



CERAMIC BALUN

RF Transformer

NCS1-332-3+

Mini-Circuits

50Ω 700 to 3300 MHz 1:1 Ratio

FEATURES

- Wideband, 700 to 3300 MHz
- Low insertion loss, 1.0 dB
- Tiny size 0805
- LTCC construction
- Low cost



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-9

APPLICATIONS

- LTE
- WLAN
- ISM
- WiFi

+RoHS Compliant

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

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio			1		
Frequency Range		700		3300	MHz
Insertion Loss ¹ (average)	700 - 3300	—	0.9	1.8	dB
	1500 - 2700	—	0.7	—	
Amplitude Unbalance	700 - 3300	—	0.5	1.5	dB
	1500 - 2700	—	0.2	—	
Phase Unbalance ²	700 - 3300	—	8	15	Degree
	1500 - 2700	—	7	—	
Input Return Loss	700 - 3300	—	13	—	dB
	1500 - 2700	—	18	—	

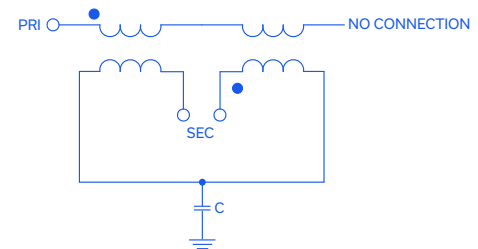
1. Reference Demo Board TB-910+ with auto port extension and impedance conversion at secondary and secondary dot.
2. Relative to 180°

MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power ³	3W at 25°C

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

CONFIGURATION R



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REV. A
ECO-010420
NCS1-332-3+
MCL NY
211101

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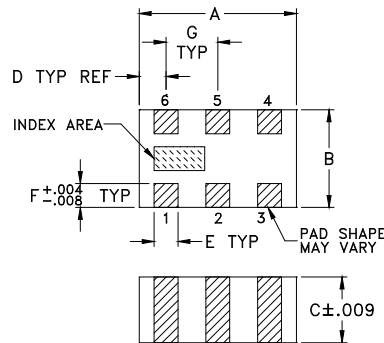


PAD CONNECTIONS

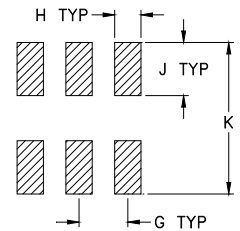
PRIMARY DOT (Unbalanced Port)	1
GND or DC feed + RF GND	2
SECONDARY DOT (Balanced)	3
SECONDARY (Balanced)	4
NO CONNECTION	6
GND	5

PRODUCT MARKING: N/A

OUTLINE DRAWING

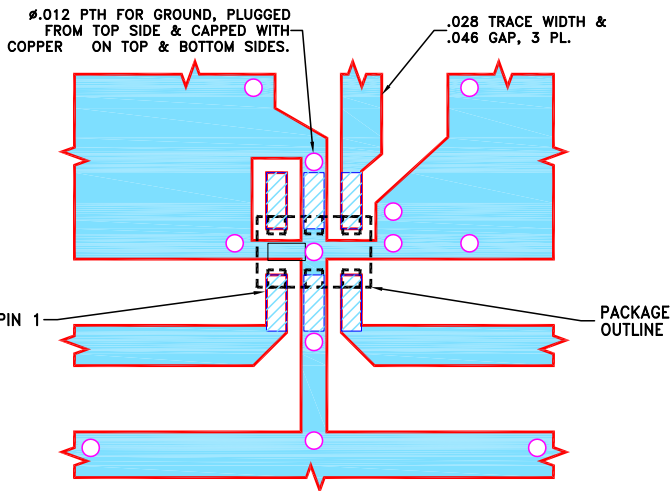


PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

DEMO BOARD MCL P/N: TB-910+ SUGGESTED PCB LAYOUT (PL-583)



NOTES:

- TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR FR4, GRADE IT-180TC (ITEQ CORP.); DIELECTRIC THICKNESS: $.016 \pm .0015$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
- 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.

OUTLINE DIMENSIONS (Inches/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	

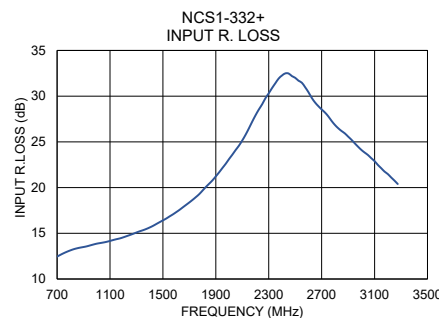
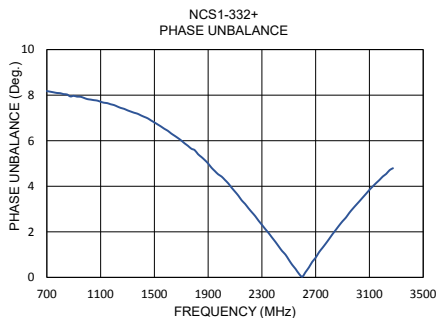
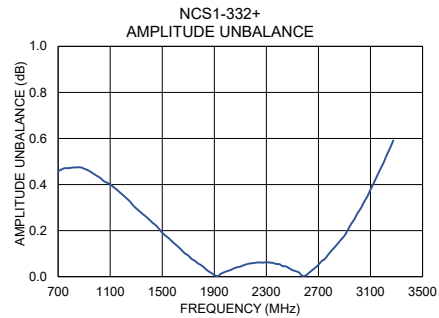
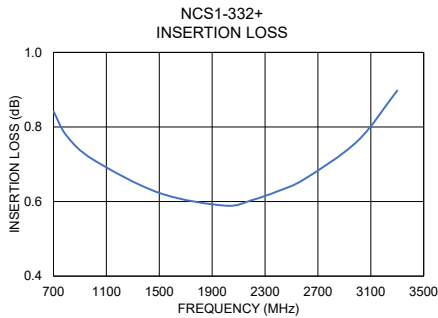
TAPE & REEL INFORMATION: F74



TYPICAL PERFORMANCE DATA³

Frequency (MHz)	Insertion Loss (dB)	Input Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)
700	0.84	12.45	0.46	8.18
800	0.78	13.13	0.47	8.09
1000	0.71	13.87	0.44	7.83
1500	0.62	16.41	0.19	6.80
2000	0.59	23.12	0.02	4.43
2200	0.60	27.91	0.06	3.04
2400	0.63	32.26	0.05	1.56
2600	0.66	30.44	0.00	0.03
3000	0.76	24.12	0.28	3.18
3300	0.90	20.03	0.63	4.92

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



- NOTES**
- A. 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.
 - B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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