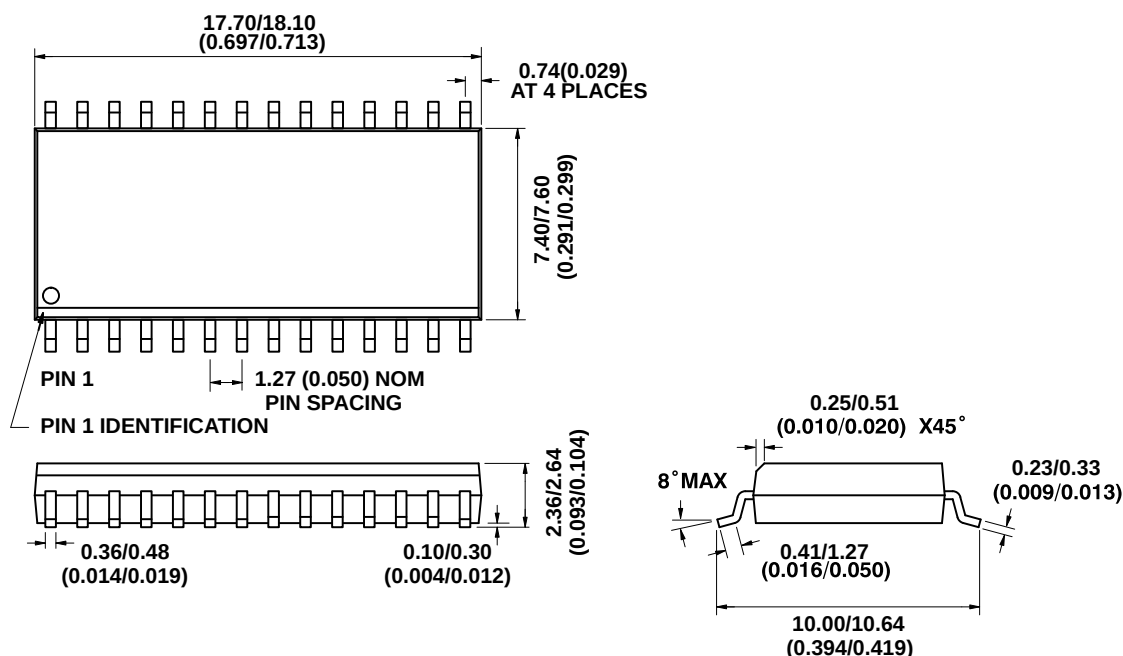


PACKAGE DETAILS

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

28 LEAD MINIATURE PLASTIC MP28



HEADQUARTERS OPERATIONS

GEC PLESSEY SEMICONDUCTORS

Cheney Manor, Swindon,
Wiltshire SN2 2QW, United Kingdom.
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GEC PLESSEY SEMICONDUCTORS

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Scotts Valley, California 95066-0017,
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Fax: (1) 64 46 06 07
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- **NORTH AMERICA** Scotts Valley, USA
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- **SWEDEN** Stockholm Tel: 46 8 7029770 Fax: 46 8 6404736
- **UK, EIRE, DENMARK, FINLAND & NORWAY**
Swindon Tel: (0793) 518510 Fax: (0793) 518582

These are supported by Agents and Distributors in major countries world-wide.

