

Ceramic Balun RF Transformer

50Ω 4700 to 12000 MHz

NCR2-123-2+



CASE STYLE: NF1846-1

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Input RF Power	3W
Permanent damage may occur if any of these limits are exceeded.	

Pad Connections

PRIMARY DOT (Unbalanced Port)	2
SECONDARY DOT (Balanced)	6
SECONDARY (Balanced)	4
GND Externally	1,3,5

Features

- wideband, 4700 to 12000 MHz
- miniature size, 0.079"x0.098"x0.035"
- LTCC construction
- low cost
- aqueous washable

Applications

- Point to Point
- ISM
- Radio navigation
- SATCOM

+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.	Unit
Impedance Ratio (secondary/primary)			2		
Frequency Range		4700	—	12000	MHz
Insertion Loss*	4700 - 12000	—	0.5	2.7	dB
Amplitude Unbalance	4700 - 12000	—	1.0	3.8	dB
Phase Unbalance†	4700 - 12000	—	8	20	Degree

* Insertion Loss is referenced to mid-band loss, 0.50 dB. Reference Demo Board TB-745+.

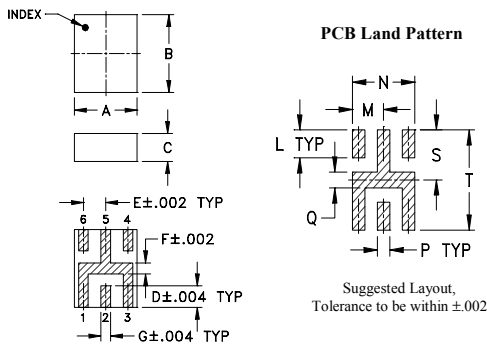
† Relative to 180°

Typical Performance Data at 25°C

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
4700.0	0.52	9.46	0.80	8.92
5460.0	0.08	14.97	0.45	11.65
6200.0	0.03	17.09	0.40	11.89
6960.0	0.09	15.34	0.45	9.42
7700.0	0.20	13.45	0.37	4.87
8460.0	0.31	12.30	0.02	0.91
9200.0	0.39	11.94	0.15	0.55
9960.0	0.40	13.10	0.40	1.26
10700.0	0.36	16.87	1.34	0.34
12000.0	0.56	16.93	2.89	4.81

Product Marking: TJ

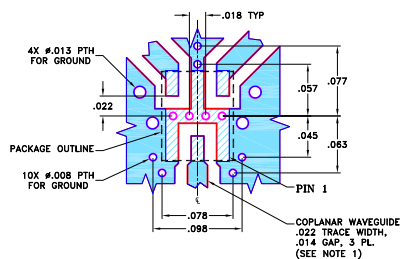
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	L
.079	.098	.035	.027	.028	.014	.014	.028
2.01	2.49	0.89	0.69	0.71	0.36	0.36	0.71
M	N	P	Q	R	S	T	wt
.035	.07	.014	.016	--	.050	.100	grams
0.89	1.78	0.36	0.41	--	1.27	0.03	0.020

Demo Board MCL P/N: TB-745+ Suggested PCB Layout (PL-425)



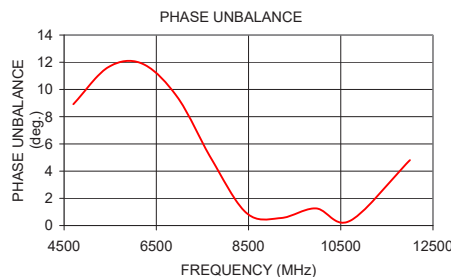
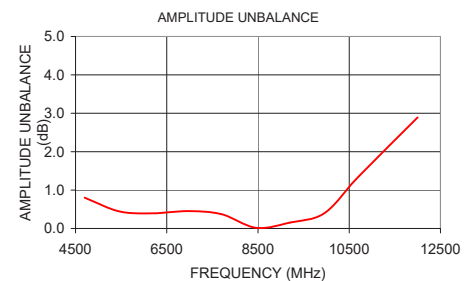
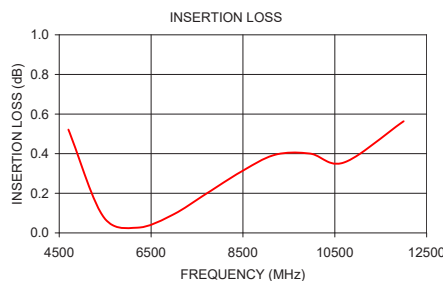
- NOTES:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .010"±.001". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Notes

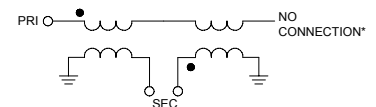
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- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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configuration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



REV. OR
ECO-002323
NCR2-123-2+
ED-16126
AVB/EC/CP/AM
200402
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