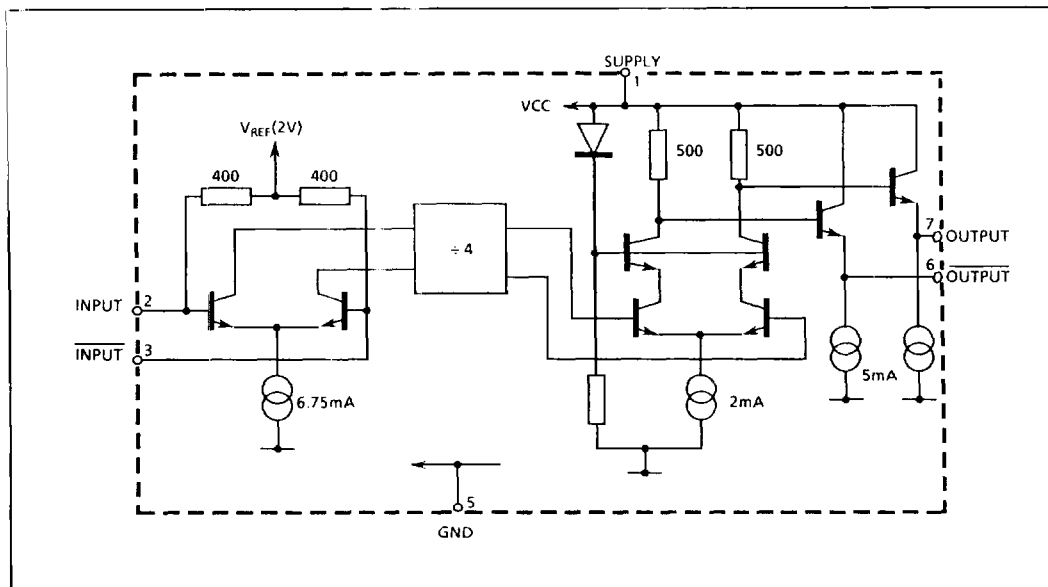


Fig.2 SP8804 Block diagram

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 +105°C, V_{CC} = 4.75V and 5.25V.

Characteristic	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current	1		74	90	mA	$V_{CC} = 5V$
Input sensitivity 0.65GHz to 2.8GHz 3.3GHz	2,3			175 400	mV mV	RMS sinewave. measured in 50 ohm system. see Figs.3&4
Input impedance (series equivalent)	2,3		50		Ω	
Output voltage with $f_{in} = 1000MHz$	6,7	0.8	2		pF	$V_{CC} = 5V$
Output voltage with $f_{in} = 3GHz$	6,7		1 0.25		Vp-p 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 $T_{AMB} > 105^\circ C$

