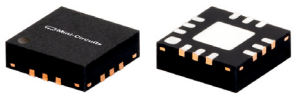
MMIC SURFACE MOUNT

Power Splitter/Combiner WP4S+

4 Way-0° 50Ω 3400 to 4600 MHz

FEATURES

- Excellent Isolation, Typ. 30 dB
- Good Phase Unbalance, Max. 9 deg.
- Good Amplitude Unbalance, Max. 0.6 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

- Line-of-Sight Links
- Satellite Down Link
- WIMAX

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		3400		4600	MHz
Insertion Loss* (Above 6.0 dB)	3400-4600 3700-4200		0.8 0.8	1.8 1.4	dB
Isolation	3400-4600 3700-4200	16 20	30 30		dB
Amplitude Unbalance	3400-4600 3700-4200			0.6 0.6	dB
Phase Unbalance	3400-4600 3700-4200			9 8	deg.
VSWR (Port S)	3400-4600 3700-4200		1.5 1.3		:1
VSWR (Ports 1,2,3,4)	3400-4600 3700-4200		1.3 1.3		:1

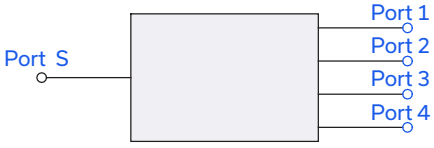
*Includes test fixture loss, 0.25 dB typ.

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. D
ECO-015507
WP4S+
MCL NY
250109

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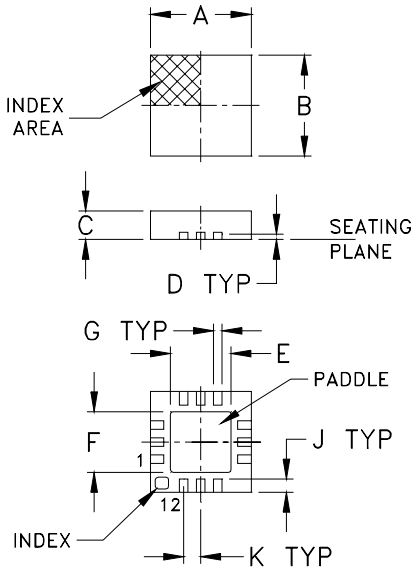
PAD CONNECTIONS

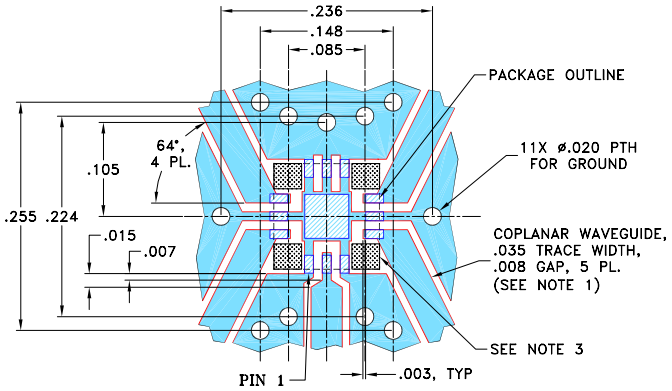
SUM PORT	2
PORT 1	12
PORT 2	10
PORT 3	6
PORT 4	4
GROUND	1,3,5,7,8,9,11, Paddle

OUTLINE DRAWING



DEMO BOARD MCL P/N: TB-WP4S+

SUGGESTED PCB LAYOUT (PL-259)



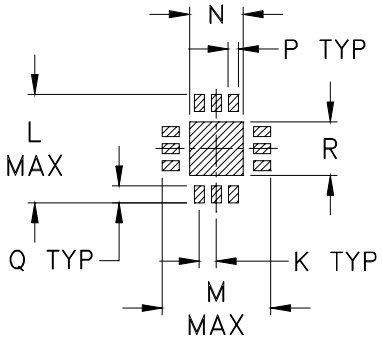
NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B 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)

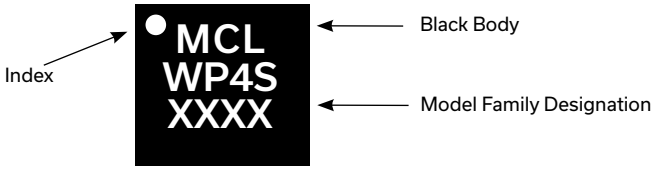
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

