CERAMIC BALUN

RF Transformer

TCW1-392+

50Ω 3300 to 3900 MHz 1:1 Ratio

FEATURES

- Miniature Size 0603 (1.6 × 0.8 mm)
- LTCC Construction
- Low Cost

Generic photo used for illustration purposes only

CASE STYLE: JC0603C

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- LTE
- 5G
- A/D Conversion

ELECTRICAL SPECIFICATIONS AT +25 °C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			1		
Frequency Range		3300		3900	MHz
Avg. Insertion Loss[1]	3300–3900	–	0.8	1.5	dB
Amplitude Unbalance	3300–3900	–	0.6	1.5	dB
Phase Unbalance[2]	3300–3900	–	5	15	Degree
VSWR	3300–3900	–	1.7	–	(:1)

1. Reference demo board TB-TCW1-392+.
2. Relative to 180°.

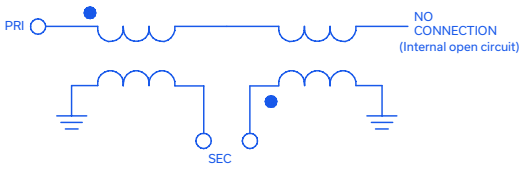
ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55 °C to +100 °C
Storage Temperature	-55 °C to +100 °C
RF Power Input[3]	1 W at +25 °C

3. Passband rating.

Permanent damage may occur if any of these limits are exceeded.

CONFIGURATION J



REV. D
ECO-030282
TCW1-392+
MCL NY
260630

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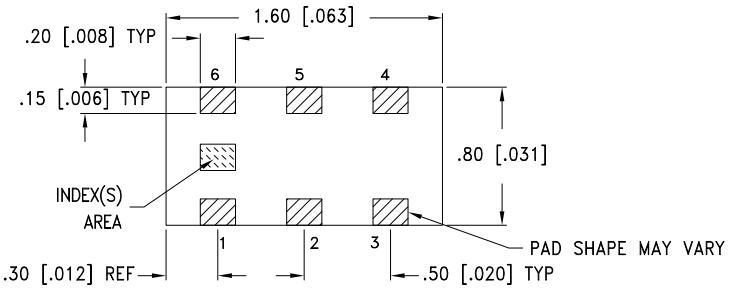
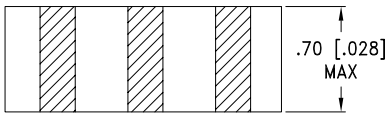
PAD CONNECTIONS

PRIMARY DOT	1
RF GROUND	2
SECONDARY DOT	4
SECONDARY	3
NO CONNECTION	6
RF GROUND	5

OUTLINE DRAWING





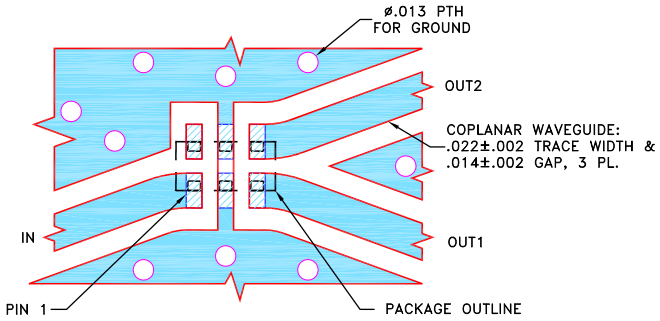
METALLIZATION

Weight: .005 grams
Dimensions are in mm [inch]. Tolerances: ±0.13 mm

PRODUCT MARKING: N/A

DEMO BOARD MCL P/N: TB-TCW1-392+

SUGGESTED PCB LAYOUT (PL-513)



1. TRACE WIDTH AND GAP PARAMETERS ARE 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.

TAPE & REEL INFORMATION: F114

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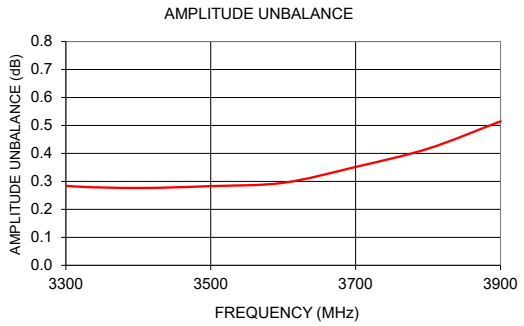
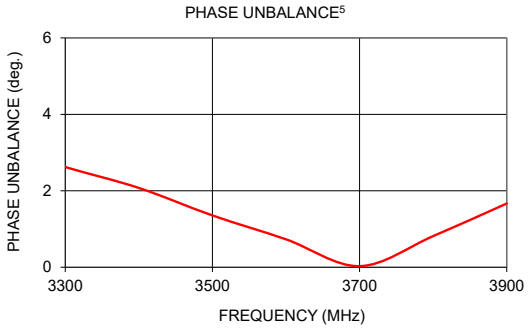
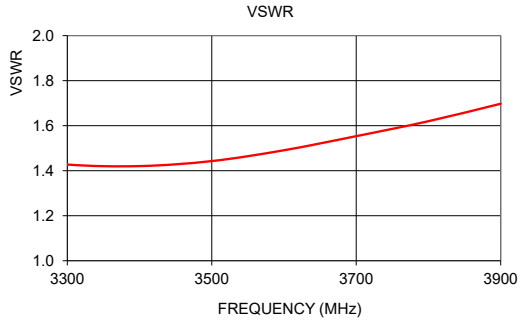
TYPICAL PERFORMANCE DATA[4]

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Amplitude Unbalance (dB)	Phase Unbalance[5] (deg)
3300	1.07	1.43	0.28	2.62
3200	1.10	1.47	0.31	3.22
3300	1.07	1.43	0.28	2.62
3400	1.06	1.42	0.28	2.07
3500	1.08	1.44	0.28	1.36
3600	1.10	1.49	0.29	0.73
3700	1.14	1.55	0.35	0.03
3800	1.18	1.62	0.42	0.81
3900	1.24	1.70	0.51	1.67

4. Measured with Agilent N5242A network analyzer using impedance conversion and port extension.
5. Relative to 180°.







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-Circuits' applicable established test performance criteria and measurement instructions.
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