



MMIC SURFACE MOUNT

# Power Splitter/Combiner

WP4P+

4 Way-0° 50Ω 1710 to 2025 MHz

## FEATURES

- Excellent isolation, 29 dB typ.
- Excellent phase unbalance, 0.5 deg. typ.
- Excellent 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

- PCS
- WCDMA
- DCS

## ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1710		2025	MHz
Insertion Loss* (above 6.0 dB)	1710-2025	—	0.7	1.4	dB
Isolation	1710-2025	19	29	—	dB
Amplitude Unbalance	1710-2025	—	—	0.4	dB
Phase Unbalance	1710-2025	—	—	4.0	deg.
VSWR (Port S)	1710-2025	—	1.3	—	:1
VSWR (Ports 1,2,3,4)	1710-2025	—	1.4	—	:1

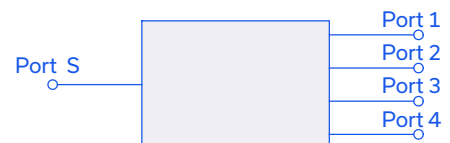
\*Includes fixture loss, 0.16 dB typ.

## 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

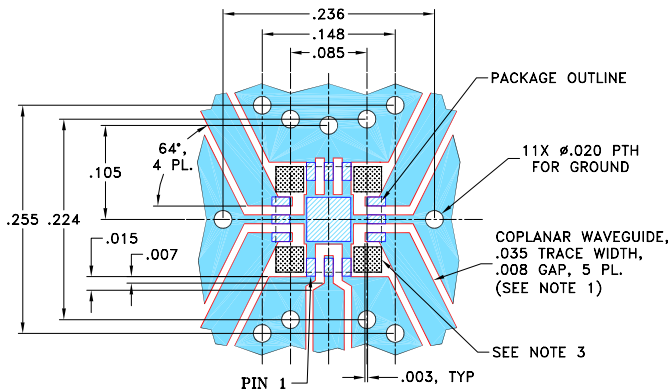




### PAD CONNECTIONS

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-395+ SUGGESTED PCB LAYOUT (PL-259)

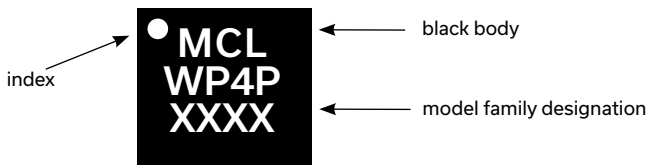


#### NOTES:

- 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.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- SIGNAL TRACES ARE NOT ALLOWED INSIDE HATCHED AREAS (APPROX. .030 X .030) AT 4 PLACES AS SHOWN.

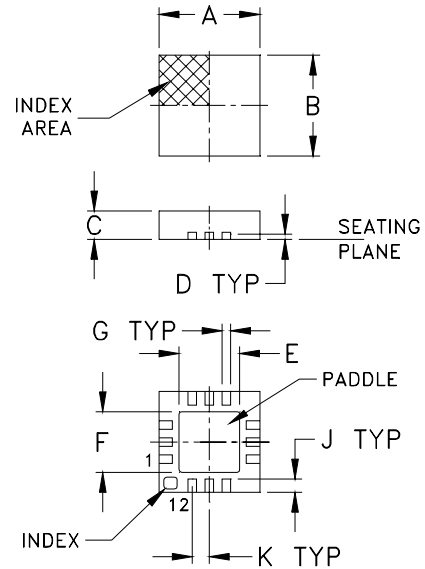
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### PRODUCT MARKING