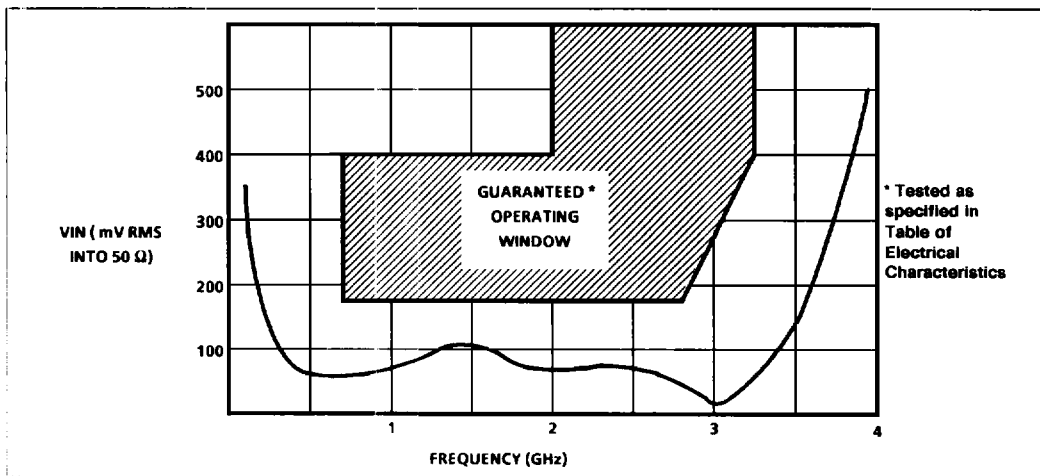


Fig. 3 typical input sensitivity

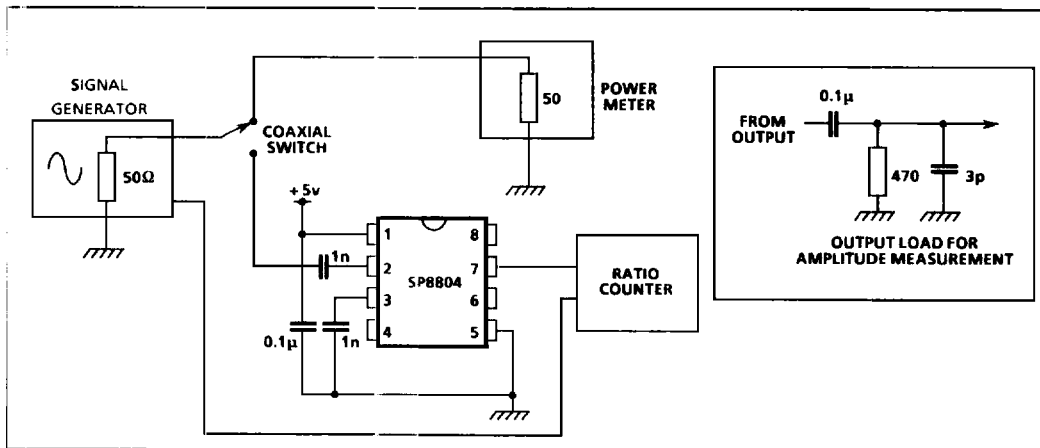


Fig. 4 Test circuit

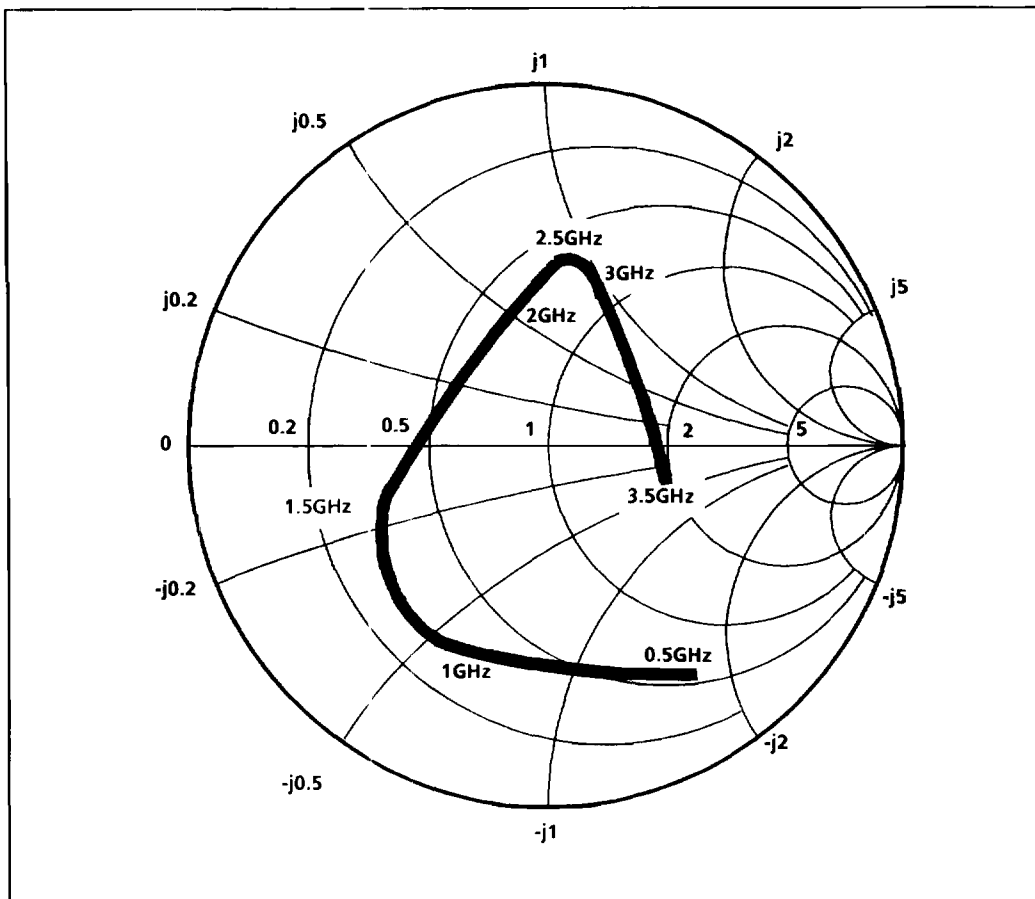


Fig. 5 Typical input impedance