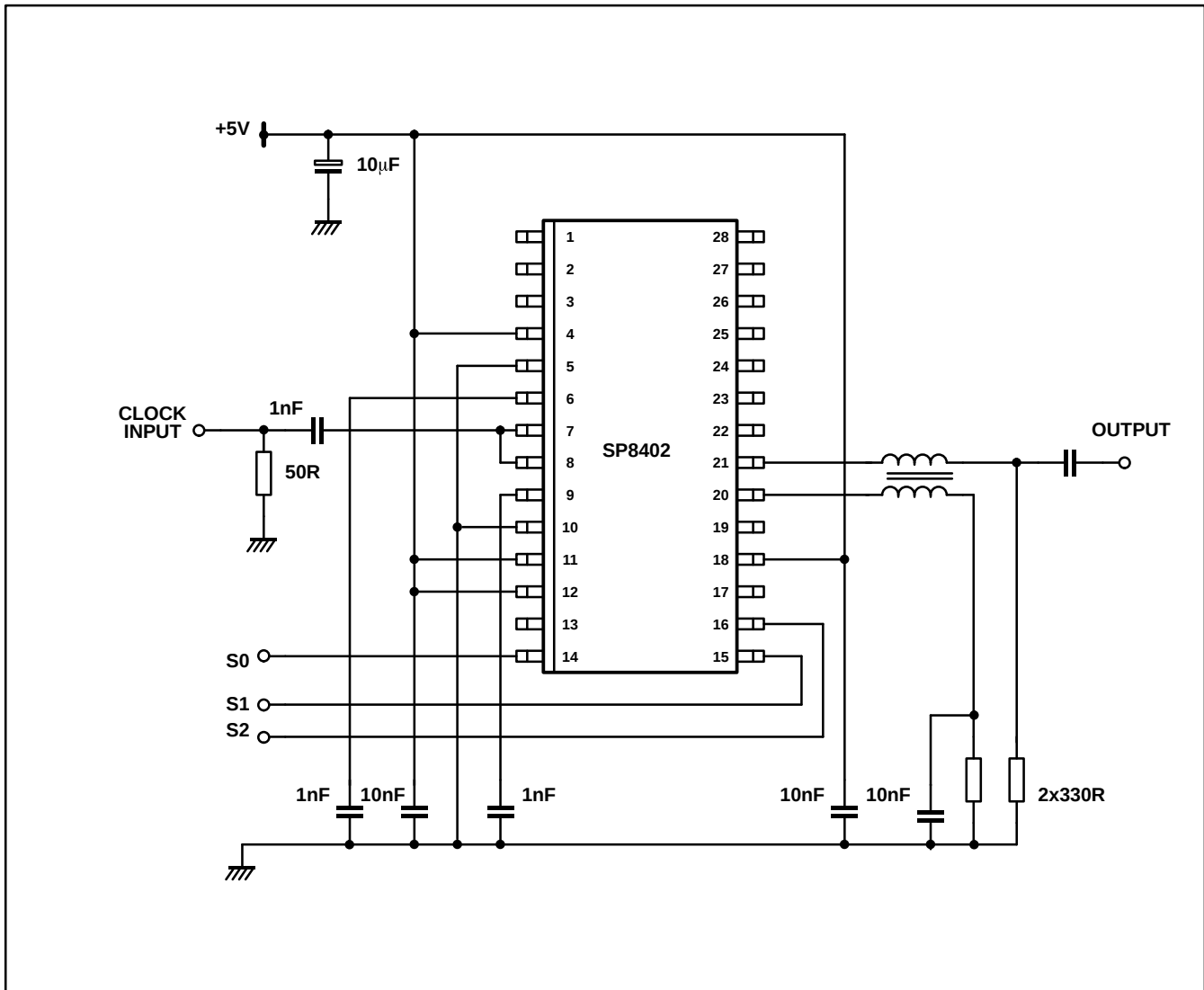


Fig. 6 Typical application – outputs combined in balun

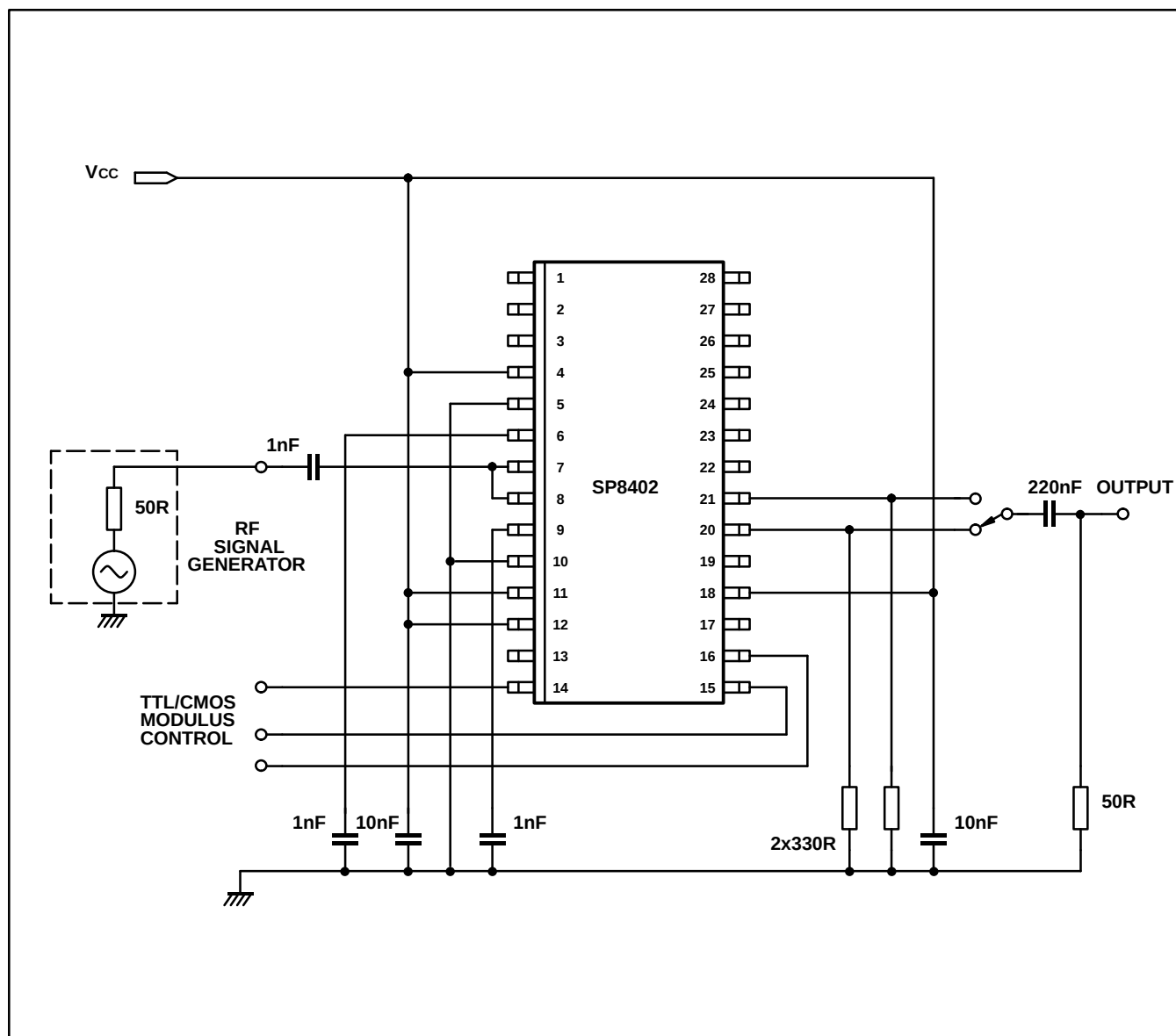


Fig. 5 Test circuit

ELECTRICAL CHARACTERISTICSGuaranteed over : Supply Voltage $V_{CC} = +4.75V$ to $+5.25V$ Temperature $T_{amb} = -10^{\circ}C$ to $+75^{\circ}C$ Tested at $+4.75V$ and $+5.25V$ at $T_{amb} = +25^{\circ}C$

Characteristics	Pin	Value			Units	Conditions
		Min	Typ	Max		
Supply current	4,11,12,18	82	92	102	mA	Outputs loaded with 330R See Fig.5
Output voltage swing	20,21	320	410		mV	p-p @ 1.4GHz input ÷ 256 mode outputs loaded with 330R See Fig. 5
Input sensitivity 200MHz to 1.4GHz	7,8			140 (-4)	mV dBm	RMS Sine wave into 50 Ohms (dBm equivalent) See Fig. 3
