



## SURFACE MOUNT

# Power Splitter/Combiner

## SCA-4-20+

4 Way-0° 50Ω 1000 to 2000 MHz

### FEATURES

- Wideband, 1000 to 2000 MHz
- High isolation, 20 dB typ.
- Small surface mount package (0.25"x0.3")
- Low profile (0.045")
- Welded leads



Generic photo used for illustration purposes only

CASE STYLE: DZ944

### +RoHS Compliant

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

### APPLICATIONS

- PCS
- GPS

### ELECTRICAL SPECIFICATIONS AT 25°C<sup>1</sup>

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1000		2000	MHz
Insertion Loss, above 6.0 dB	1000-2000		1.0	1.8	dB
	1500-1700		1.0	1.2	
	1700-2000		1.5	1.8	
Isolation	1000-2000	8	15		dB
	1500-1700	17	20		
	1700-2000	17	20		
Phase Unbalance	1000-2000			5	Degree
	1500-1700			5	
	1700-2000			5	
Amplitude Unbalance	1000-2000			0.9	dB
	1500-1700			0.8	
	1700-2000			0.9	

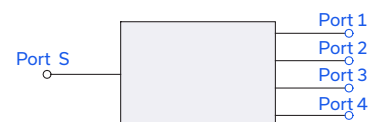
1. Tested on Evaluation Board TB-SCA-4-20+

### MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	5W max.
Internal Dissipation	0.25W max.

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

### ELECTRICAL SCHEMATIC





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Mini-Circuits

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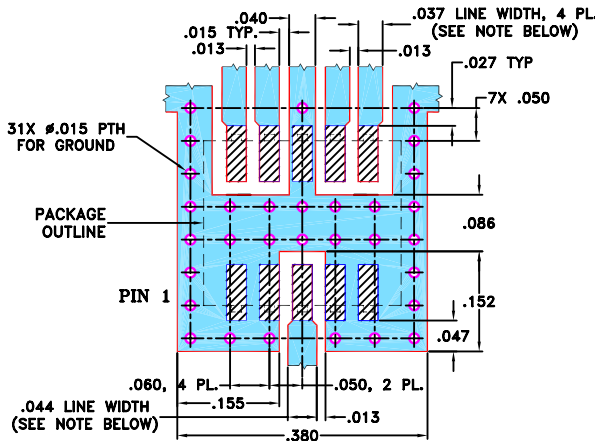
### PIN CONNECTIONS

SUM PORT (PORT S)	3
PORT 1	6
PORT 2	7
PORT 3	9
PORT 4	10
GROUND	1,2,4,5,8

### \*PRODUCT MARKING: SCA-4-20

\*Marking may contain other features or characters for internal lot control

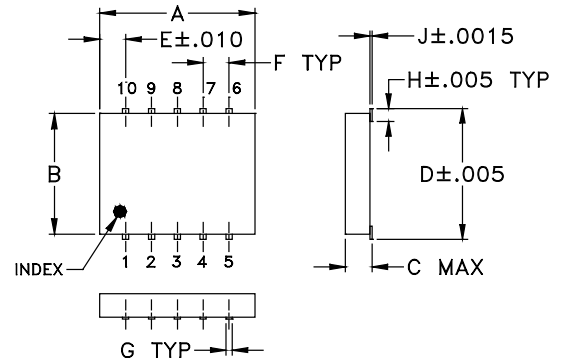
### EVALUATION BOARD MCL P/N: TB-SCA-4-20+ SUGGESTED PCB LAYOUT (PL-125)



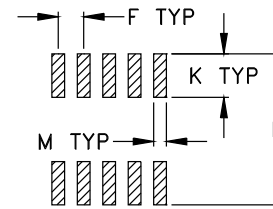
- NOTE:** 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS  $0.020 \pm 0.0015$ ", COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

### OUTLINE DRAWING



### PCB L and Pattern



Suggested Layout,  
Tolerance to be within  $\pm .002$

### OUTLINE DIMENSIONS (Inches/mm)

A	B	C	D	E	F	G
.30	.250	.052	.266	.050	.050	.012
7.62	6.35	1.32	6.76	1.27	1.27	0.30
H	J	K	L	M	wt	
.029	.004	.085	.296	.030	grams	
0.74	0.10	2.16	7.52	0.76	0.25	

