





**SURFACE MOUNT**

# Power Splitter/Combiner

## SP-2G1+

2 Way-0° 50Ω 1200 to 2000 MHz

### FEATURES

- Wide bandwidth, 1200-2000 MHz
- Low insertion loss, 0.7 dB typ.
- Good isolation, 20 dB typ.
- Good output VSWR, 1.3:1 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

- GPS
- WCDMA
- PCS
- DCS

### ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1200		2000	MHz
Insertion Loss (above 3.0 dB)	1200-2000	—	0.7	1.3	dB
Isolation	1200-2000	10*	20	—	dB
Amplitude Unbalance	1200-2000	—	—	0.2	dB
Phase Unbalance	1200-2000	—	—	4	deg.
VSWR (Port S)	1200-2000	—	1.5	—	:1
VSWR (Port 1)	1200-2000	—	1.3	—	:1
VSWR (Port 2)	1200-2000	—	1.3	—	:1

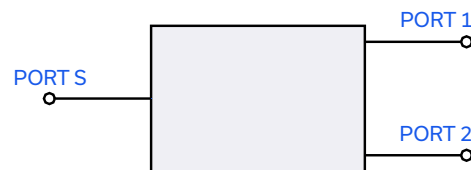
\*8 dB from 1900-2000 MHz

### 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

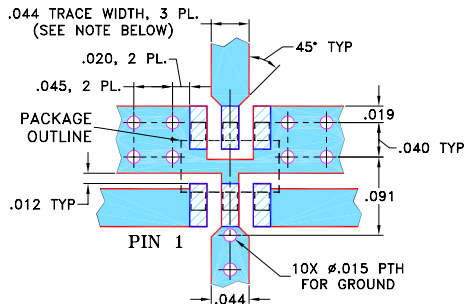
2 Way-0° 50Ω 1200 to 2000 MHz

### PIN CONNECTIONS

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

PRODUCT MARKING: N/A

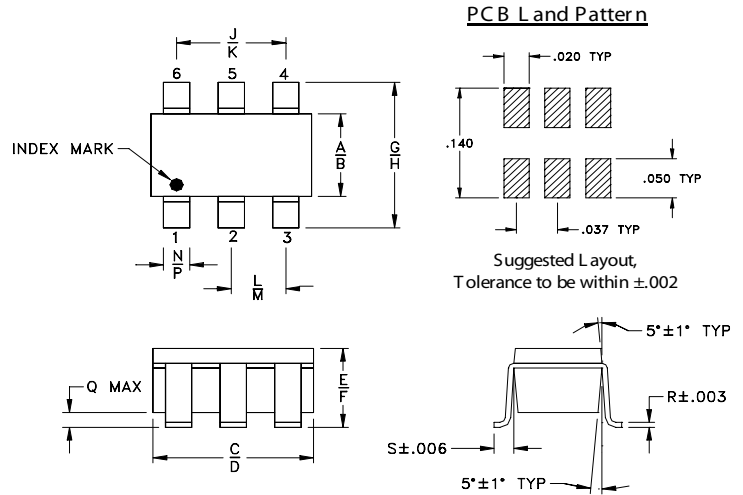
DEMOBOARD MCL P/N: TB-374  
SUGGESTED PCB LAYOUT (PL-232)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS 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

### 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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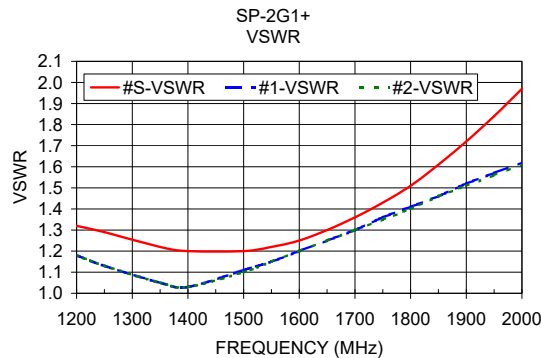
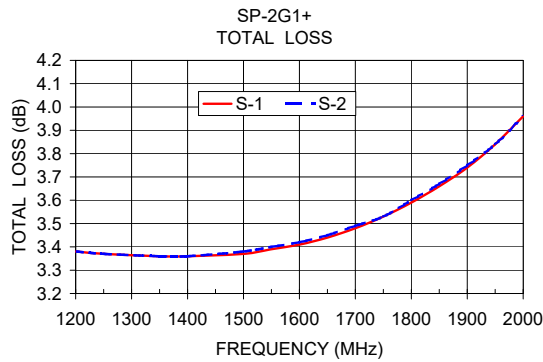
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### TYPICAL PERFORMANCE DATA AND CHARTS

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
1200.00	3.38	3.38	0.00	13.27	0.47	1.32	1.18	1.18
1250.00	3.37	3.37	0.00	14.62	0.50	1.29	1.13	1.13
1350.00	3.36	3.36	0.00	18.22	0.55	1.22	1.05	1.05
1400.00	3.36	3.36	0.00	20.78	0.57	1.20	1.03	1.03
1500.00	3.37	3.38	0.01	30.39	0.62	1.20	1.11	1.10
1550.00	3.39	3.40	0.01	42.25	0.65	1.22	1.15	1.15
1600.00	3.41	3.42	0.01	29.95	0.67	1.25	1.20	1.20
1650.00	3.44	3.45	0.01	24.27	0.69	1.30	1.25	1.25
1700.00	3.48	3.49	0.01	20.90	0.71	1.36	1.30	1.30
1750.00	3.53	3.53	0.01	18.48	0.71	1.43	1.36	1.35
1800.00	3.59	3.60	0.01	16.60	0.71	1.51	1.41	1.40
1850.00	3.66	3.67	0.00	15.07	0.72	1.61	1.46	1.46
1900.00	3.74	3.75	0.01	13.77	0.72	1.72	1.52	1.51
1950.00	3.84	3.84	0.00	12.66	0.75	1.84	1.57	1.56
2000.00	3.96	3.96	0.00	11.67	0.71	1.97	1.62	1.61

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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