

Ceramic Balun RF Transformer

NCS1.5-232+

50Ω 400 to 2300 MHz 1:1.5 Ratio

Features

- wideband, 400 to 2300 MHz
- low phase unbalance, 5 deg. and amplitude unbalance, 0.9 dB typ.
- miniature size 0805 (2.0x1.25mm)
- LTCC construction
- low cost
- aqueous washable

Applications

- WCDMA
- WLAN
- PCS
- UHF
- GPS
- LTE
- ISM
- Cellular



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-9

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 4000

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (secondary/primary)			1.5		
Frequency Range		400	—	2300	MHz
Insertion Loss ¹	400 - 2300	—	1.2	1.6	dB
Amplitude Unbalance	400 - 2300	—	0.8	1.5	dB
	1650 - 1950	—	0.5	1.0	
Phase Unbalance ²	400 - 2300	—	8	12	Degree
	1650 - 1950	—	3	8	

1. Reference Demo Board TB-626+

2. Relative to 180°

Maximum Ratings

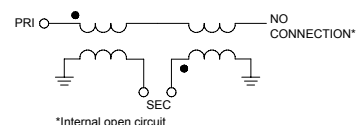
Parameter	Ratings
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power*	2W at 25°C

*Passband rating, derate linearly to 1W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

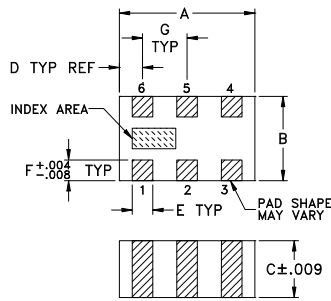
Pad Connections

Function	Pad Number
PRIMARY DOT (Unbalanced Port)	2
PRIMARY (GND)	1,3
SECONDARY DOT (Balanced)	4
SECONDARY (Balanced)	6
NO CONNECTION	5

Configuration J



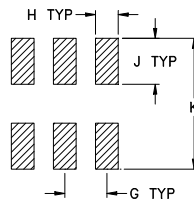
Outline Drawing



Outline Dimensions (inch/mm)

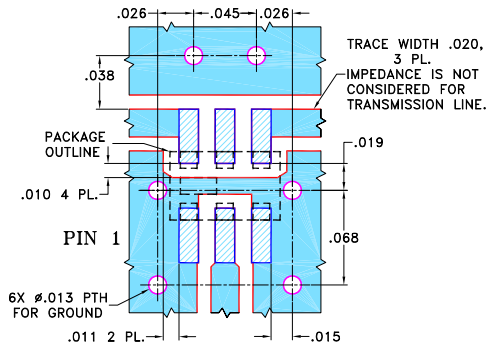
A	B	C	D	E	F
.079	.049	.033	.014	.012	.012
2.0	1.24	0.84	0.36	0.30	0.30
G	H	J	K	wt	
.026	.014	.039	.110	grams	
0.66	0.36	1.00	2.80	.008	

PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

Demo Board MCL P/N: TB-626+ Suggested PCB Layout (PL-348)



NOTES:

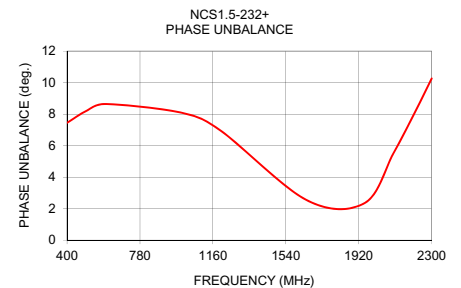
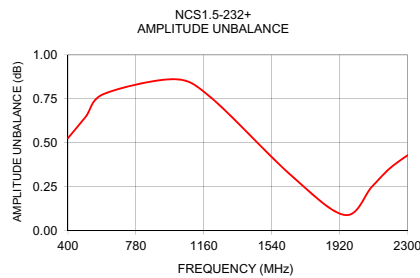
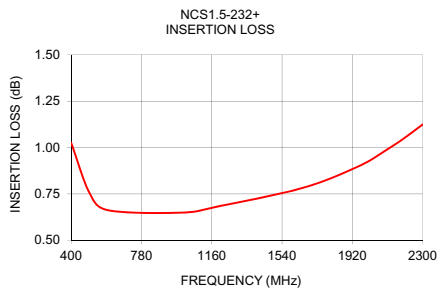
- TRACE WIDTH IS SHOWN FOR REFERENCE ONLY.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Typical Performance Data at 25°C³

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
400	1.03	11.76	0.53	7.45
500	0.75	15.77	0.65	8.20
600	0.66	18.11	0.78	8.64
1000	0.65	18.24	0.86	8.08
1200	0.68	18.23	0.76	6.96
1650	0.78	18.84	0.31	2.53
1950	0.90	17.26	0.09	2.35
2100	0.98	15.94	0.25	5.50
2200	1.05	15.14	0.35	7.81
2300	1.12	14.44	0.43	10.26

3. Measured with Agilent E5071B network analyzer using impedance conversion and port extension.



Additional Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
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