MMIC SURFACE MOUNT

Power Splitter/Combiner WP4A+

4 Way-0° 50Ω 5100 to 6500 MHz

FEATURES

- Excellent isolation, 25 dB typ.
- Good phase unbalance, 3 deg. typ.
- Good amplitude unbalance, 0.15 dB typ.
- Small size, .118" x .118" x .035"
- 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
- ISM
- Radar
- Satellite up-link

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		5100		6500	MHz
Insertion Loss* (above 6.0 dB)	5100-6500	—	0.9	2.0	dB
Isolation	5100-6500	15	25	—	dB
Amplitude Unbalance	5100-6500	—	—	0.5	dB
Phase Unbalance	5100-6500	—	—	8	deg.
VSWR (Port S)	5100-6500	—	1.5	—	:1
VSWR (Ports 1,2,3,4)	5100-6500	—	1.6	—	:1

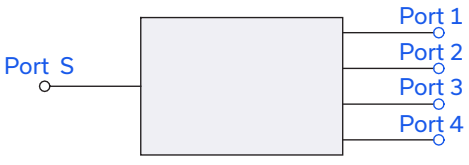
* Includes fixture loss, 0.3 dB typ.

MAXIMUM RATINGS

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

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

ELECTRICAL SCHEMATIC



REV. D
ECO-015507
WP4A+
MCL NY
230404

MMIC SURFACE MOUNT

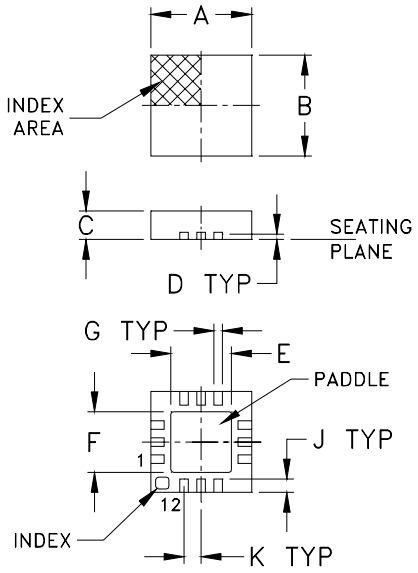
Power Splitter/Combiner WP4A+

4 Way-0° 50Ω 5100 to 6500 MHz

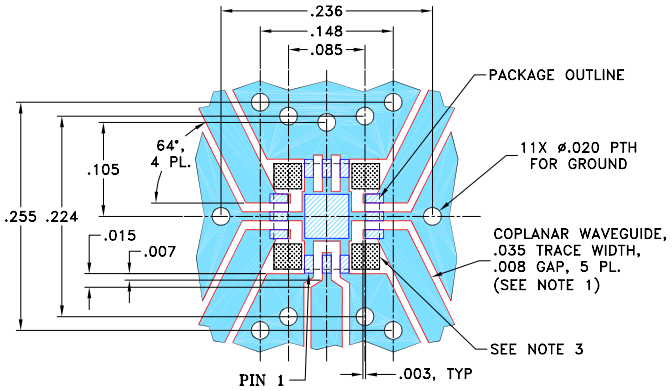
PAD CONNECTIONS

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-395+
SUGGESTED PCB LAYOUT (PL-259)



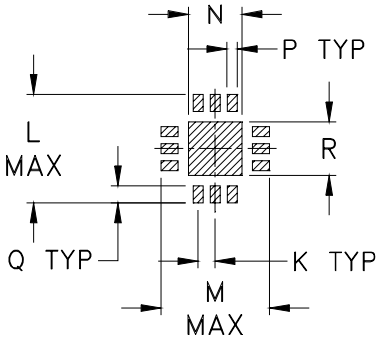
NOTES:

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)

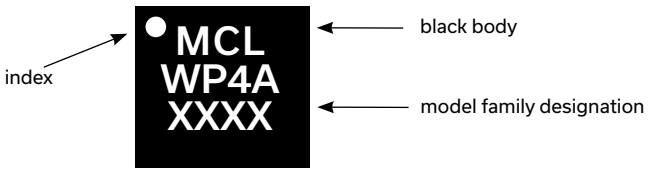
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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