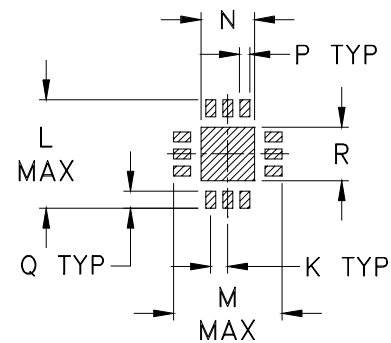


Marking may contain other features or characters for internal lot control

### 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	

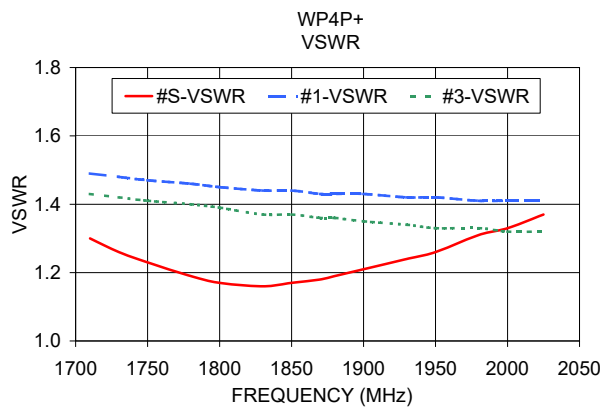
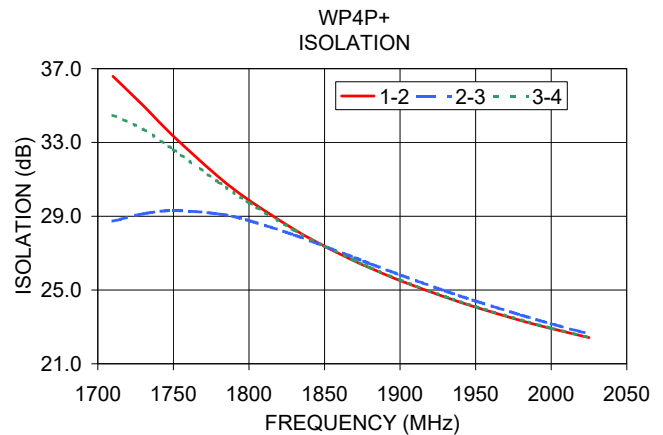
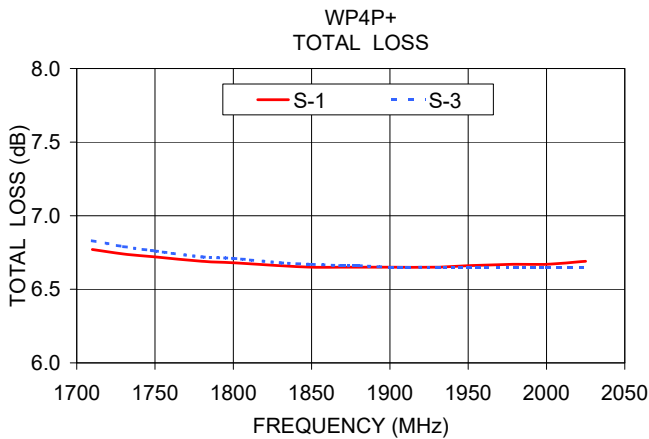
### TAPE & REEL INFORMATION: F66



### TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Total Loss <sup>1</sup> (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						
1710.00	6.77	6.88	6.83	6.73	0.15	36.58	28.73	34.47	0.62	1.30	1.49	1.42	1.43	1.45
1730.00	6.74	6.85	6.79	6.70	0.14	35.00	29.13	33.71	0.54	1.26	1.48	1.41	1.42	1.44
1750.00	6.72	6.82	6.76	6.68	0.14	33.34	29.30	32.61	0.45	1.23	1.47	1.40	1.41	1.43
1780.00	6.69	6.78	6.72	6.64	0.13	31.12	29.12	30.84	0.32	1.19	1.46	1.38	1.40	1.42
1800.00	6.68	6.76	6.71	6.63	0.13	29.87	28.76	29.73	0.25	1.17	1.45	1.37	1.39	1.41
1830.00	6.66	6.73	6.68	6.61	0.12	28.28	27.98	28.24	0.19	1.16	1.44	1.36	1.37	1.40
1850.00	6.65	6.72	6.67	6.61	0.12	27.37	27.37	27.37	0.22	1.17	1.44	1.35	1.37	1.40
1870.00	6.65	6.71	6.66	6.60	0.11	26.56	26.75	26.59	0.27	1.18	1.43	1.35	1.36	1.39
1880.00	6.65	6.71	6.66	6.60	0.11	26.20	26.43	26.22	0.32	1.19	1.43	1.34	1.36	1.39
1900.00	6.65	6.70	6.65	6.59	0.11	25.51	25.82	25.54	0.40	1.21	1.43	1.34	1.35	1.38
1930.00	6.65	6.69	6.65	6.60	0.10	24.61	24.94	24.64	0.50	1.24	1.42	1.33	1.34	1.38
1950.00	6.66	6.69	6.65	6.60	0.09	24.07	24.40	24.10	0.57	1.26	1.42	1.32	1.33	1.38
1980.00	6.67	6.69	6.65	6.61	0.09	23.34	23.64	23.37	0.67	1.31	1.41	1.31	1.33	1.37
2000.00	6.67	6.69	6.65	6.61	0.08	22.91	23.17	22.93	0.71	1.33	1.41	1.31	1.32	1.37
2025.00	6.69	6.70	6.65	6.62	0.08	22.42	22.62	22.43	0.81	1.37	1.41	1.30	1.32	1.37

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.
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