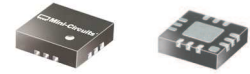


Surface Mount

# Power Splitter/Combiner

WP4N+

4 Way-0° 50Ω 1215 to 1900 MHz



CASE STYLE: DQ1225  
PRICE: \$1.49 ea. QTY. (20)

**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Available Tape and Reel at no extra cost  
Reel Size Devices/Reel  
7" 20, 50, 100, 200, 500, 1000, 2000

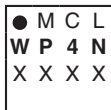
## Maximum Ratings

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.	

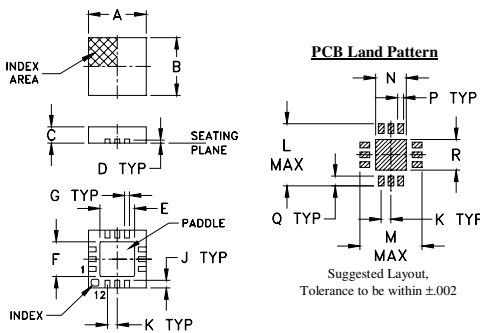
## Pad Connections

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

## Product Marking



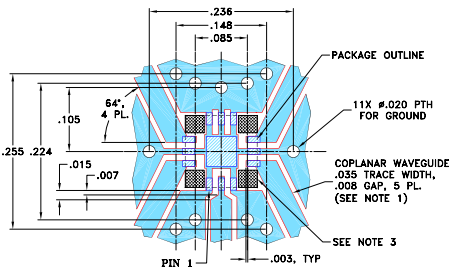
## Outline Drawing



## 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	

## Demo Board MCL P/N: TB-395+ Suggested PCB Layout (PL-259)



- NOTES:
- 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.
  - 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

## Features

- excellent isolation, 23 dB typ.
- excellent phase unbalance 1.5 deg. typ.
- excellent amplitude unbalance, 0.15 dB typ.
- small size, .118" x .118" x .035"
- high ESD level
- aqueous washable

## Applications

- GPS
- WCDMA
- PCS

## Electrical Specifications

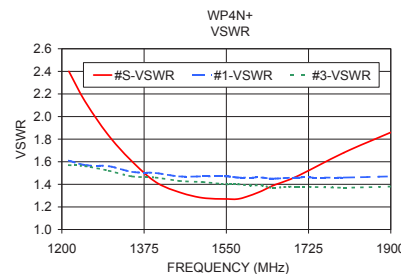
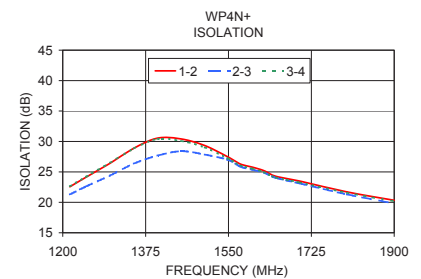
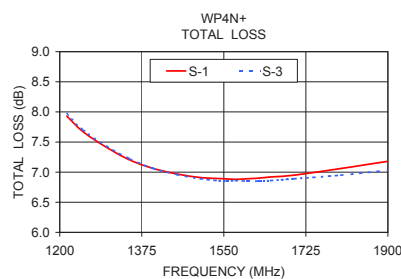
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS* (dB) ABOVE 6.0 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1) Typ.	
	Typ.	Min.	Typ.	Max.			Port S	Ports 1,2,3,4
1215-1900	23	14	0.7	1.9	5	0.5	1.5	1.4

\* Includes fixture loss, 0.15 dB typ. Max value increases to 2.5dB below 1315 MHz.

## Typical Performance Data

Freq. (MHz)	Total Loss <sup>1</sup> (dB)				Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (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						
1215.0	7.93	7.96	7.97	7.89	0.07	22.55	21.29	22.63	0.99	2.40	1.61	1.57	1.57	1.54
1250.0	7.67	7.69	7.70	7.64	0.06	24.17	22.64	24.24	0.77	2.13	1.57	1.57	1.56	1.52
1300.0	7.41	7.43	7.43	7.37	0.06	26.42	24.41	26.49	0.54	1.83	1.56	1.54	1.52	1.48
1350.0	7.20	7.21	7.22	7.17	0.05	28.88	26.35	28.83	0.28	1.60	1.51	1.50	1.47	1.45
1400.0	7.06	7.05	7.06	7.02	0.04	30.54	27.67	30.41	0.30	1.42	1.50	1.49	1.46	1.43
1450.0	6.97	6.95	6.96	6.94	0.03	30.41	28.39	30.08	0.45	1.33	1.47	1.47	1.43	1.41
1500.0	6.91	6.88	6.89	6.87	0.04	29.33	27.85	29.02	0.63	1.28	1.47	1.42	1.42	1.40
1550.0	6.89	6.84	6.85	6.85	0.04	27.42	26.95	27.16	0.98	1.27	1.47	1.44	1.40	1.39
1575.0	6.88	6.84	6.86	6.85	0.04	26.30	25.87	26.06	1.09	1.27	1.46	1.40	1.40	1.39
1600.0	6.89	6.84	6.85	6.87	0.05	25.79	25.36	25.55	1.07	1.30	1.46	1.39	1.39	1.38
1625.0	6.90	6.84	6.85	6.87	0.06	25.20	24.88	24.95	1.20	1.34	1.46	1.37	1.39	1.38
1650.0	6.92	6.84	6.86	6.87	0.08	24.28	24.03	24.07	1.27	1.39	1.45	1.39	1.37	1.38
1700.0	6.95	6.87	6.89	6.92	0.08	23.50	23.12	23.27	1.65	1.47	1.46	1.39	1.38	1.39
1800.0	7.06	6.95	6.95	7.02	0.12	21.72	21.31	21.57	2.01	1.68	1.46	1.36	1.37	1.42
1900.0	7.18	7.03	7.03	7.11	0.15	20.33	19.82	20.18	2.53	1.86	1.47	1.35	1.38	1.43

1. Total Loss = Insertion Loss + 6dB splitter loss.



## electrical schematic



## ESD Rating

Human Body Model (HBM): Class 1A (250V to < 500V) in accordance with ANSI/ESD STM 5.1 - 2001  
Machine Model (MM): Class M2 (100V to < 250V) in accordance with ANSI/ESD STM 5.2 - 1999



For detailed performance specs & shipping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuit's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

Rev. C  
M128893  
MP4-ED-12616A/2\_(05)  
WP4N+  
RS/CP/QL  
120529