Surface Mount

Power Splitter/Combiner SCA-4-132+

4 Way-0° 50Ω 5 to 1300 MHz

The Big Deal

- Wideband, 5 to 1300 MHz
- High isolation, 25 dB
- Good matching VSWR, 1.2:1
- Excellent amplitude unbalance, 0.3 dB

CASE STYLE: DZ943

Product Overview

Mini-Circuits' SCA-4-132+ is a surface-mount 4-way 0˚ splitter/combiner covering the 5 to 1300 MHz frequency range, supporting bandwidth requirements for cellular, UHF/VHF receivers/transmitters and more. This model can handle up to 0.5W RF input power as a splitter and provides high isolation, good VSWR and low amplitude unbalance. The unit comes housed in a miniature plastic package (0.35 x 0.28 x 0.20") mounted on a 10-lead ceramic base with wrap-around terminations for excellent solderability.

Key Features

Feature	Advantages
Wideband, 5 to 1300 MHz	Suitable for many broadband applications.
Low insertion loss, 1.2 dB	The combination of 0.5W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power.
Good matching VSWR, 1.2:1	Provides excellent thru-path transmission with low signal reflection.
High isolation, 25 dB	Minimizes interference between input ports.
Low amplitude unbalance, 0.3 dB	Low amplitude unbalance makes this splitter/combiner Ideal for parallel path/multichannel systems.

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SCA-4-132+

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+RoHS Compliant

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200
13"	500,1000

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.5W max.
Internal Dissipation	0.375W max.

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

Pin Connections

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

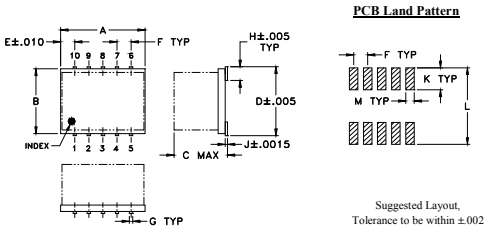
Features

- wideband, 5-1300 MHz
- high isolation, 25 dB typ.
- good matching VSWR, 1.20 typ.
- excellent amplitude unbalance, 0.3 dB typ.

Applications

- cellular
- UHF/VHF receivers/transmitters

Outline Drawing

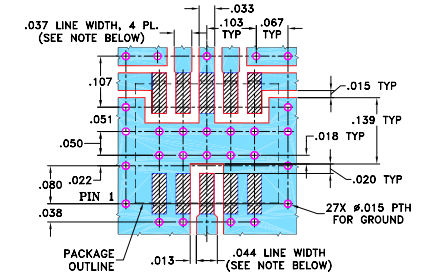


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.30	.250	.190	.266	.050	.050	.012
7.62	6.35	4.83	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	0.5

Demo Board MCL P/N: TB-238
Suggested PCB Layout (PL-124)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS 0.020" ± 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.

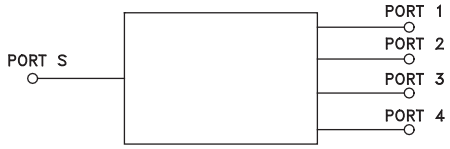
DENOTES PCB COPPER LAYOUT

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Electrical Specifications

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		1300	MHz
Insertion Loss (above theoretical 6.0 dB)	5-500	—	0.8	1.5	dB
	500-1000	—	1.2	2.4	
	1000-1300	—	2.0	2.8	
Isolation	5-1000	15	21	—	dB
	1000-1300	13	18	—	
Phase Unbalance	5-500	—	2.0	5	Degree
	500-1000	—	4.0	11	
	1000-1300	—	8.0	15	
Amplitude Unbalance	5-1000	—	0.5	0.9	dB
	1000-1300	—	0.7	1.2	
VSWR (Port S)	5-500	—	1.22	1.32	:1
	500-1300	—	1.28	1.49	
VSWR (Port 1-4)	5-500	—	1.57	1.79	:1
	500-1300	—	1.40	1.65	

