

# MMIC Surface Mount Power Splitter/Combiner

## WP4G+

4 Way-0° 50Ω 1420 to 1660 MHz



Generic photo used for illustration purposes only  
CASE STYLE: DQ1225

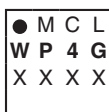
### Maximum Ratings

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.	

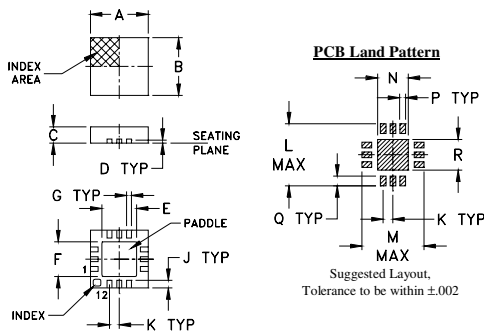
### Pad Connections

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



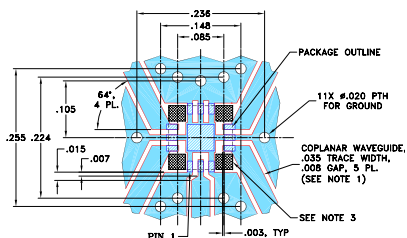
### Outline Drawing



### 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

### Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document 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/WCLStore/terms.jsp](http://www.minicircuits.com/WCLStore/terms.jsp)

### Features

- excellent isolation, 28 dB typ.
- excellent phase unbalance 1 deg. typ.
- excellent amplitude unbalance, 0.25 dB typ.
- small size, .118" x .118" x .035"
- high ESD level
- aqueous washable

### Applications

- GPS

### +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: 7" Devices/Reel: 20, 50, 100, 200, 500, 1000, 2000

### Electrical Specifications

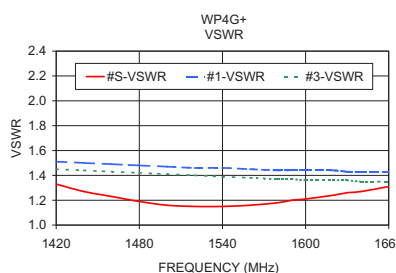
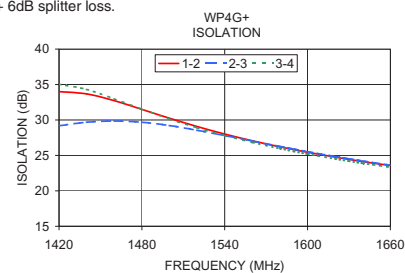
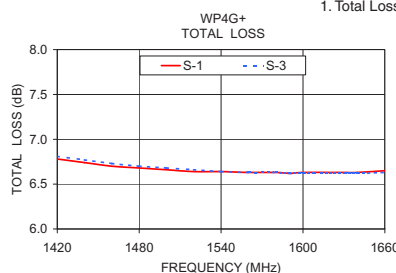
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS* (dB) ABOVE 6.0 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1) Typ.	
	Typ.	Min.	Typ.	Max.			Port S	Ports 1,2,3,4
1420-1660	28	19	0.7	1.4	4	0.5	1.25	1.4

\* Includes fixture loss, 0.12 dB typ.

### 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						
1420.00	6.78	6.88	6.81	6.70	0.18	34.01	29.17	35.04	0.97	1.33	1.51	1.47	1.45	1.46
1440.00	6.74	6.84	6.77	6.66	0.17	33.68	29.68	34.31	0.91	1.27	1.50	1.46	1.44	1.45
1460.00	6.70	6.80	6.73	6.63	0.17	32.72	29.85	32.99	0.85	1.23	1.49	1.45	1.43	1.45
1480.00	6.68	6.77	6.70	6.61	0.16	31.49	29.68	31.52	0.86	1.19	1.48	1.44	1.42	1.44
1500.00	6.66	6.75	6.68	6.59	0.16	30.25	29.21	30.14	0.87	1.16	1.47	1.43	1.41	1.43
1520.00	6.64	6.73	6.66	6.57	0.16	29.08	28.55	28.90	0.88	1.15	1.46	1.42	1.40	1.42
1540.00	6.64	6.71	6.64	6.56	0.15	28.01	27.80	27.80	0.89	1.15	1.46	1.41	1.39	1.42
1560.00	6.63	6.70	6.63	6.55	0.15	27.06	27.02	26.83	0.92	1.16	1.45	1.40	1.38	1.41
1580.00	6.63	6.70	6.63	6.55	0.14	26.21	26.25	25.97	0.93	1.18	1.44	1.39	1.37	1.41
1590.00	6.62	6.69	6.62	6.55	0.14	25.82	25.89	25.57	0.93	1.20	1.44	1.39	1.37	1.40
1600.00	6.63	6.69	6.62	6.55	0.14	25.45	25.52	25.20	0.95	1.21	1.44	1.39	1.36	1.40
1620.00	6.63	6.69	6.62	6.56	0.14	24.76	24.84	24.51	1.00	1.24	1.44	1.38	1.36	1.40
1630.00	6.63	6.69	6.62	6.56	0.13	24.44	24.51	24.19	1.04	1.26	1.43	1.38	1.36	1.39
1640.00	6.63	6.69	6.62	6.56	0.13	24.13	24.20	23.89	1.08	1.27	1.43	1.38	1.35	1.39
1660.00	6.65	6.70	6.63	6.57	0.13	23.57	23.61	23.33	1.19	1.31	1.43	1.37	1.35	1.39

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



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