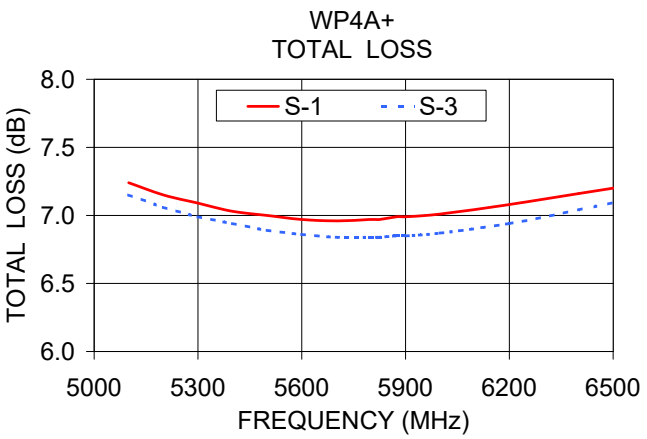
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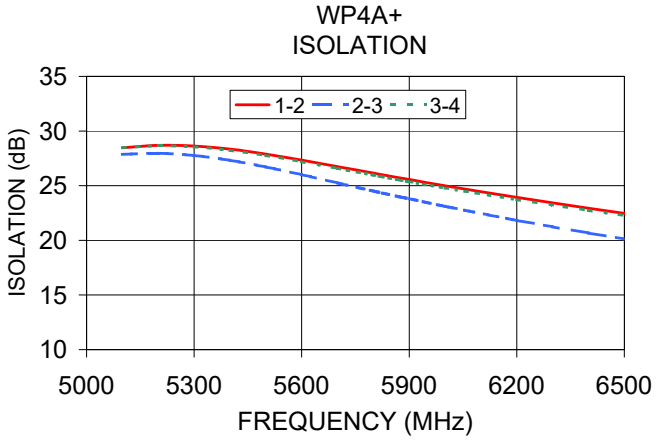
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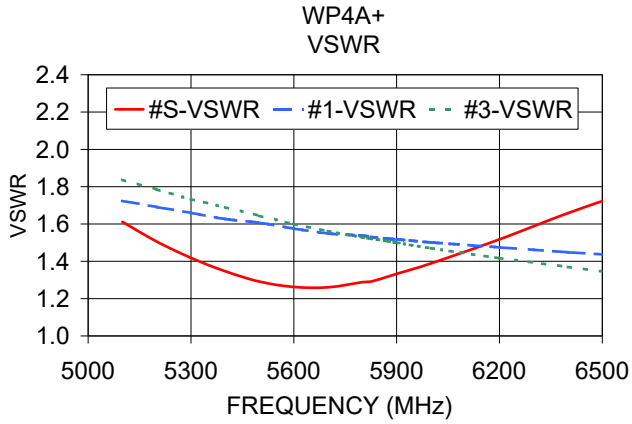
TYPICAL PERFORMANCE DATA AND CHARTS

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						
5100.00	7.24	7.16	7.15	7.22	0.09	28.47	27.87	28.48	4.01	1.61	1.72	1.81	1.84	1.75
5200.00	7.15	7.08	7.06	7.13	0.09	28.69	27.96	28.64	3.84	1.51	1.69	1.76	1.78	1.72
5300.00	7.09	7.00	6.99	7.07	0.09	28.63	27.76	28.55	3.65	1.42	1.66	1.71	1.73	1.69
5400.00	7.03	6.94	6.94	7.02	0.09	28.35	27.32	28.23	3.40	1.35	1.63	1.67	1.69	1.66
5500.00	7.00	6.90	6.89	6.98	0.10	27.89	26.71	27.76	3.17	1.29	1.61	1.63	1.64	1.63
5600.00	6.97	6.88	6.86	6.95	0.11	27.34	26.01	27.19	2.96	1.26	1.58	1.59	1.60	1.60
5700.00	6.96	6.87	6.84	6.94	0.12	26.75	25.25	26.57	2.71	1.26	1.55	1.55	1.56	1.58
5800.00	6.97	6.87	6.84	6.96	0.13	26.16	24.51	25.97	2.53	1.29	1.54	1.52	1.53	1.57
5825.00	6.97	6.87	6.84	6.95	0.13	26.00	24.33	25.81	2.42	1.29	1.53	1.52	1.52	1.56
5875.00	6.99	6.89	6.85	6.97	0.14	25.71	23.97	25.51	2.35	1.32	1.52	1.50	1.51	1.55
5900.00	6.99	6.90	6.85	6.97	0.14	25.57	23.80	25.37	2.33	1.33	1.52	1.50	1.50	1.55
6000.00	7.01	6.93	6.87	6.99	0.15	24.99	23.11	24.79	2.18	1.39	1.50	1.47	1.47	1.52

1. Total Loss = Insertion Loss + 6dB 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