

# Surface Mount Power Splitter/Combiner

## SP-2P1+

2 Way-0° 50Ω

1350 to 2250 MHz



CASE STYLE: CA531  
PRICE: \$0.96 ea. QTY (25)

### 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	0.75W max.

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

### Pin Connections

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

### Features

- wide bandwidth
- low insertion loss, 0.5 dB typ.
- good isolation, 20 dB typ.
- excellent output VSWR, 1.2:1 typ.
- excellent power handling, 1.5W
- small size
- aqueous washable

### Applications

- PCS/DCS
- communication systems
- mobile
- PDC
- GPS
- GSM

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

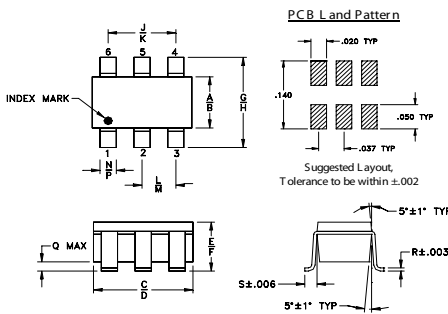
### Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) ABOVE 3.0 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1)	
	Typ.	Min.	Typ.	Max.			S-Port Typ.	Output Ports Typ.
1350-2250	20	9	0.5	1.1	4	0.2	1.3	1.2

### Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
1350.00	3.45	3.42	0.03	11.34	0.43	1.40	1.28	1.26
1400.00	3.44	3.41	0.03	12.25	0.42	1.36	1.24	1.22
1500.00	3.42	3.40	0.02	14.49	0.42	1.30	1.16	1.14
1600.00	3.41	3.39	0.02	17.51	0.42	1.24	1.08	1.06
1700.00	3.41	3.39	0.01	22.19	0.43	1.21	1.00	1.01
1710.00	3.41	3.39	0.01	22.82	0.43	1.21	1.00	1.02
1770.00	3.41	3.40	0.01	27.94	0.44	1.20	1.05	1.06
1830.00	3.43	3.42	0.01	36.58	0.47	1.21	1.10	1.11
1860.00	3.43	3.43	0.01	34.67	0.48	1.22	1.12	1.13
1920.00	3.46	3.45	0.00	26.70	0.50	1.26	1.17	1.18
1950.00	3.47	3.47	0.00	24.20	0.52	1.28	1.19	1.20
2000.00	3.50	3.50	0.00	21.14	0.55	1.33	1.23	1.25
2125.00	3.61	3.61	0.01	16.35	0.65	1.49	1.34	1.35
2225.00	3.73	3.75	0.01	13.84	0.75	1.66	1.42	1.42
2250.00	3.77	3.79	0.01	13.32	0.74	1.71	1.44	1.44

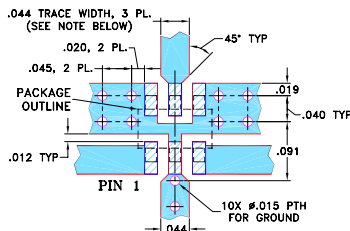
### Outline Drawing



### Outline Dimensions (inch/mm)

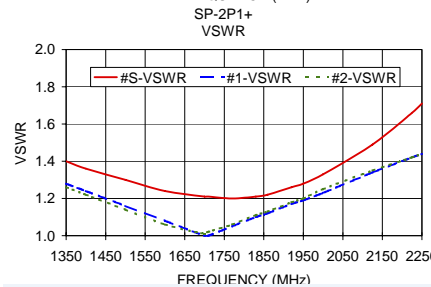
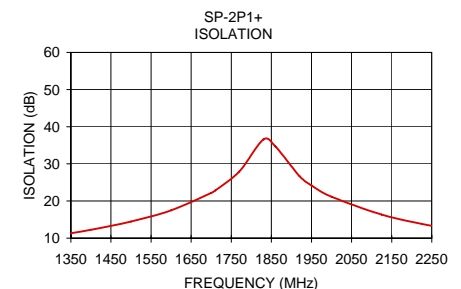
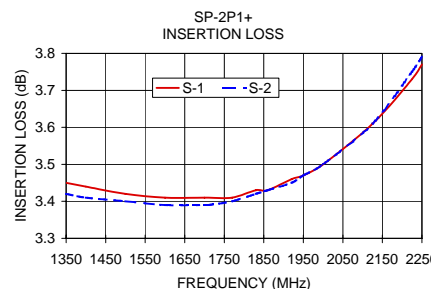
A	B	C	D	E	F	G	H	J
.052	.067	.106	.122	.035	.064	.087	.118	.067
1.32	1.70	2.69	3.10	0.89	1.63	2.21	3.00	1.70
K	L	M	N	P	Q	R	S	wt
.083	.033	.042	.012	.020	.012	.006	.018	grams
2.11	0.84	1.07	0.30	0.51	0.30	0.15	0.46	0.020

### Demo Board MCL P/N: TB-374 Suggested PCB Layout (PL-232)



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; 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



### 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 M1 (< 100 v) in accordance with ANSI/ESD STM 5.2 - 1999 (pass 50V)

**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping 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. A  
M107210  
ED-12348C/2+  
SP-2P1+  
RS/LC/CP/AM  
090824