



**SURFACE MOUNT**

# Power Splitter/Combiner

## SP-2U+

2 Way-0° 50Ω 2100 to 2300 MHz

### FEATURES

- Low insertion loss, 0.5 dB typ.
- Good isolation, 24 dB typ.
- Good output VSWR, 1.05:1 typ.
- Excellent power handling, 1.5W
- Small size
- Aqueous washable



Generic photo used for illustration purposes only

CASE STYLE: CA531

### +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our website for methodologies and qualifications

### APPLICATIONS

- WCDMA
- WIMAX

### ELECTRICAL SPECIFICATIONS AT 25°C

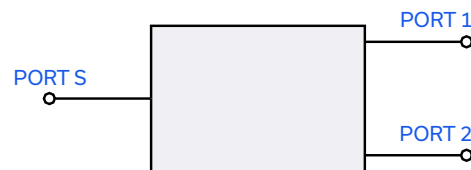
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		2100		2300	MHz
Insertion Loss (above 3.0 dB)	2100-2300	—	0.5	0.7	dB
Isolation	2100-2300	18	24	—	dB
Amplitude Unbalance	2100-2300	—	—	0.2	dB
Phase Unbalance	2100-2300	—	—	3.0	deg.
VSWR (Port S)	2100-2300	—	1.25	—	:1
VSWR (Port 1)	2100-2300	—	1.05	—	:1
VSWR (Port 2)	2100-2300	—	1.05	—	:1

### MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-65 °C to +150 °C
Input Power (as a splitter)	1.5 W max.
Internal Dissipation	0.75W max.

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

### ELECTRICAL SCHEMATIC





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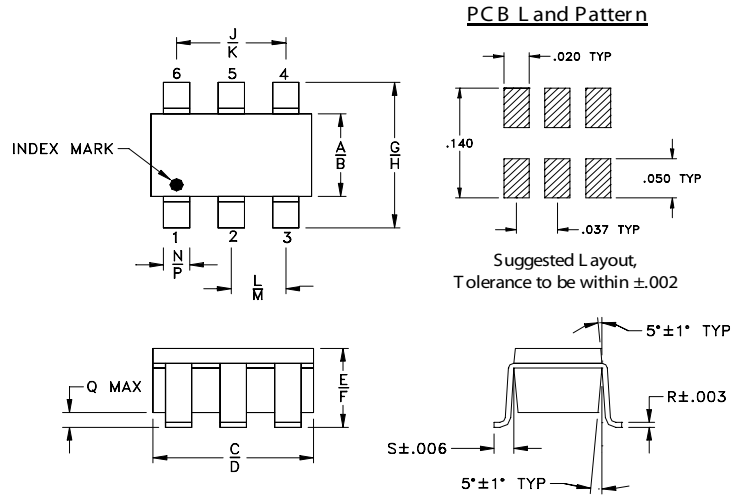
Mini-Circuits

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**PIN CONNECTIONS**

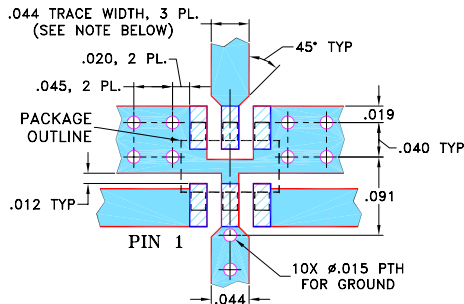
SUM PORT	5
PORT 1	1
PORT 2	3
GROUND	2,4,6

**OUTLINE DRAWING**



**PRODUCT MARKING: N/A**

**DEMOBOARD MCL P/N: TB-374**  
**SUGGESTED PCB LAYOUT (PL-232)**



- NOTES:**
- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
  - 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

**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

**TAPE & REEL INFORMATION: F31**



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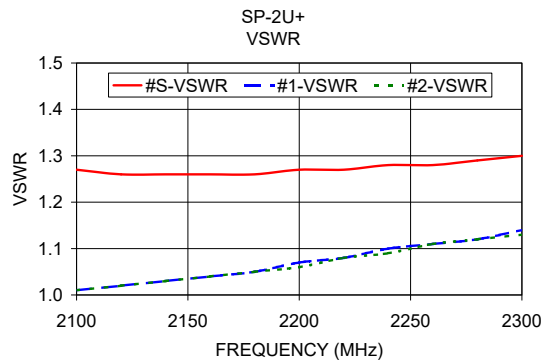
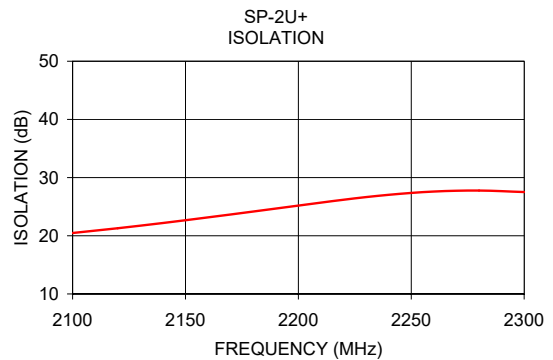
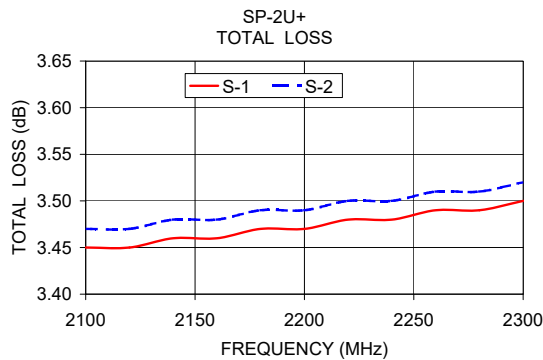
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### TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR (:1)		
	S-1	S-2				S	1	2
2100.00	3.45	3.47	0.02	20.47	0.74	1.27	1.01	1.01
2120.00	3.45	3.47	0.02	21.30	0.75	1.26	1.02	1.02
2140.00	3.46	3.48	0.02	22.20	0.74	1.26	1.03	1.03
2160.00	3.46	3.48	0.02	23.16	0.74	1.26	1.04	1.04
2180.00	3.47	3.49	0.02	24.17	0.74	1.26	1.05	1.05
2200.00	3.47	3.49	0.02	25.19	0.73	1.27	1.07	1.06
2220.00	3.48	3.50	0.02	26.19	0.73	1.27	1.08	1.08
2240.00	3.48	3.50	0.02	27.04	0.73	1.28	1.10	1.09
2260.00	3.49	3.51	0.02	27.60	0.73	1.28	1.11	1.11
2280.00	3.49	3.51	0.02	27.78	0.72	1.29	1.12	1.12
2300.00	3.50	3.52	0.02	27.51	0.73	1.30	1.14	1.13

1. Total Loss = Insertion Loss + 3dB splitter loss.



#### 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)


#### 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/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)




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