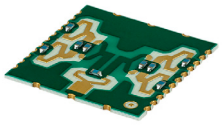
Surface Mount

Power Splitter/Combiner SEPS-8-153+

8 Way-0° 50Ω 6 to 15 GHz DC Pass

The Big Deal

- >2 octave bandwidth, 6 to 15 GHz
- Low insertion loss, 1.6 dB at 12.5 GHz
- High power handling, 4W as a splitter
- High isolation, 25 dB typ.
- Small size, 0.63 x 0.65 x 0.02”



CASE STYLE: RS1539

Product Overview

Mini-Circuits’ SEPS-8-153+ is a 50Ω 8-way 0˚ surface mount splitter/combiner covering the 6 to 15 GHz frequency range, supporting a wide variety of applications. This model can handle up to 4W RF input power as a splitter and provides low insertion loss, low amplitude unbalance, and good isolation. It comes housed mounted on a miniature, printed laminate (0.63 x 0.65 x 0.02”) with wrap-around terminations for excellent solderability.

Key Features

Feature	Advantages
Wideband, 6 to 15 GHz	>2 octave bandwidth supports a wide range of broadband applications.
Low insertion loss, 1.6 dB at 12.5 GHz	The combination of 4W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining signal power.
High power handling, 4W as a splitter	Supports a wide range of power requirements.
Low amplitude unbalance, 0.3 dB typ.	SEPS-8-153+ produces nearly equal output signals, ideal for parallel path / multichannel systems.
Good isolation, 25 dB	Minimizes interference between input ports.
Small size, 0.63 x 0.65 x 0.02”	Saves space in crowded PCB layouts.

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Power Splitter/Combiner

SEPS-8-153+

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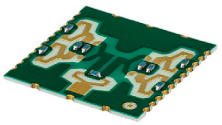

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+RoHS Compliant

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
13"	250

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	4W max.
Internal Dissipation	0.875W max.
DC Current	560 (70 mA each port)

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

Pad Connections

SUM PORT	27	PORT 5	17
PORT 1	4	PORT 6	18
PORT 2	5	PORT 7	21
PORT 3	8	PORT 8	22
PORT 4	9	GROUND	all other

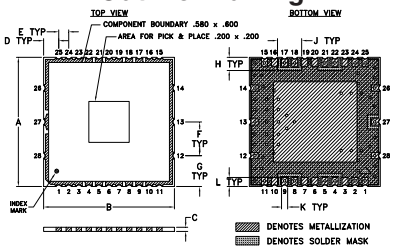
Features

- wideband, 6 to 15 GHz
- good isolation, 25 dB typ.
- aqueous washable
- model can be rated to 5 GHz

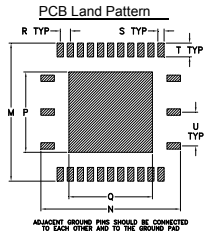
Applications

- WiMAX
- ISM
- instrumentation
- radar
- WLAN
- LTE

Outline Drawing



PCB Land Pattern



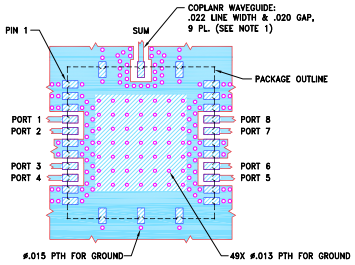
Suggested Layout,
Tolerance to be within±002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L
.630	.650	.020	.075	.050	.165	.150	.064	.120	.030	.044
16.00	16.51	0.51	1.91	1.27	4.19	3.81	1.63	3.05	0.76	1.12

M	N	P	Q	R	S	T	U	V	wt
.673	.693	.392	.415	.050	.031	.067	.165	--	grams
17.09	17.60	9.96	10.54	1.27	0.79	1.70	4.19	--	0.35

Demo Board MCL P/N: TB-590+
Suggested PCB Layout (PL-534)



NOTE:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010"±.001"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

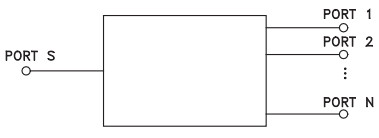
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Electrical Specifications at 25°C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Unit
Frequency Range		6		15	GHz
Insertion Loss (above theoretical 9.0 dB)	6 - 9	—	0.9	1.8	dB
	9 - 12.5	—	1.6	2.8	
	12.5 - 15	—	3.5	4.8	
Isolation	6 - 9	10	16	—	dB
	9 - 12.5	16	25	—	
	12.5 - 15	15	22	—	
Phase Unbalance	6-15	—	—	—	Degree
Amplitude Unbalance	6 - 9	—	0.2	0.8	dB
	9 - 12.5	—	0.3	1.2	
	12.5 - 15	—	1.1	1.9	
VSWR (Port S)	6 - 9	—	1.5	—	:1
	9 - 12.5	—	1.6	—	
	12.5 - 15	—	1.9	—	
VSWR (Port 1-8)	6 - 9	—	1.4	—	:1
	9 - 12.5	—	1.6	—	
	12.5 - 15	—	2.3	—	