PRODUCT MARKING



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

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

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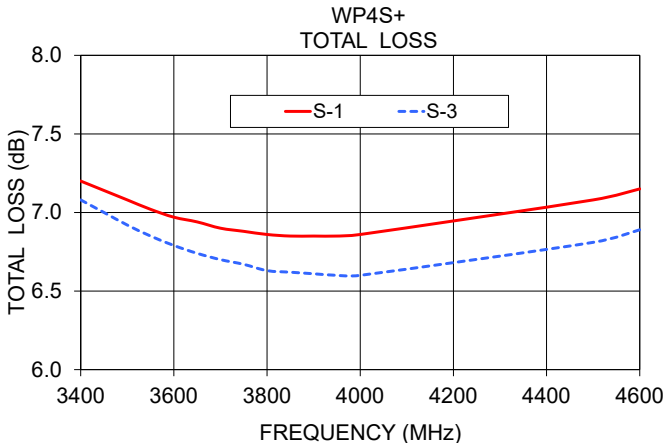
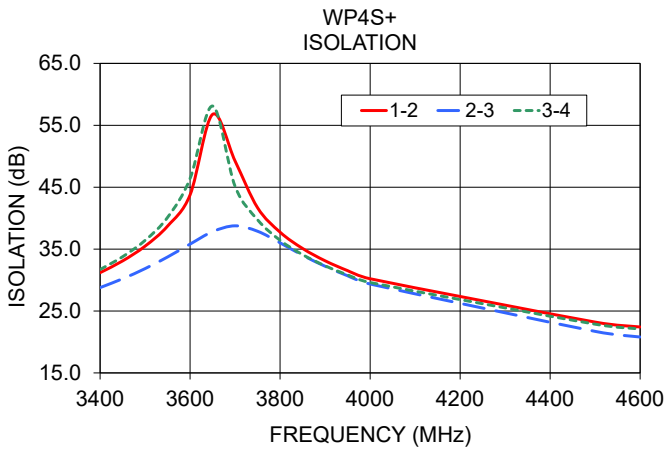
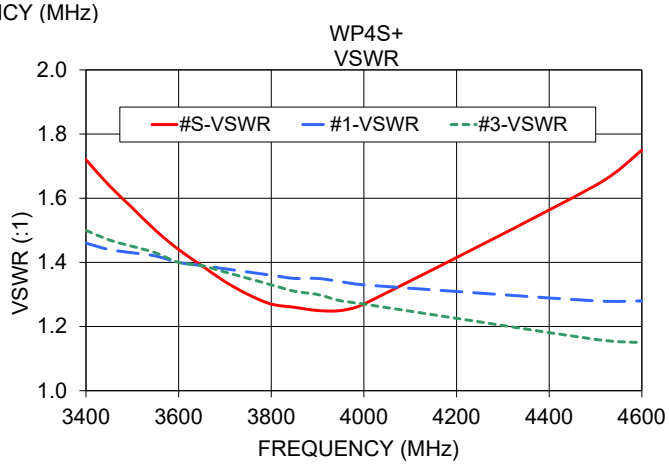
TYPICAL PERFORMANCE DATA AND CHARTS

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						
3400.00	7.20	7.13	7.08	7.17	0.13	31.19	28.78	31.70	1.61	1.72	1.46	1.49	1.50	1.46
3450.00	7.14	7.05	7.00	7.10	0.14	33.09	30.21	33.77	1.41	1.64	1.44	1.47	1.47	1.44
3500.00	7.08	6.98	6.92	7.04	0.16	35.48	31.85	36.41	1.25	1.57	1.43	1.45	1.45	1.43
3550.00	7.02	6.91	6.85	6.98	0.17	38.72	33.73	40.13	1.02	1.50	1.42	1.43	1.43	1.42
3600.00	6.97	6.85	6.79	6.93	0.18	43.77	35.81	46.42	0.87	1.44	1.40	1.41	1.40	1.40
3650.00	6.94	6.80	6.74	6.90	0.19	56.77	37.82	58.11	0.67	1.39	1.39	1.39	1.39	1.39
3700.00	6.90	6.75	6.70	6.86	0.20	49.22	38.76	45.12	0.50	1.34	1.38	1.37	1.37	1.38
3750.00	6.88	6.72	6.67	6.83	0.22	41.67	37.88	39.73	0.31	1.30	1.37	1.36	1.35	1.37
3800.00	6.86	6.69	6.63	6.81	0.22	37.73	36.01	36.42	0.26	1.27	1.36	1.34	1.33	1.36
3850.00	6.85	6.67	6.62	6.80	0.24	35.10	34.00	34.10	0.44	1.26	1.35	1.32	1.31	1.35
3900.00	6.85	6.66	6.61	6.80	0.24	33.11	32.23	32.30	0.63	1.25	1.35	1.31	1.30	1.35
3950.00	6.85	6.65	6.60	6.80	0.26	31.52	30.69	30.83	0.77	1.25	1.34	1.29	1.28	1.34
4000.00	6.86	6.65	6.60	6.80	0.26	30.21	29.36	29.60	0.95	1.27	1.33	1.28	1.27	1.33
4500.00	7.08	6.86	6.81	7.05	0.27	23.21	21.71	22.87	2.37	1.64	1.28	1.17	1.16	1.29
4600.00	7.15	6.94	6.89	7.12	0.26	22.42	20.80	22.10	2.67	1.75	1.28	1.16	1.15	1.29

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