



# THE DATASHEET OF SP-2G+





**SURFACE MOUNT**

# Power Splitter/Combiner

**SP-2G+**

2 Way-0° 50Ω 1420 to 1660 MHz

### FEATURES

- Low insertion loss, 0.4 dB typ.
- Good isolation, 28 dB typ.
- Good output VSWR, 1.15:1 typ.
- Good input VSWR, 1.25:1 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
- Mobile satellite
- PDC
- Defense & aeronautical

### ELECTRICAL SPECIFICATIONS AT 25°C

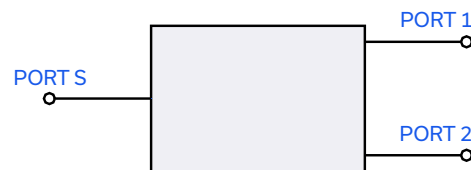
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		1420		1660	MHz
Insertion Loss (above 3.0 dB)	1420-1660	—	0.4	0.7	dB
Isolation	1420-1660	19	28	—	dB
Amplitude Unbalance	1420-1660	—	—	0.2	dB
Phase Unbalance	1420-1660	—	—	3	deg.
VSWR (Port S)	1420-1660	—	1.25	—	:1
VSWR (Port 1)	1420-1660	—	1.15	—	:1
VSWR (Port 2)	1420-1660	—	1.15	—	: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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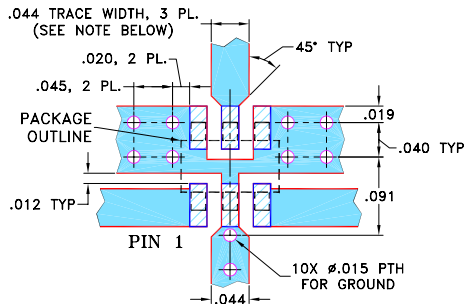
2 Way-0° 50Ω 1420 to 1660 MHz

### PIN CONNECTIONS

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

PRODUCT MARKING: N/A

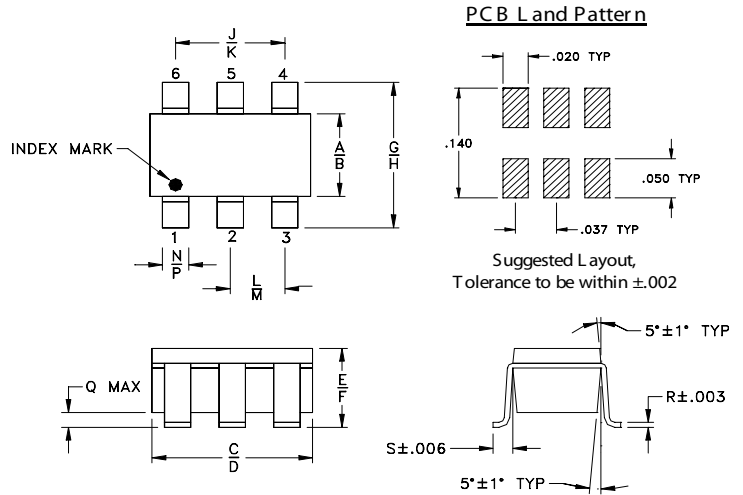
DEMOBOARD MCL P/N: TB-374  
SUGGESTED PCB LAYOUT (PL-232)



- 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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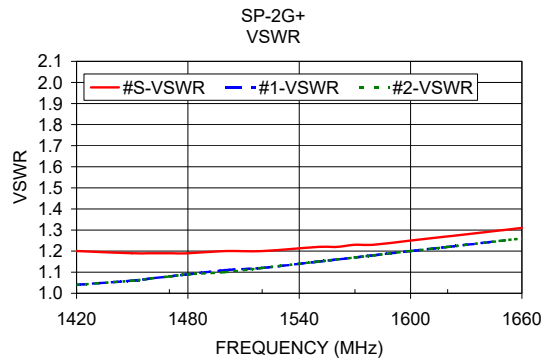
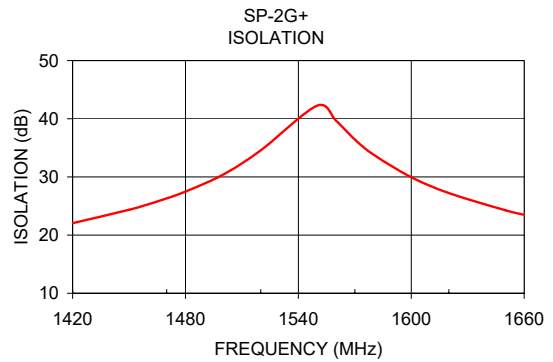
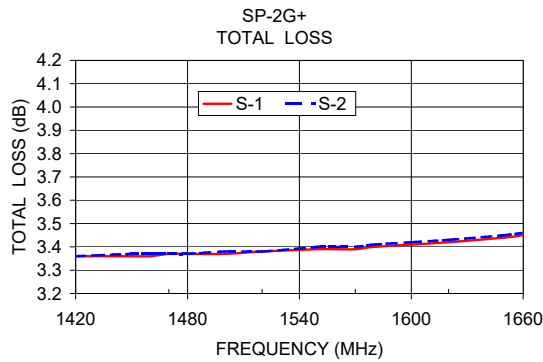
## SP-2G+

2 Way-0° 50Ω 1420 to 1660 MHz

### 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
1420.00	3.36	3.36	0.00	22.04	0.59	1.20	1.04	1.04
1450.00	3.36	3.37	0.01	24.35	0.60	1.19	1.06	1.06
1460.00	3.36	3.37	0.01	25.28	0.61	1.19	1.07	1.07
1470.00	3.37	3.37	0.01	26.31	0.61	1.19	1.08	1.08
1480.00	3.37	3.37	0.01	27.48	0.62	1.19	1.09	1.09
1500.00	3.37	3.38	0.01	30.39	0.62	1.20	1.11	1.10
1520.00	3.38	3.38	0.01	34.57	0.64	1.20	1.12	1.12
1550.00	3.39	3.40	0.01	42.25	0.65	1.22	1.15	1.15
1560.00	3.39	3.40	0.01	39.67	0.66	1.22	1.16	1.16
1570.00	3.39	3.40	0.01	36.43	0.66	1.23	1.17	1.17
1580.00	3.40	3.41	0.01	33.81	0.66	1.23	1.18	1.18
1600.00	3.41	3.42	0.01	29.95	0.67	1.25	1.20	1.20
1620.00	3.42	3.43	0.01	27.22	0.68	1.27	1.22	1.22
1650.00	3.44	3.45	0.01	24.27	0.69	1.30	1.25	1.25
1660.00	3.45	3.46	0.01	23.48	0.69	1.31	1.26	1.26

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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