



MMIC SURFACE MOUNT

Power Splitter/Combiner

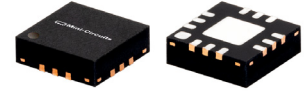
WP4L+

Mini-Circuits

4 Way-0° 50Ω 2700 to 3800 MHz

FEATURES

- Excellent Isolation, Typ. 24 dB
- Good Phase Unbalance. Max. 9 deg.
- Good 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 Compliant

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

APPLICATIONS

- WLAN
- WIMAX
- WCDMA
- Radar

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		2700		3800	MHz
Insertion Loss* (Above 6.0 dB)	2700-3800		0.7	2.1	dB
Isolation	2700-3800	16	24		dB
Amplitude Unbalance	2700-3800			0.5	dB
Phase Unbalance	2700-3800			9	deg.
VSWR (Port S)	2700-3800		1.6		:1
VSWR (Ports 1,2,3,4)	2700-3800		1.35		:1

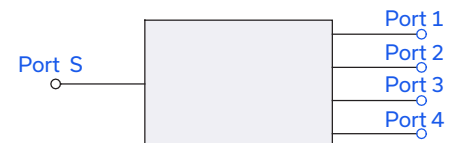
* Includes fixture loss, 0.2 dB typ.

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



REV. C
ECO-015507
WP4L+
MCL NY
250109





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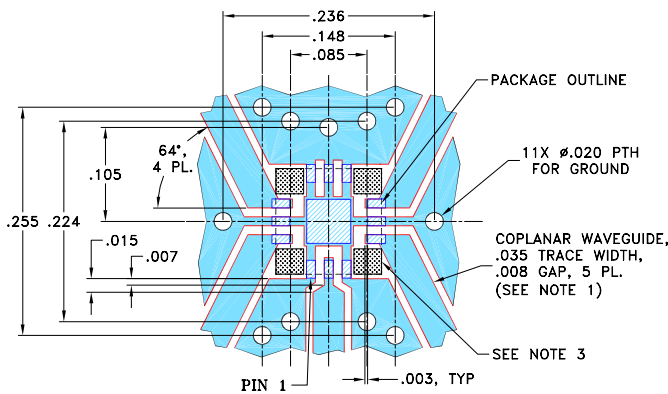
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PAD CONNECTIONS

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

**DEMO BOARD MCL P/N: TB-WP4L+
SUGGESTED PCB LAYOUT (PL-259)**

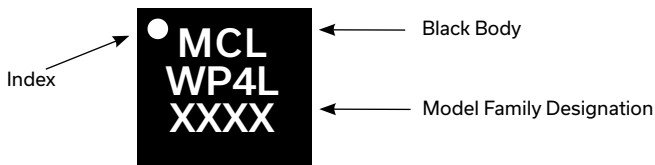


NOTES:

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.

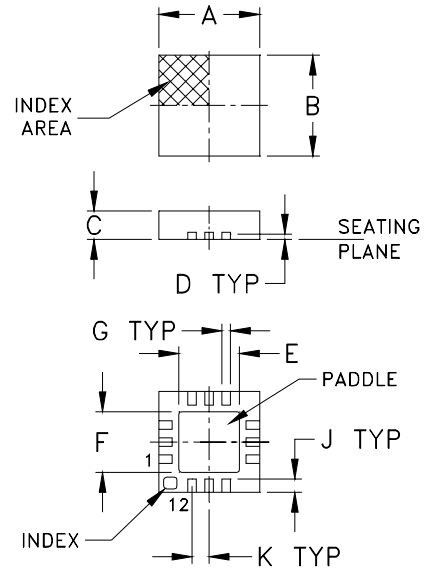
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

PRODUCT MARKING

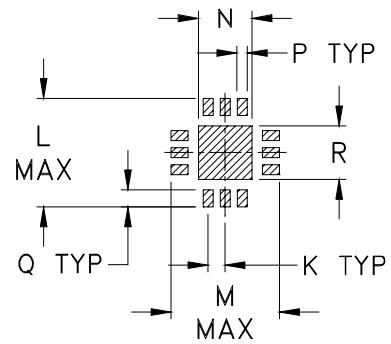


Marking may contain other features or characters for internal lot control.

OUTLINE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

OUTLINE DIMENSIONS (Inch/mm)

A	B	C	D	E	F	G	H	J
.118	.118	.035	.008	.057	.057	.009	---	.016
3.00	3.00	0.89	0.20	1.45	1.45	0.23	---	0.41
K	L	M	N	P	Q	R		wt
.020	.127	.127	.049	.010	.020	.049		grams
0.51	3.23	3.23	1.24	0.25	0.51	1.24		0.02

