



Mini-Circuits

MMIC SURFACE MOUNT

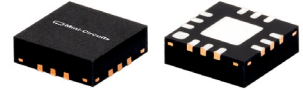
Power Splitter/Combiner

WP4N+

4 Way-0° 50Ω 1215 to 1900 MHz

FEATURES

- Excellent Isolation, Typ. 23 dB
- Excellent Phase Unbalance, Max. 5 deg.
- Excellent Amplitude Unbalance, Max. 0.5 dB
- Small Size, 3x3 mm
- High ESD Level
- Aqueous Washable



Generic photo used for illustration purposes only

CASE STYLE: DQ1225

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

APPLICATIONS

- GPS
- WCDMA
- PCS

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1215		1900	MHz
Insertion Loss* (Above 6.0 dB)	1215-1900		0.7	1.9	dB
Isolation	1215-1900	14	23		dB
Amplitude Unbalance	1215-1900			0.5	dB
Phase Unbalance	1215-1900			5	deg.
VSWR (Port S)	1215-1900		1.5		:1
VSWR (Ports 1,2,3,4)	1215-1900		1.4		:1

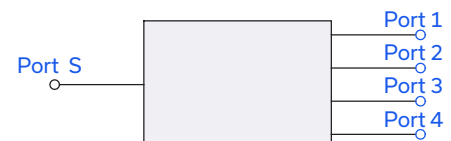
* Includes fixture loss, 0.15 dB typ. Max value increases to 2.5 dB below 1315 MHz.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C
Power Input (as a Splitter)	1.5 W max.
Internal Dissipation	0.375 W max.

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

ELECTRICAL SCHEMATIC



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www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. F
ECO-026468
WP4N+
MCL NY
250806

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OUTLINE DRAWING

SUM PORT	2
PORT 1	12
PORT 2	10
PORT 3	6
PORT 4	4
GROUND	1,3,5,7,8,9,11, Paddle

[illegible]

1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020" ± .0015"; 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.
3. SIGNAL TRACES ARE NOT ALLOWED INSIDE HATCHED AREAS (APPROX. .030 X .030) AT 4 PLACES AS SHOWN.

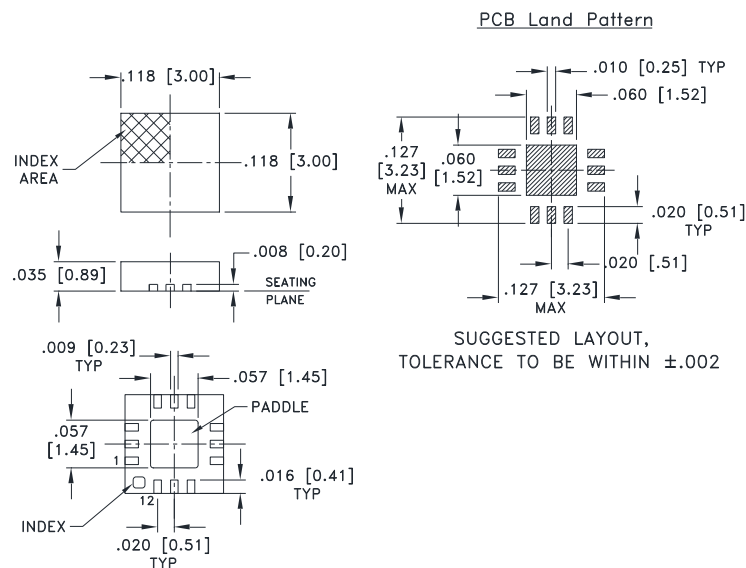
-  DENOTES PCB COPPER LAYOUT WITH SMOBC
 (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

The diagram shows a black rectangular label with white text. The text is arranged in four lines: a small white circle, the text 'MCL', 'WP4N', and 'XXXX'. Annotations with arrows point to specific parts of the label:

- An arrow points from the word 'Index' to the small white circle.
- An arrow points from the text 'Black Body' to the word 'MCL'.
- An arrow points from the text 'Model Family Designation' to the text 'XXXX'.

Marking may contain other features or characters for internal lot control.

