

# Surface Mount Power Splitter/Combiner

## SCPQ-21.4+

2 Way-90° 50Ω 20 to 23 MHz

### Maximum Ratings

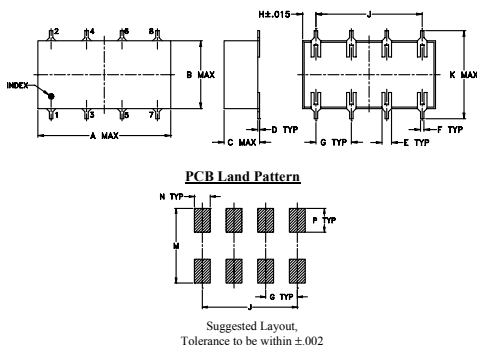
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.

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

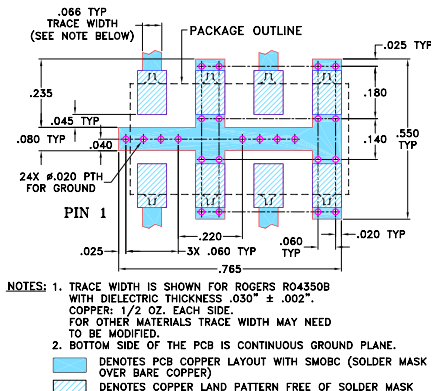
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.75	.38	.20	.010	.050	.020	.200
19.05	9.65	5.08	0.25	1.27	0.51	5.08
H	J	K	M	N	P	wt
.075	.600	.450	.470	.100	.150	grams
1.91	15.24	11.43	11.94	2.54	3.81	1.6

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



- NOTES:
- 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.
  - 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-Circuit's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

### Features

- low insertion loss, 0.15 dB typ.
- high isolation, 32 dB typ.

### Applications

- HF
- amateur radio
- instrumentation
- balanced amplifiers



Generic photo used for illustration purposes only

CASE STYLE: YY101

### +RoHS Compliant

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

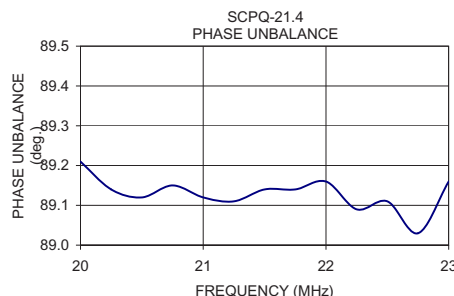
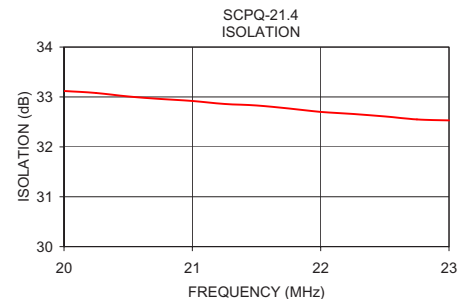
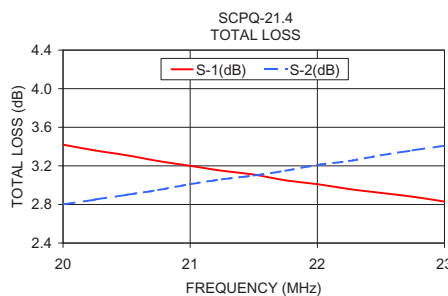
### Electrical Specifications

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.
20-23	32 25	0.15 0.5	2.5	1.0

### 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						
20.00	3.42	2.80	0.62	33.12	89.21	1.02	1.02	1.02
20.25	3.36	2.85	0.51	33.08	89.14	1.02	1.02	1.02
20.50	3.31	2.90	0.41	33.01	89.12	1.02	1.02	1.02
20.75	3.25	2.95	0.30	32.96	89.15	1.02	1.02	1.02
21.00	3.20	3.01	0.20	32.92	89.12	1.02	1.02	1.02
21.25	3.15	3.06	0.09	32.86	89.11	1.02	1.02	1.02
21.50	3.11	3.10	0.00	32.83	89.14	1.02	1.02	1.02
21.75	3.05	3.15	0.10	32.77	89.14	1.02	1.02	1.02
22.00	3.01	3.21	0.20	32.70	89.16	1.02	1.02	1.02
22.25	2.96	3.25	0.30	32.66	89.09	1.02	1.02	1.02
22.50	2.92	3.31	0.40	32.61	89.11	1.02	1.02	1.02
22.75	2.88	3.36	0.48	32.55	89.03	1.02	1.02	1.02
23.00	2.83	3.41	0.58	32.53	89.16	1.02	1.02	1.02

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



### electrical schematic