TAPE & REEL INFORMATION: F66

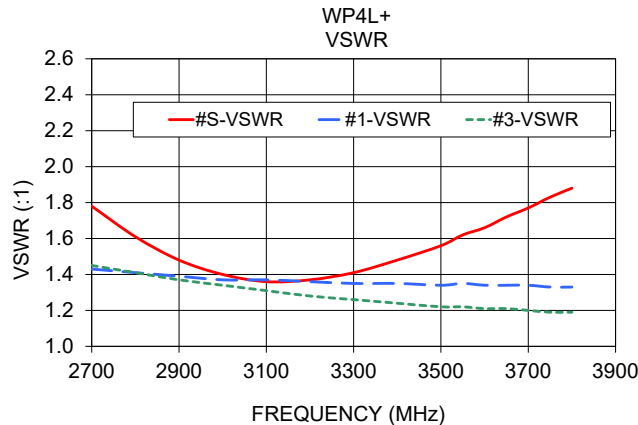
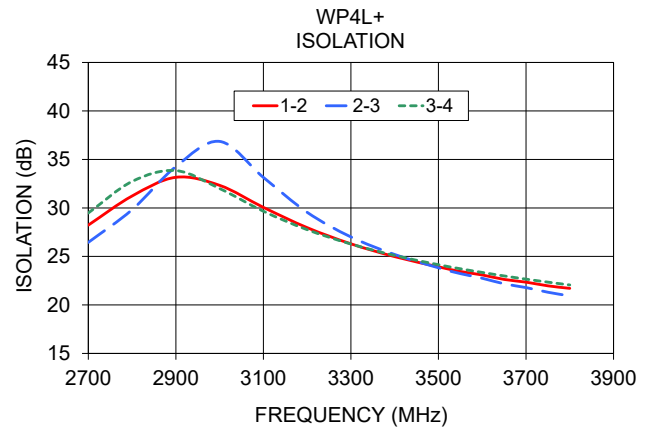
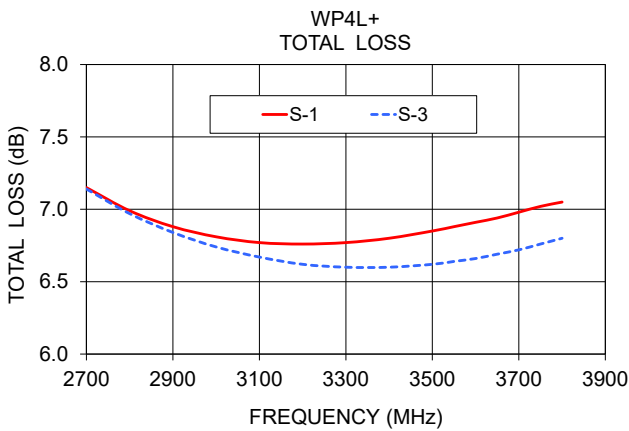




TYPICAL PERFORMANCE DATA AND CHARTS

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						
2700.00	7.15	7.19	7.14	7.10	0.09	28.23	26.45	29.48	0.92	1.78	1.43	1.46	1.45	1.40
2800.00	6.99	7.02	6.97	6.95	0.07	31.23	29.82	32.73	0.59	1.61	1.41	1.42	1.41	1.37
2900.00	6.88	6.89	6.84	6.83	0.06	33.16	34.26	33.85	0.86	1.48	1.39	1.39	1.37	1.35
3000.00	6.81	6.79	6.74	6.76	0.07	32.33	36.86	32.00	1.42	1.40	1.37	1.36	1.34	1.34
3100.00	6.77	6.73	6.67	6.72	0.10	30.06	33.15	29.66	1.97	1.36	1.37	1.34	1.31	1.33
3200.00	6.76	6.68	6.62	6.71	0.14	27.97	29.55	27.76	2.46	1.37	1.36	1.30	1.28	1.32
3300.00	6.77	6.66	6.60	6.72	0.17	26.30	27.01	26.28	2.93	1.41	1.35	1.28	1.26	1.31
3400.00	6.80	6.65	6.60	6.75	0.20	24.98	25.20	25.10	3.35	1.48	1.35	1.25	1.24	1.31
3500.00	6.85	6.67	6.62	6.80	0.23	23.93	23.83	24.15	3.74	1.56	1.34	1.24	1.22	1.30
3550.00	6.88	6.69	6.64	6.83	0.24	23.45	23.23	23.73	3.94	1.62	1.35	1.25	1.22	1.31
3600.00	6.91	6.71	6.66	6.86	0.25	23.09	22.75	23.35	4.10	1.66	1.34	1.23	1.21	1.30
3650.00	6.94	6.74	6.69	6.90	0.25	22.63	22.18	22.99	4.29	1.72	1.34	1.22	1.21	1.30
3700.00	6.98	6.77	6.72	6.93	0.26	22.35	21.79	22.66	4.45	1.77	1.34	1.23	1.20	1.30
3750.00	7.02	6.81	6.76	6.97	0.26	21.97	21.31	22.35	4.60	1.83	1.33	1.21	1.19	1.30
3800.00	7.05	6.84	6.80	7.01	0.25	21.71	20.93	22.06	4.76	1.88	1.33	1.22	1.19	1.30

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