OUTLINE DRAWING



Weight: .02 Grams
Dimensions are in inches [mm]. Tolerances in inches: 2 Pl. $\pm .01$; 3 Pl. $\pm .004$ inches

TAPE & REEL INFORMATION: F66



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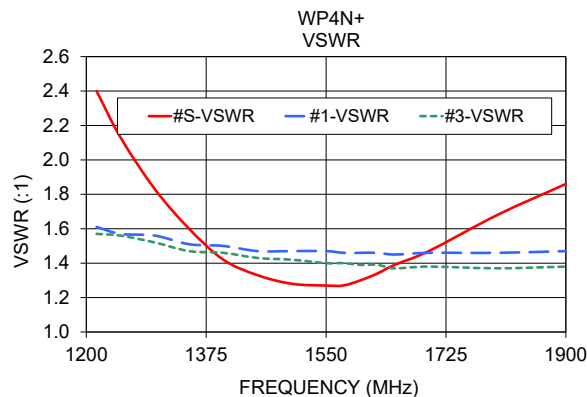
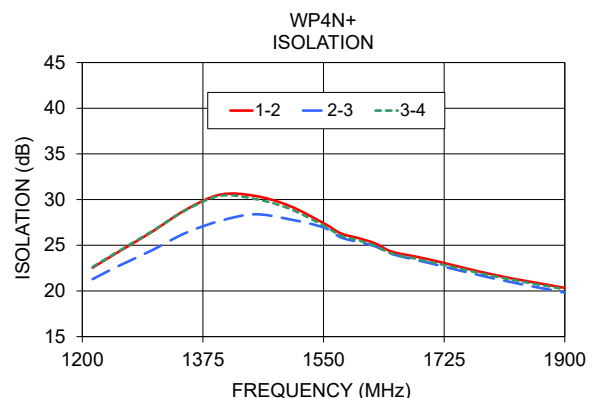
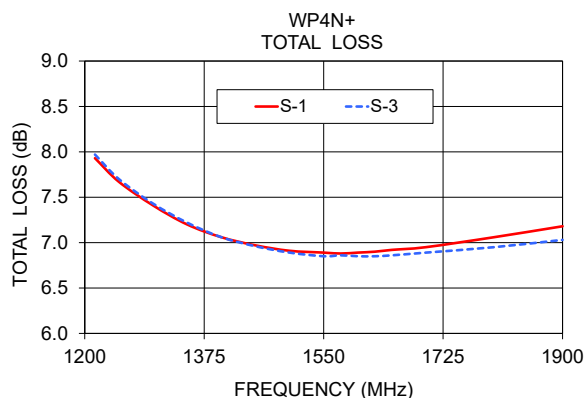
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4 Way-0° 50Ω 1215 to 1900 MHz

TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Total Loss ¹ (dB)				Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	2-3	3-4						
1215.0	7.93	7.96	7.97	7.89	0.07	22.55	21.29	22.63	0.99	2.40	1.61	1.57	1.57	1.54
1250.0	7.67	7.69	7.70	7.64	0.06	24.17	22.64	24.24	0.77	2.13	1.57	1.57	1.56	1.52
1300.0	7.41	7.43	7.43	7.37	0.06	26.42	24.41	26.49	0.54	1.83	1.56	1.54	1.52	1.48
1350.0	7.20	7.21	7.22	7.17	0.05	28.88	26.35	28.83	0.28	1.60	1.51	1.50	1.47	1.45
1400.0	7.06	7.05	7.06	7.02	0.04	30.54	27.67	30.41	0.30	1.42	1.50	1.49	1.46	1.43
1450.0	6.97	6.95	6.96	6.94	0.03	30.41	28.39	30.08	0.45	1.33	1.47	1.47	1.43	1.41
1500.0	6.91	6.88	6.89	6.87	0.04	29.33	27.85	29.02	0.63	1.28	1.47	1.42	1.42	1.40
1550.0	6.89	6.84	6.85	6.85	0.04	27.42	26.95	27.16	0.98	1.27	1.47	1.44	1.40	1.39
1575.0	6.88	6.84	6.86	6.85	0.04	26.30	25.87	26.06	1.09	1.27	1.46	1.40	1.40	1.39
1600.0	6.89	6.84	6.85	6.87	0.05	25.79	25.36	25.55	1.07	1.30	1.46	1.39	1.39	1.38
1625.0	6.90	6.84	6.85	6.87	0.06	25.20	24.88	24.95	1.20	1.34	1.46	1.37	1.39	1.38
1650.0	6.92	6.84	6.86	6.87	0.08	24.28	24.03	24.07	1.27	1.39	1.45	1.39	1.37	1.38
1700.0	6.95	6.87	6.89	6.92	0.08	23.50	23.12	23.27	1.65	1.47	1.46	1.39	1.38	1.39
1800.0	7.06	6.95	6.95	7.02	0.12	21.72	21.31	21.57	2.01	1.68	1.46	1.36	1.37	1.42
1900.0	7.18	7.03	7.03	7.11	0.15	20.33	19.82	20.18	2.53	1.86	1.47	1.35	1.38	1.43

1. Total Loss = Insertion Loss + 6 dB splitter loss.



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.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

