



**THE DATASHEET OF  
WP4U1+**





MMIC SURFACE MOUNT

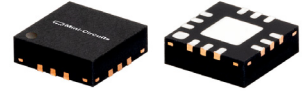
# Power Splitter/Combiner

## WP4U1+

4 Way-0° 50Ω 1875 to 2800 MHz

### FEATURES

- Excellent isolation, 24 dB typ.
- Good phase unbalance, 1 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
- MMDS
- ISM

### ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1875		2800	MHz
Insertion Loss* (above 6.0 dB)	1875-2800	—	0.7	1.9	dB
Isolation	1875-2800	15	24	—	dB
Amplitude Unbalance	1875-2800	—	—	0.5	dB
Phase Unbalance	1875-2800	—	—	5	deg.
VSWR (Port S)	1875-2800	—	1.5	—	:1
VSWR (Ports 1,2,3,4)	1875-2800	—	1.3	—	:1

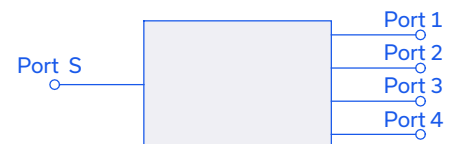
\*Includes test fixture loss, 0.2 dB typ.

### 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

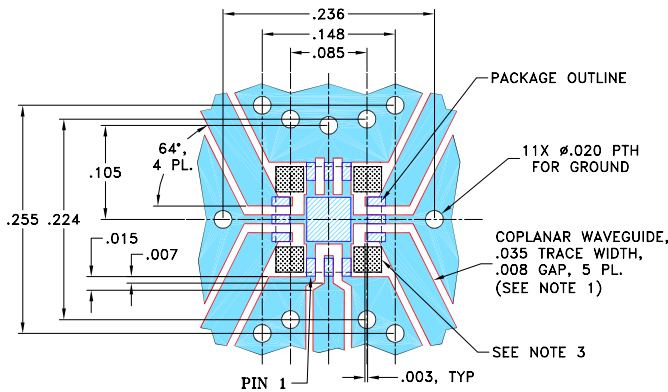




### PAD CONNECTIONS

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)

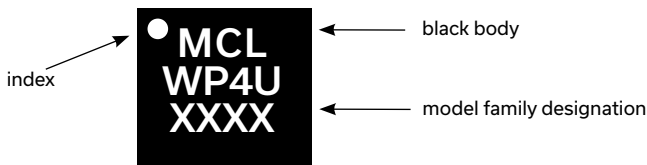


#### NOTES:

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.

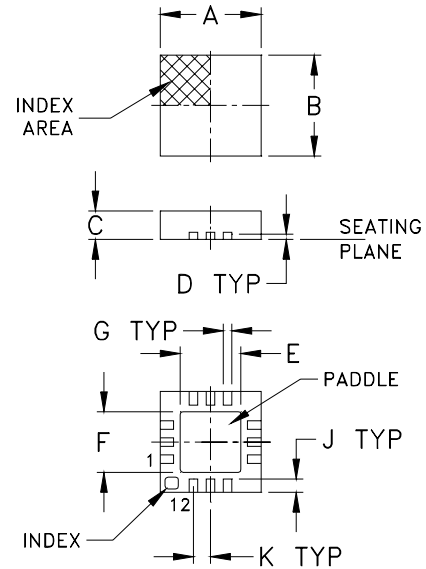
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### PRODUCT MARKING

