

Mini-Circuits®

CERAMIC BALUN

RF Transformer

TCW2-272+

50Ω 2100 to 2700 MHz 1:2 Ratio

FEATURES

- Wideband, 2100 to 2700 MHz
- Low phase unbalance, 5 deg. and amplitude unbalance, 0.6 dB typ.
- Miniature size 0603 (1.6x0.8mm)
- LTCC construction
- Low cost
- Aqueous washable



Generic photo used for illustration purposes only

CASE STYLE: JC0603C

+RoHS Compliant

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

APPLICATIONS

- WLAN
- WiMAX/WiBRO
- ISM
- Radar

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (Secondary/Primary)		2			
Frequency Range		2100	—	2700	MHz
Avg. Insertion Loss ¹	2400 - 2500	—	1.1	1.4	dB
	2100 - 2700	—	1.3	—	
Amplitude Unbalance	2400 - 2500	—	0.6	1.4	dB
	2100 - 2700	—	0.8	—	
Phase Unbalance ²	2400 - 2500	—	4	10	Degree
	2100 - 2700	—	8	—	

1. Reference demo board TB-793+.

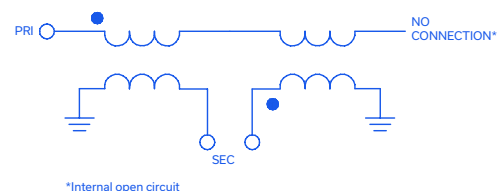
2. Relative to 180°

MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power ³	2W

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

CONFIGURATION J

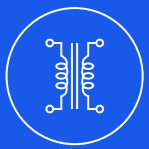


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REV. B
ECO-010443
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AVB/TD/CP/AM
211102

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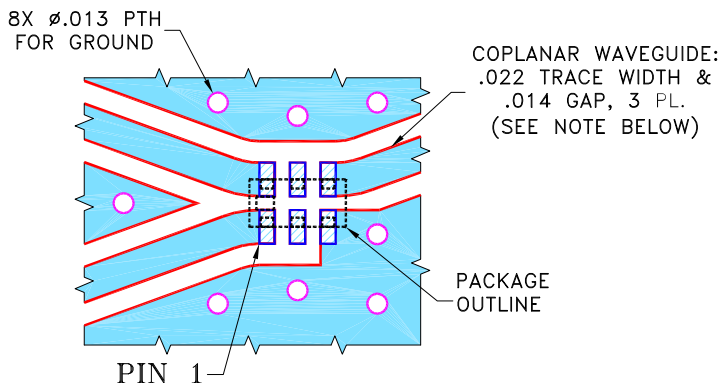
TCW2-272+

PAD CONNECTIONS

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

PRODUCT MARKING: N/A

DEMO BOARD MCL P/N: TB-793+
SUGGESTED PCB LAYOUT (PL-430)

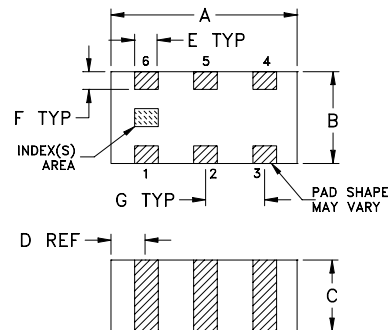


NOTES:

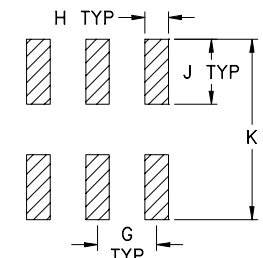
1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

OUTLINE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

OUTLINE DIMENSIONS (Inches/mm)

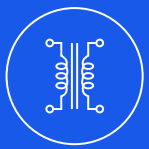
A	B	C	D	E	F
.063	.031	.024	.012	.008	.006
1.60	0.79	0.61	0.30	0.20	0.15
G	H	J	K	wt	
.020	.010	.022	.053	grams	
0.51	0.25	0.56	1.35	0.005	

TAPE & REEL INFORMATION: F114

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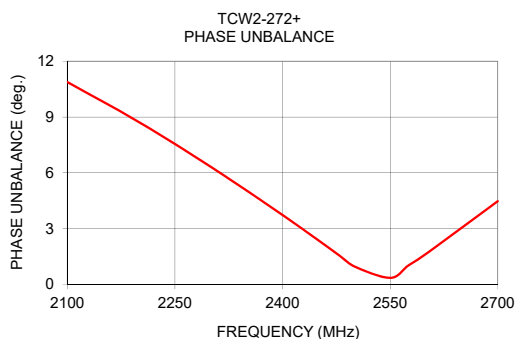
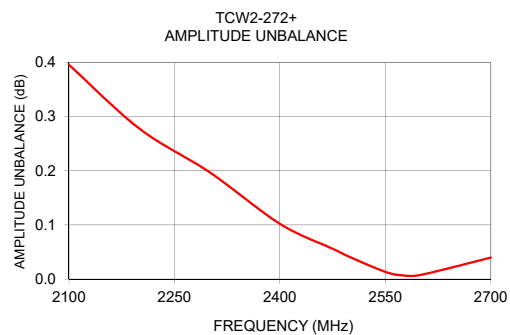
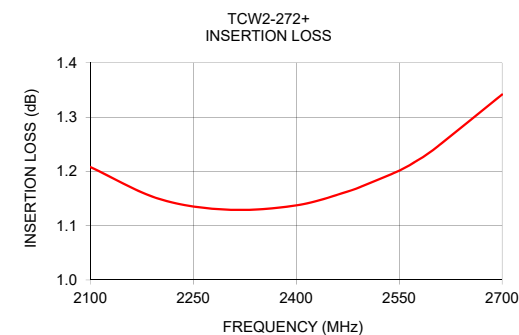
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TYPICAL PERFORMANCE DATA⁴

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)
2100	1.21	12.69	0.40	10.88
2200	1.15	13.35	0.28	8.73
2300	1.13	13.65	0.20	6.32
2400	1.14	13.52	0.10	3.73
2475	1.16	13.17	0.06	1.68
2500	1.17	13.01	0.04	0.97
2550	1.20	12.68	0.01	0.35
2575	1.22	12.51	0.01	1.01
2600	1.24	12.32	0.01	1.64
2700	1.34	11.34	0.04	4.47

4. 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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