Electrical Schematic



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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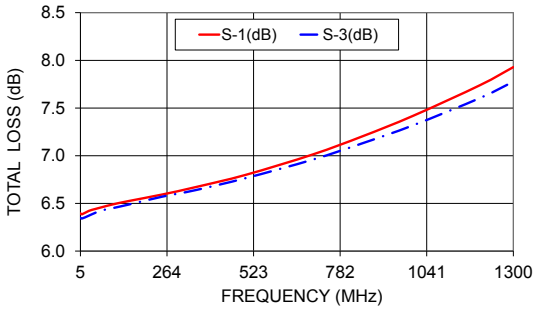
Typical Performance Data

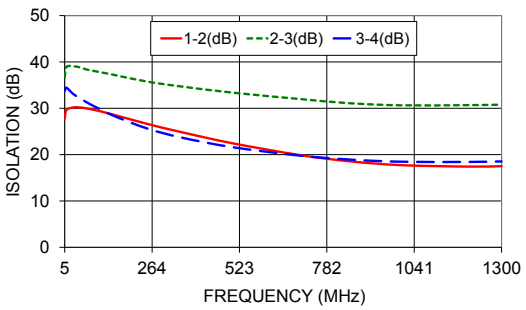
Freq. (MHz)	Total Loss[1] (dB)				Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1	S-2	S-3	S-4		1-2	1-3	2-3						
5	6.40	6.23	6.35	6.50	0.27	27.82	36.68	33.76	0.60	1.05	1.35	1.30	1.28	1.33
10	6.39	6.23	6.34	6.49	0.26	29.62	38.90	34.44	0.27	1.04	1.30	1.25	1.25	1.29
30	6.42	6.26	6.37	6.53	0.27	30.18	39.07	33.10	0.16	1.04	1.28	1.23	1.24	1.28
50	6.44	6.29	6.40	6.56	0.27	30.18	38.82	32.17	0.20	1.05	1.27	1.23	1.23	1.27
70	6.46	6.31	6.43	6.58	0.27	29.96	38.36	31.29	0.19	1.05	1.26	1.22	1.23	1.27
100	6.49	6.34	6.45	6.61	0.27	29.53	37.94	30.15	0.28	1.06	1.26	1.22	1.22	1.26
150	6.52	6.37	6.49	6.65	0.28	28.61	37.22	28.39	0.32	1.07	1.25	1.21	1.22	1.25
250	6.59	6.45	6.57	6.72	0.28	26.62	35.74	25.63	0.50	1.09	1.23	1.20	1.20	1.23
350	6.67	6.52	6.64	6.80	0.28	24.87	34.71	23.70	0.63	1.12	1.21	1.19	1.18	1.21
500	6.80	6.63	6.77	6.94	0.30	22.48	33.40	21.63	0.85	1.17	1.18	1.18	1.16	1.17
700	7.01	6.82	6.96	7.14	0.31	19.93	32.01	19.80	1.16	1.26	1.14	1.15	1.13	1.11
850	7.21	6.99	7.13	7.30	0.32	18.56	31.09	18.94	1.37	1.32	1.10	1.12	1.11	1.06
1000	7.42	7.17	7.32	7.49	0.32	17.74	30.64	18.47	1.65	1.34	1.06	1.09	1.10	1.03
1200	7.74	7.47	7.60	7.76	0.29	17.42	30.68	18.43	2.06	1.28	1.04	1.10	1.12	1.07
1300	7.93	7.65	7.78	7.91	0.28	17.51	30.78	18.54	2.29	1.22	1.06	1.13	1.14	1.10

1. Total Loss = Insertion Loss + 6dB splitter loss.

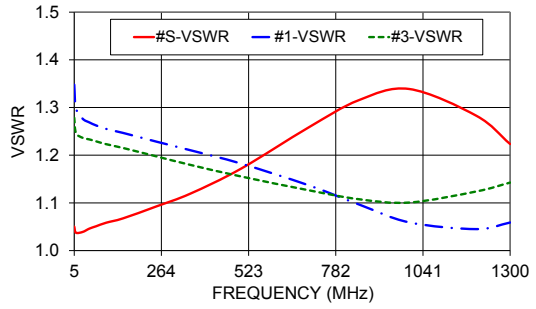
SCA-4-132+
TOTAL LOSS



SCA-4-132+
ISOLATION



SCA-4-132+
VSWR



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