

Surface Mount

Power Splitter/Combiner

WP4M+

4 Way-0° 50Ω 720 to 1125 MHz

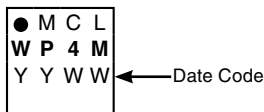
Maximum Ratings

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.

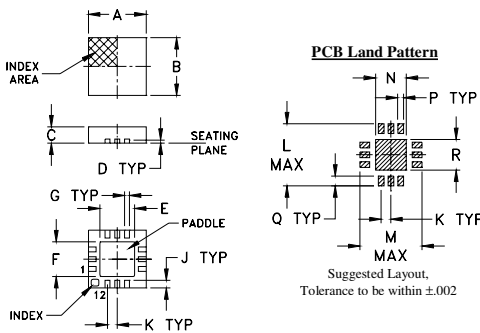
Pad Connections

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



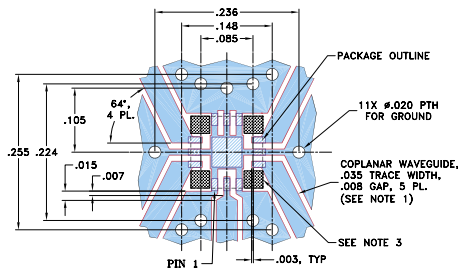
Outline Drawing



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

- good isolation, 22 dB typ.
- excellent phase unbalance, 0.5 deg. typ.
- good amplitude unbalance, 0.15 dB typ.
- small size, .118" x .118" x .035"
- high ESD level
- aqueous washable

Applications

- cellular
- WCDMA
- GSM

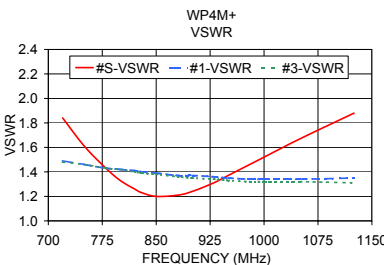
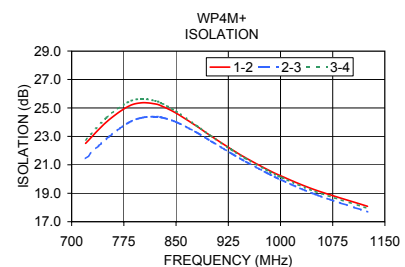
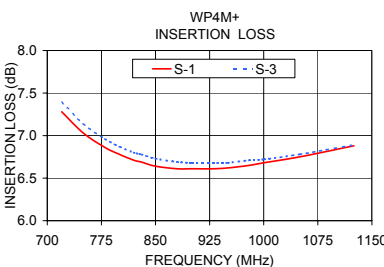
Electrical Specifications

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
f _L -f _H					Max.	Max.		
720-1125	22	15	0.7	1.7	3.0	0.5	1.5	1.35

* Includes test fixture loss, 0.1 dB typ.

Typical Performance Data

Freq. (MHz)	Insertion Loss (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						
720.00	7.28	7.42	7.39	7.27	0.15	22.51	21.44	22.76	0.66	1.84	1.49	1.49	1.48	1.46
750.00	7.03	7.18	7.14	7.03	0.15	24.01	22.83	24.31	0.52	1.61	1.46	1.46	1.46	1.44
780.00	6.86	7.00	6.96	6.85	0.14	25.07	23.91	25.38	0.38	1.43	1.43	1.44	1.43	1.41
800.00	6.78	6.91	6.87	6.77	0.14	25.36	24.30	25.63	0.36	1.33	1.42	1.42	1.42	1.40
820.00	6.71	6.84	6.80	6.70	0.14	25.28	24.39	25.50	0.37	1.26	1.41	1.41	1.40	1.38
830.00	6.69	6.81	6.78	6.68	0.14	25.12	24.32	25.31	0.35	1.23	1.40	1.40	1.39	1.38
850.00	6.64	6.77	6.73	6.64	0.14	24.64	24.01	24.76	0.36	1.20	1.39	1.39	1.38	1.36
880.00	6.61	6.73	6.69	6.60	0.13	23.70	23.26	23.73	0.47	1.21	1.37	1.37	1.36	1.35
900.00	6.61	6.72	6.68	6.59	0.13	23.03	22.67	23.04	0.55	1.24	1.37	1.36	1.35	1.34
930.00	6.61	6.72	6.68	6.59	0.13	22.08	21.78	22.04	0.69	1.31	1.36	1.35	1.34	1.33
950.00	6.62	6.73	6.68	6.60	0.13	21.49	21.22	21.44	0.78	1.37	1.35	1.34	1.33	1.33
980.00	6.65	6.75	6.71	6.63	0.13	20.70	20.44	20.63	0.90	1.46	1.34	1.34	1.32	1.32
1000.00	6.68	6.77	6.72	6.65	0.13	20.23	19.96	20.14	0.98	1.52	1.34	1.33	1.32	1.32
1050.00	6.75	6.84	6.78	6.71	0.12	19.23	18.92	19.12	1.15	1.67	1.34	1.33	1.32	1.31
1125.00	6.88	6.95	6.89	6.84	0.12	18.08	17.69	17.95	1.45	1.88	1.35	1.33	1.31	1.32



electrical schematic



ESD Rating

Human Body Model (HBM): Class 1A (250 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

Mini-Circuits
ISO 9001 ISO 14001 CERTIFIED

ALL NEW
minicircuits.com

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS

Rev. A
M112849
MP4-ED-12616A/1-(02)
WP4M+
RS/CP/AM
071002