DATA INPUTS						
Logic high voltage		2.2			V	
Logic low voltage				0.8	V	
Input current				180	μA	5V Data input voltage

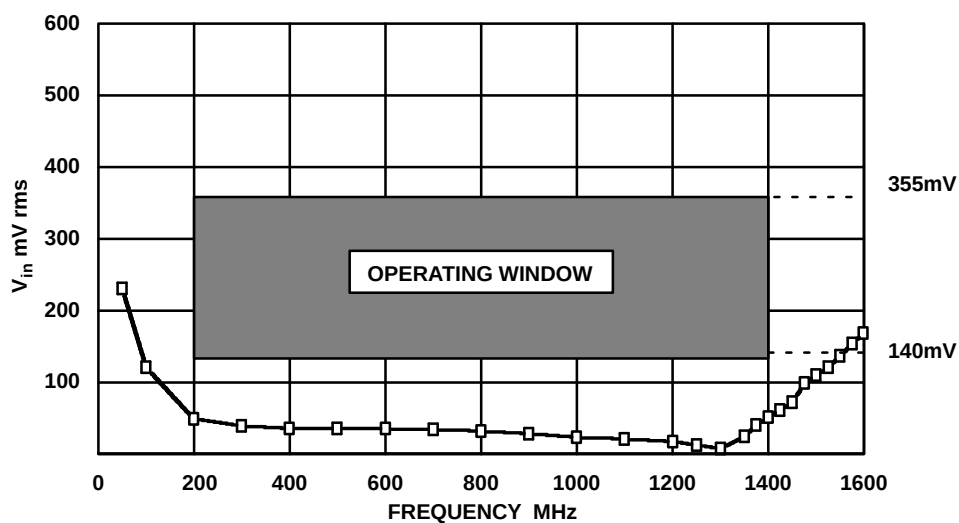


Fig.3 Typical input sensitivity

S0	S1	S2	DIVISION RATIO
L	L	L	2
H	L	L	4
L	H	L	8
H	H	L	16
L	L	H	32
H	L	H	64
L	H	H	128
H	H	H	256

Fig. 4 Truth table

SP8402

VERY LOW PHASE NOISE DIVIDE BY 2^N

The SP8402 is a very low phase noise divider which divides by powers of two. The S0, S1, S2 data inputs select the division ratio in the range 2^1 to 2^8 . Special circuits techniques have been used to reduce the phase noise considerably below that produced by standard dividers. The data inputs are CMOS or TTL compatible.