### TAPE & REEL INFORMATION: F34





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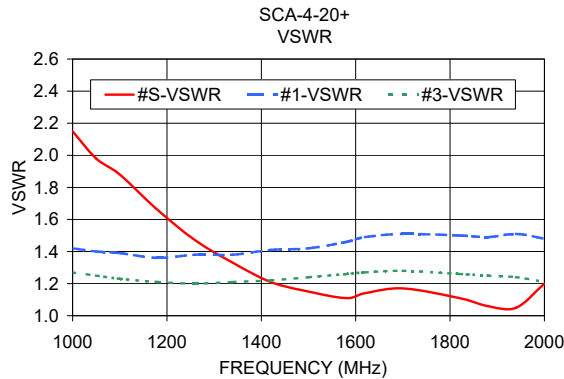
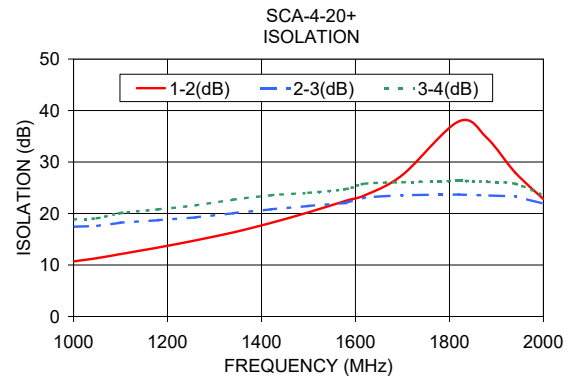
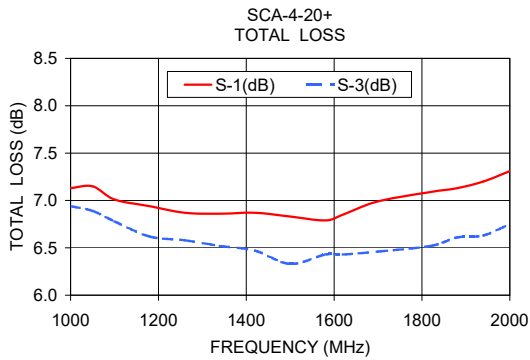
# SCA-4-20+

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### TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss <sup>1</sup> (dB)				Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbalance (deg.)	VSWR (:1)				
	S-1	S-2	S-3	S-4		1-2	1-3	2-3		S	1	2	3	4
1000.00	7.13	6.97	6.94	7.29	0.35	10.70	17.43	18.86	0.86	2.15	1.42	1.29	1.27	1.44
1050.00	7.15	6.96	6.89	7.25	0.36	11.34	17.57	19.08	0.31	1.98	1.40	1.27	1.25	1.41
1100.00	7.01	6.85	6.78	7.11	0.33	12.12	18.22	20.08	0.48	1.88	1.39	1.25	1.23	1.39
1180.00	6.94	6.73	6.62	7.00	0.38	13.40	18.71	20.81	0.93	1.66	1.36	1.25	1.21	1.37
1260.00	6.87	6.68	6.58	6.94	0.36	14.79	19.24	21.60	1.09	1.47	1.38	1.25	1.20	1.35
1340.00	6.86	6.63	6.52	6.92	0.39	16.34	20.06	22.68	0.82	1.33	1.38	1.25	1.21	1.36
1420.00	6.87	6.58	6.47	6.91	0.44	18.17	20.82	23.55	1.04	1.21	1.41	1.27	1.22	1.37
1500.00	6.83	6.44	6.33	6.84	0.51	20.24	21.46	24.01	0.89	1.15	1.42	1.29	1.24	1.38
1580.00	6.79	6.45	6.43	6.86	0.43	22.50	22.05	24.74	0.95	1.11	1.46	1.29	1.26	1.39
1620.00	6.85	6.49	6.43	6.88	0.45	23.56	23.13	25.80	1.38	1.14	1.49	1.31	1.27	1.42
1700.00	6.99	6.52	6.46	7.06	0.60	27.50	23.57	26.06	2.23	1.17	1.51	1.30	1.28	1.42
1820.00	7.09	6.56	6.52	7.14	0.62	37.89	23.68	26.33	1.50	1.11	1.50	1.28	1.26	1.42
1880.00	7.13	6.61	6.61	7.23	0.62	34.66	23.52	26.14	2.04	1.06	1.49	1.27	1.25	1.42
1940.00	7.20	6.67	6.63	7.27	0.64	27.96	23.34	25.78	1.94	1.05	1.51	1.24	1.24	1.42
2000.00	7.31	6.76	6.75	7.38	0.63	22.79	21.89	23.53	1.31	1.20	1.48	1.21	1.21	1.41

1. Total Loss = Insertion Loss + 6.0 dB splitter loss.



- 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)

