

Surface Mount Power Splitter/Combiner

4 Way-0° 50Ω 1500 to 2500 MHz

BP4P1+



Generic photo used for illustration purposes only

Maximum Ratings

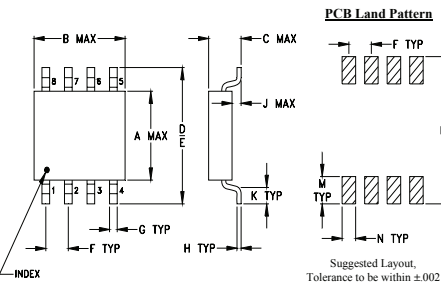
Operating Temperature	-40°C to 85°C
Storage Temperature	-65°C to 150°C
Power Input (as a splitter)	1.5W max.
Internal Dissipation	0.375W max.

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

SUM PORT	2
PORT 1	1
PORT 2	8
PORT 3	5
PORT 4	4
GROUND	3,6,7

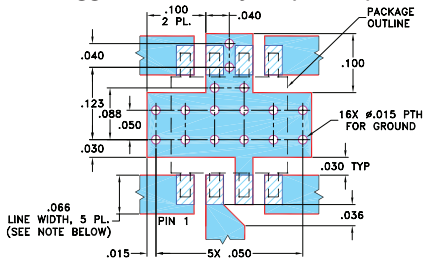
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.163	.210	.077	.250	.220	.050	.017
4.14	5.33	1.96	6.35	5.59	1.27	0.43
H	J	K	M	N	P	wt
.009	.025	.030	.050	.030	.270	grams
0.23	0.64	0.76	1.27	0.76	6.86	0.10

Demo Board MCL P/N: TB-231 Suggested PCB Layout (PL-113)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 - ▨ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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.
- C. The parts covered by this specification document are subject to Mini-Circuits 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-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Features

- low insertion loss, 0.8 dB typ.
- excellent output VSWR, 1.25:1 typ.
- aqueous washable
- excellent power handling, 1.5W

Applications

- PCS/DCS
- GSM
- WCDMA

CASE STYLE: XX211

+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
13"	2000

Electrical Specifications

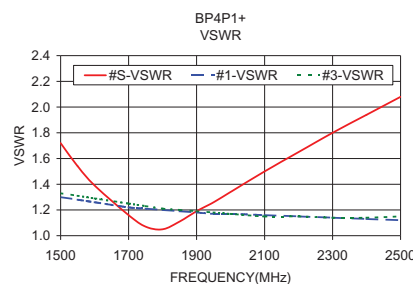
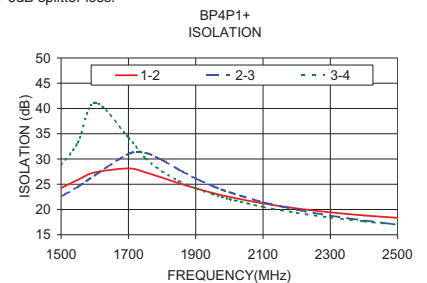
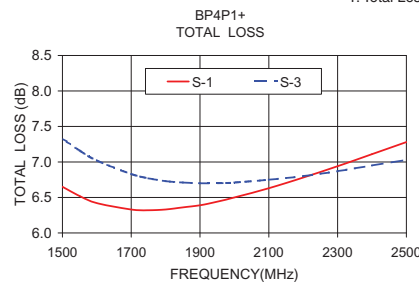
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 6 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE ^Δ (dB)	VSWR (:1) Typ.	
	Typ.	Min.	Typ.	Max.			Port S	Ports 1,2,3,4
f _L -f _U					Max.	Max.		
1500-2500	21	15	0.8	1.6	25	0.8	1.6	1.25

^Δ Measurements relative to port 2.

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (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						
1500.00	6.65	7.15	7.33	7.29	0.69	24.25	22.57	28.84	2.37	1.72	1.30	1.36	1.33	1.40
1550.00	6.52	6.97	7.16	7.12	0.64	25.88	24.50	33.27	3.35	1.54	1.28	1.34	1.31	1.37
1600.00	6.42	6.83	7.02	6.99	0.59	27.33	26.75	41.16	4.36	1.39	1.26	1.32	1.29	1.34
1700.00	6.33	6.65	6.83	6.83	0.50	28.13	31.00	34.24	6.30	1.16	1.22	1.29	1.25	1.30
1750.00	6.32	6.60	6.77	6.79	0.47	27.35	31.21	30.19	7.24	1.07	1.21	1.27	1.23	1.28
1800.00	6.33	6.56	6.73	6.76	0.43	26.31	29.80	27.58	8.19	1.05	1.20	1.26	1.21	1.26
1850.00	6.36	6.54	6.71	6.76	0.40	25.20	27.88	25.67	9.12	1.11	1.19	1.25	1.20	1.24
1900.00	6.39	6.53	6.70	6.76	0.36	24.20	26.14	24.21	10.04	1.19	1.18	1.24	1.19	1.23
1950.00	6.44	6.53	6.70	6.77	0.33	23.27	24.66	23.03	10.95	1.26	1.17	1.23	1.18	1.22
2000.00	6.50	6.55	6.71	6.79	0.30	22.49	23.42	22.06	11.89	1.34	1.17	1.22	1.17	1.20
2100.00	6.63	6.59	6.75	6.86	0.27	21.20	21.44	20.52	13.70	1.50	1.16	1.20	1.15	1.18
2200.00	6.78	6.65	6.80	6.94	0.29	20.21	19.96	19.35	15.49	1.65	1.15	1.19	1.15	1.17
2300.00	6.94	6.72	6.87	7.04	0.32	19.44	18.78	18.42	17.28	1.80	1.14	1.19	1.14	1.15
2400.00	7.11	6.81	6.95	7.14	0.34	18.83	17.82	17.65	19.06	1.94	1.13	1.19	1.14	1.14
2500.00	7.28	6.90	7.03	7.25	0.38	18.35	17.00	16.99	20.86	2.08	1.12	1.19	1.15	1.12

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



electrical schematic



ESD Rating

Human Body Model (HBM): Class 1A (250 v to <500 v) in accordance with ANSI/ESD STM 5.1 - 2001
Machine Model (MM): Class IM1 (< 100 v) in accordance with ANSI/ESD STM 5.2 - 1999 (pass 50V)