The SP8402 is packaged in a 28 pin plastic SO package to be compatible with the SP8400 and SP8401 devices.

FEATURES

- Very low Phase Noise (Typically -155 to 160dBc/Hz at 1kHz offset)
- Supply Voltage 5V

ABSOLUTE MAXIMUM RATINGS

Supply Voltage	6.5V
Output Current	20mA
Storage Temperature Range	-55°C to $+125^\circ\text{C}$
Maximum Clock Input Voltage	2.5V p-p

ORDERING INFORMATION

SP8402 KG MPES (Commercial Grade)

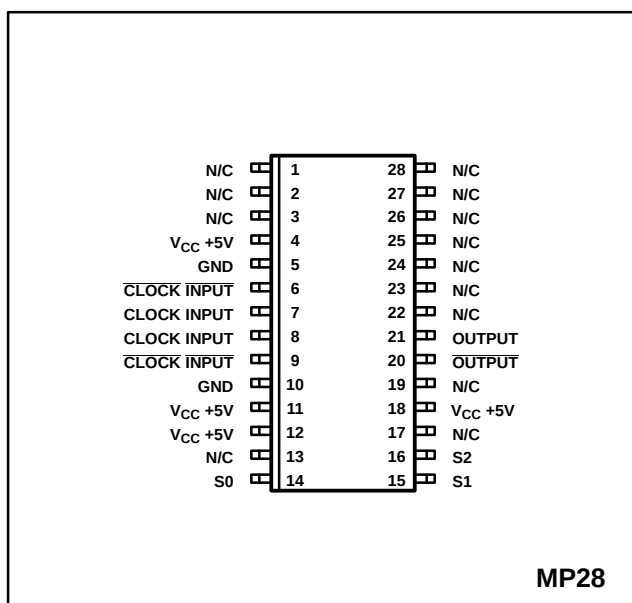


Fig. 1 Pin connections – top view

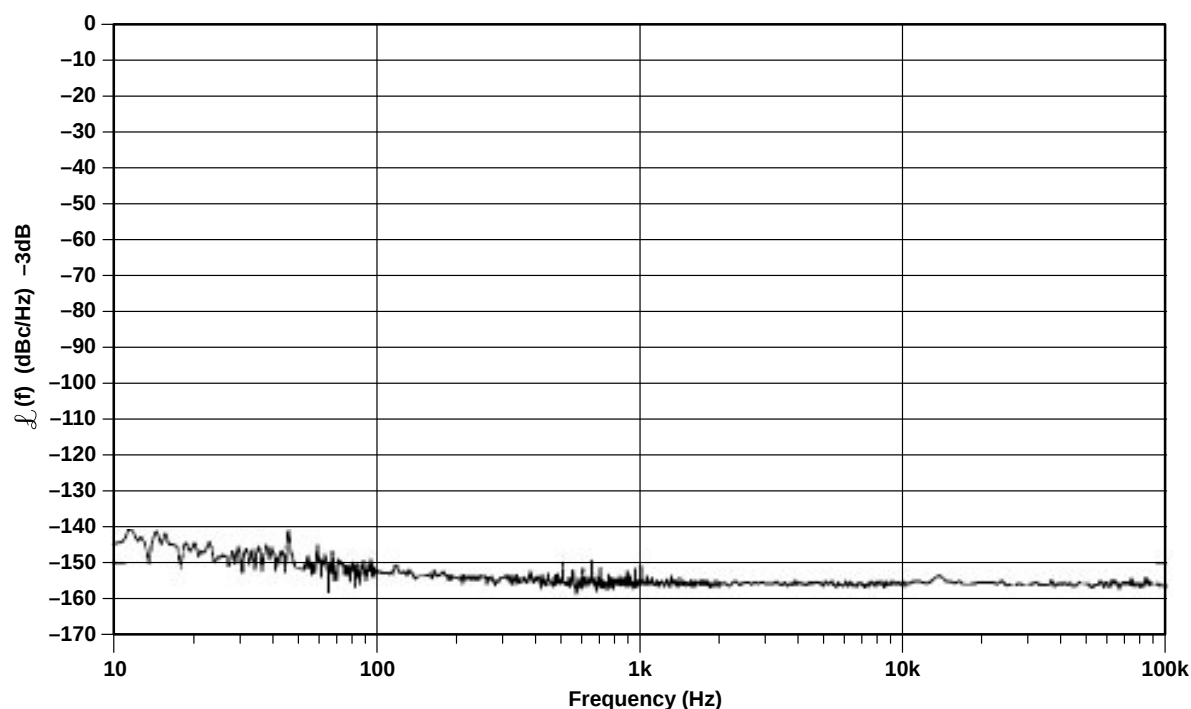


Fig. 2. Typical single sideband phase noise measured at 768MHz