

# Power Splitter/Combiner

## SCPQ-180+

2 Way-90° 50Ω 120 to 180 MHz



Generic photo used for illustration purposes only  
CASE STYLE: YY161

**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Maximum Ratings

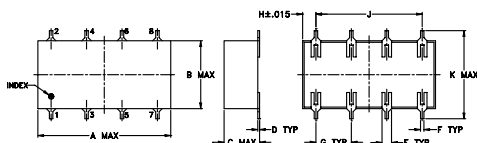
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.

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

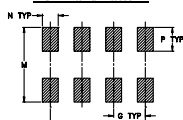
### Pin Connections

SUM PORT	1
PORT 1 (+90°)	2
PORT 2 (0°)	5
GROUND	3,4,7,8
50 OHM TERM EXTERNAL	6

### Outline Drawing



#### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

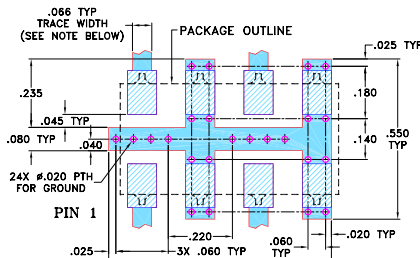
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
0.75	0.38	0.28	0.01	0.05	0.02	0.2
19.05	9.65	7.11	0.25	1.27	0.51	5.08

H	J	K	M	N	P	wt
0.075	0.6	0.45	0.47	0.1	0.15	grams
1.91	15.24	11.43	11.94	2.54	3.81	1.60

### Demo Board MCL P/N: TB-51 Suggested PCB Layout (PL-062)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002". 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

#### 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

### Features

- low insertion loss, 0.3 dB typ.
- good isolation, 22 dB typ.

### Applications

- VHF-TV
- IFsignal processing
- modulators

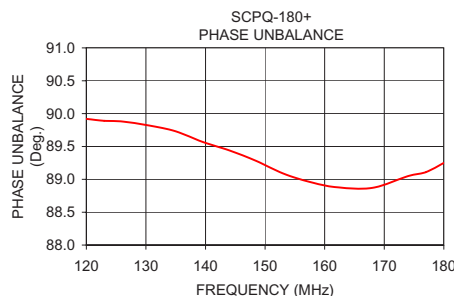
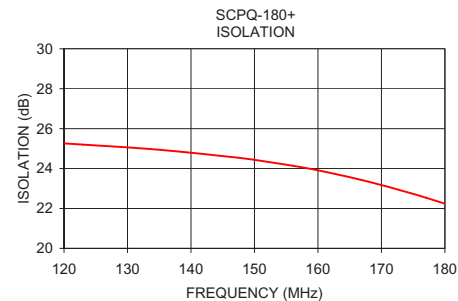
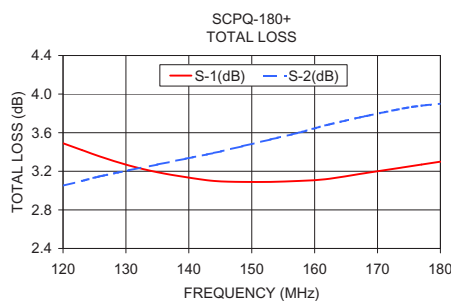
### Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)	INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB	PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)
$f_L$ - $f_U$	Typ. Min.	Typ. Max.	Max.	Max.
120-180	20 16	0.3 0.7	3	1.2

### Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
120.00	3.49	3.05	0.44	25.26	89.92	1.17	1.27	1.10
123.00	3.42	3.10	0.32	25.20	89.89	1.17	1.28	1.09
126.00	3.35	3.15	0.20	25.14	89.88	1.17	1.28	1.09
130.50	3.26	3.21	0.05	25.05	89.82	1.17	1.29	1.08
135.00	3.19	3.27	0.08	24.94	89.73	1.18	1.29	1.08
139.50	3.14	3.33	0.19	24.81	89.57	1.18	1.30	1.07
144.00	3.10	3.39	0.29	24.66	89.44	1.18	1.31	1.08
148.50	3.09	3.46	0.37	24.50	89.28	1.18	1.31	1.08
153.00	3.09	3.53	0.44	24.29	89.09	1.18	1.32	1.09
157.50	3.10	3.60	0.50	24.06	88.96	1.19	1.33	1.11
162.00	3.12	3.68	0.55	23.78	88.88	1.19	1.33	1.12
168.00	3.18	3.77	0.59	23.34	88.87	1.19	1.34	1.14
174.00	3.24	3.85	0.61	22.82	89.05	1.19	1.35	1.16
177.00	3.27	3.88	0.61	22.54	89.11	1.19	1.36	1.17
180.00	3.30	3.90	0.61	22.24	89.25	1.20	1.37	1.18

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



### electrical schematic