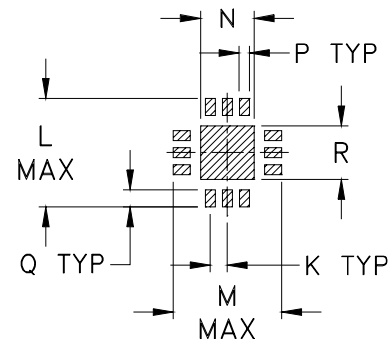


Marking may contain other features or characters for internal lot control

### 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	

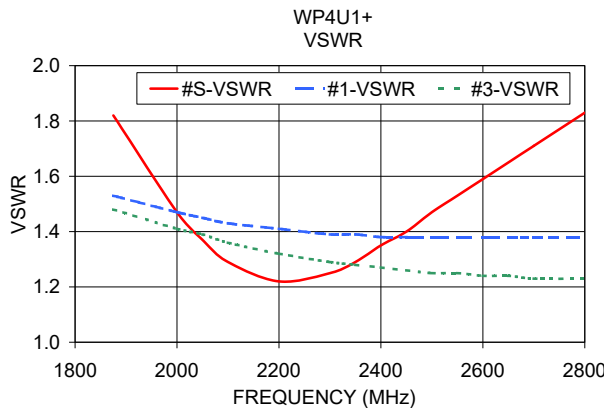
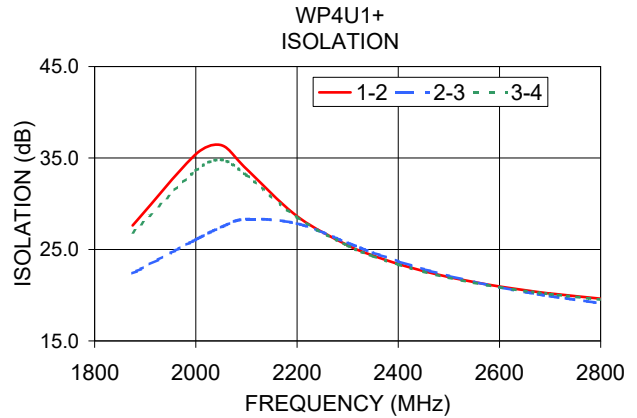
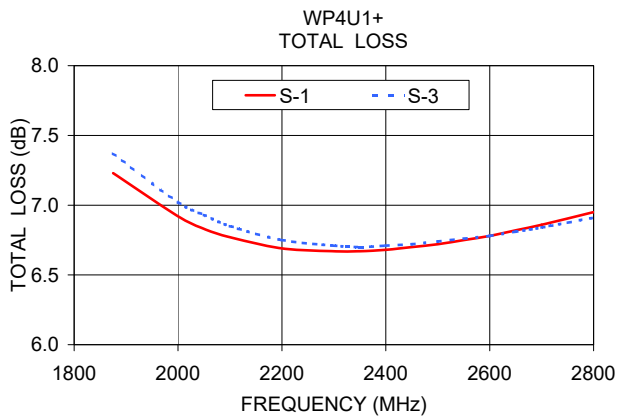
### TAPE & REEL INFORMATION: F66



### TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Total Loss <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						
1875.00	7.23	7.43	7.37	7.16	0.27	27.62	22.39	26.88	1.63	1.82	1.53	1.49	1.48	1.52
2000.00	6.92	7.08	7.02	6.83	0.24	35.42	26.07	33.64	1.15	1.47	1.47	1.42	1.41	1.46
2050.00	6.83	6.98	6.93	6.75	0.23	36.41	27.43	34.81	0.95	1.37	1.45	1.40	1.39	1.44
2100.00	6.77	6.90	6.85	6.68	0.22	33.80	28.32	33.13	0.78	1.29	1.43	1.37	1.36	1.42
2200.00	6.69	6.81	6.75	6.60	0.20	28.63	27.83	28.51	0.45	1.22	1.41	1.34	1.32	1.40
2300.00	6.67	6.77	6.71	6.59	0.18	25.46	25.71	25.41	0.40	1.25	1.39	1.31	1.29	1.38
2350.00	6.67	6.76	6.70	6.59	0.17	24.34	24.65	24.27	0.56	1.29	1.39	1.30	1.28	1.37
2400.00	6.68	6.76	6.71	6.60	0.16	23.41	23.70	23.35	0.73	1.35	1.38	1.28	1.27	1.37
2450.00	6.70	6.78	6.72	6.63	0.15	22.63	22.84	22.57	0.90	1.40	1.38	1.28	1.26	1.37
2500.00	6.72	6.79	6.74	6.66	0.14	21.98	22.10	21.92	1.05	1.47	1.38	1.27	1.25	1.37
2550.00	6.75	6.82	6.76	6.69	0.12	21.43	21.44	21.36	1.22	1.53	1.38	1.27	1.25	1.37
2600.00	6.78	6.84	6.78	6.73	0.11	20.95	20.87	20.88	1.39	1.59	1.38	1.26	1.24	1.37
2650.00	6.82	6.87	6.81	6.77	0.10	20.55	20.35	20.47	1.53	1.65	1.38	1.26	1.24	1.37
2700.00	6.86	6.90	6.84	6.81	0.09	20.19	19.90	20.11	1.71	1.71	1.38	1.26	1.23	1.37
2800.00	6.95	6.97	6.91	6.90	0.07	19.62	19.12	19.52	2.02	1.83	1.38	1.25	1.23	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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