



**THE DATASHEET OF  
SP-2W1+**





**SURFACE MOUNT**

# Power Splitter/Combiner

## SP-2W1+

2 Way-0° 50Ω 2875 to 4200 MHz

### FEATURES

- Widebandwidth
- Low insertion loss, 0.8 dB typ.
- Good isolation, 20 dB typ.
- Good output VSWR, 1.3:1 typ.
- 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

- WIMAX
- Satellite receivers
- Defense radar
- Line-of-sight links

### ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		2875		4200	MHz
Insertion Loss (above 3.0 dB)	2875-4200	—	0.8	1.4	dB
Isolation	2875-4200	10	20	—	dB
Amplitude Unbalance	2875-4200	—	—	0.2	dB
Phase Unbalance	2875-4200	—	—	8	deg.
VSWR (Port S)	2875-4200	—	1.4	—	:1
VSWR (Port 1)	2875-4200	—	1.3	—	:1
VSWR (Port 2)	2875-4200	—	1.3	—	:1

### MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-65 °C to +150 °C
Input Power (as a splitter)	0.75 W max.
Internal Dissipation	0.375W max.

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

### ELECTRICAL SCHEMATIC





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Mini-Circuits

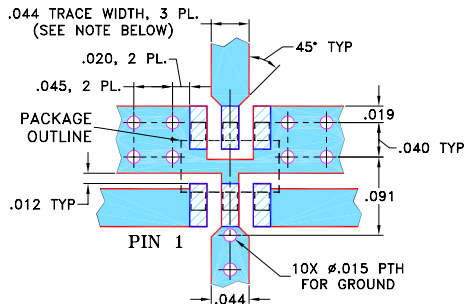
2 Way-0° 50Ω 2875 to 4200 MHz

### PIN CONNECTIONS

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

PRODUCT MARKING: N/A

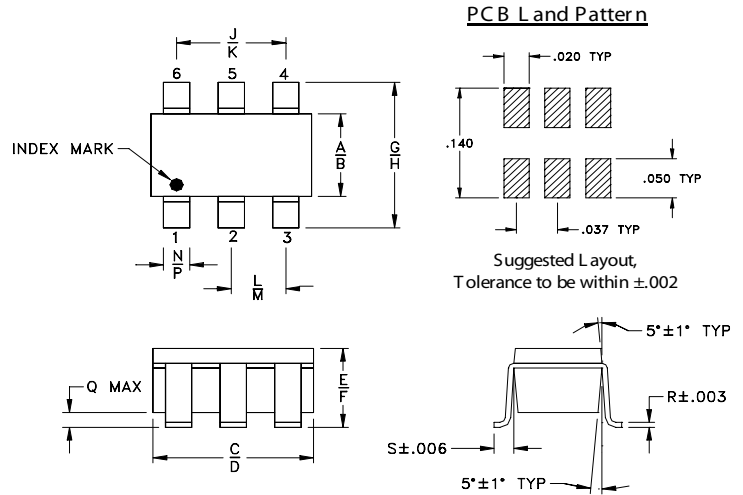
DEMOBOARD MCL P/N: TB-374  
SUGGESTED PCB LAYOUT (PL-232)



- NOTES: 1. 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.  
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

### 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

TAPE & REEL INFORMATION: F31



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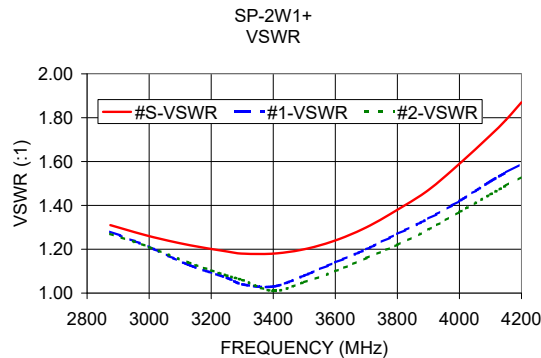
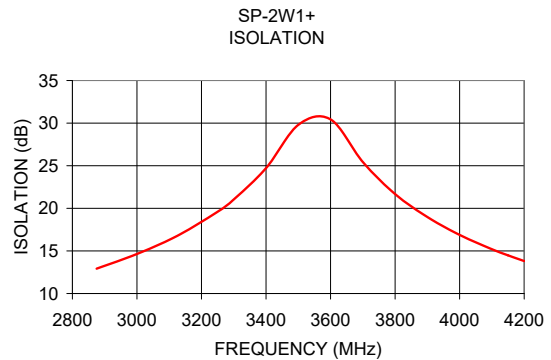
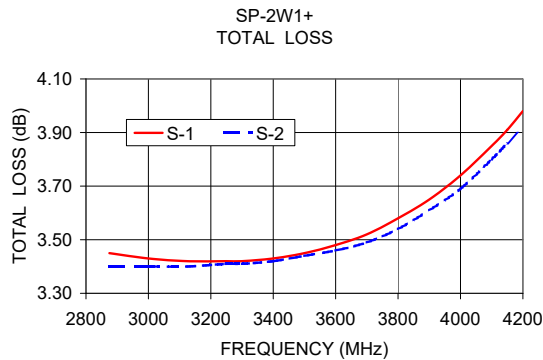
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### TYPICAL PERFORMANCE DATA AND CHARTS

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
2875.00	3.45	3.40	0.04	12.92	1.27	1.31	1.28	1.27
3000.00	3.43	3.40	0.03	14.64	1.27	1.26	1.21	1.21
3125.00	3.42	3.40	0.02	16.77	1.28	1.22	1.13	1.14
3250.00	3.42	3.41	0.01	19.60	1.27	1.19	1.07	1.08
3300.00	3.42	3.41	0.01	21.04	1.26	1.18	1.04	1.06
3400.00	3.43	3.42	0.01	24.72	1.24	1.18	1.03	1.01
3500.00	3.45	3.44	0.01	29.80	1.21	1.20	1.08	1.05
3600.00	3.48	3.46	0.02	30.44	1.17	1.24	1.14	1.10
3700.00	3.52	3.49	0.03	25.44	1.16	1.30	1.20	1.16
3800.00	3.58	3.54	0.03	21.67	1.15	1.38	1.27	1.22
3900.00	3.65	3.61	0.04	18.98	1.17	1.47	1.34	1.29
4000.00	3.74	3.69	0.04	16.88	1.17	1.59	1.42	1.37
4100.00	3.85	3.80	0.05	15.20	1.19	1.72	1.51	1.45
4150.00	3.91	3.86	0.05	14.48	1.18	1.79	1.55	1.49
4200.00	3.98	3.92	0.06	13.81	1.20	1.87	1.59	1.53

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.
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