Electrical Schematic



Notes

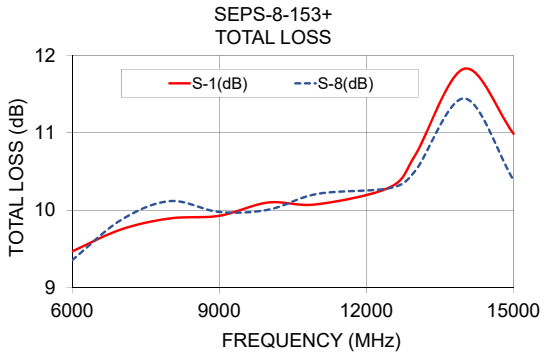
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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

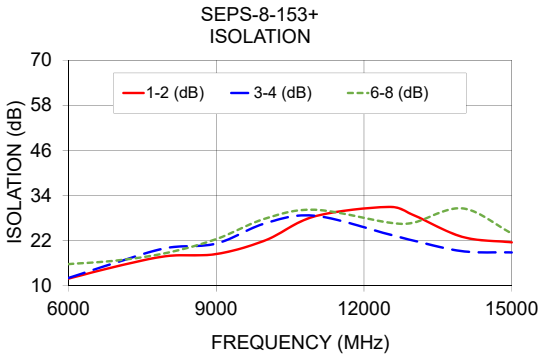
REV. OR
M164587
ED-17102502
SEPS-8-153+
WZ/CP/AM
200511

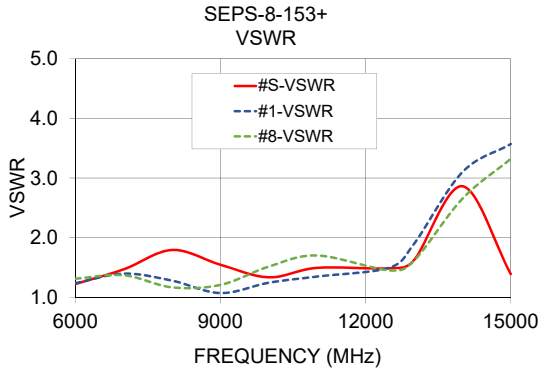
Typical Performance Data

Freq. (MHz)	Total Loss[1] (dB)						Ampl. Unbl. (dB)	Isolation (dB)				VSWR S	VSWR 1	VSWR 8
	S-1	S-2	S-3	S-4	S-6	S-8		1-2	1-3	3-4	6-8			
6000	9.47	9.17	9.67	9.84	9.49	9.35	0.30	11.89	15.79	12.05	15.75	1.22	1.24	1.31
7000	9.75	9.46	9.62	9.68	9.59	9.87	0.29	15.21	16.62	16.30	16.73	1.47	1.40	1.37
8000	9.89	9.71	9.95	9.84	9.95	10.12	0.18	17.88	18.61	20.05	18.74	1.79	1.28	1.17
9000	9.93	9.86	9.99	9.94	9.84	9.98	0.07	18.42	22.25	21.21	22.39	1.54	1.07	1.21
10000	10.10	10.06	9.96	10.12	9.75	10.01	0.03	22.08	27.84	26.62	27.87	1.33	1.24	1.51
11000	10.08	10.14	10.48	10.50	10.10	10.21	0.06	28.44	30.78	28.62	30.20	1.49	1.35	1.70
12500	10.30	10.53	10.47	10.19	10.19	10.29	0.23	30.96	27.62	23.69	26.81	1.49	1.50	1.45
13000	10.72	10.88	10.48	10.14	10.24	10.51	0.16	28.82	27.59	22.02	26.75	1.62	1.90	1.61
14000	11.83	12.08	11.50	11.00	11.38	11.44	0.25	22.98	31.06	19.18	30.57	2.86	3.10	2.65
15000	10.99	12.11	10.87	9.87	10.55	10.39	1.12	21.53	24.65	18.85	23.92	1.39	3.57	3.32

1. Total Loss = Insertion Loss + 9dB splitter theoretical loss.







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