DC Pass

Power Splitter/Combiner SEPS-2-63+

2 Way-0° 50Ω 680 to 6000 MHz

The Big Deal

- >3 octave bandwidth, 680 to 6000 MHz
- Low insertion loss, 1.0 dB
- Small size, 1.25 x 1.0 x 0.2”

CASE STYLE: JF1258

Product Overview

Mini-Circuits’ SEPS-2-63+ is a 50Ω 2-way 0˚ surface mount splitter/combiner covering the 680 to 6000 MHz frequency range, supporting a wide variety of applications. This model can handle up to 5W RF input power as a splitter and provides low insertion loss, low phase and amplitude unbalance, and good isolation. Housed in a miniature, shielded package (1.25 x 1.0 x 0.2”) with wrap-around terminations this unit interfaces with gold over nickel plate termination finish.

Key Features

Feature	Advantages
Wideband, 680 to 6000 MHz	>3 octave bandwidth supports a wide range of broadband applications.
Low insertion loss, 1.0 dB	The combination of 5W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining signal power.
Low unbalance: • 0.2 dB amplitude unbalance • 1.5˚ phase unbalance	SEPS-2-63+ produces nearly equal output signals, ideal for parallel path / multichannel systems.
Good isolation, 22 dB	Minimizes interference between input ports.
Good output matching VSWR, 1.3:1 typ.	Provides excellent thru-path transmission with low signal reflection.
Small size, 1.25 x 1.0 x 0.2”	Saves space in crowded PCB layouts.

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Generic photo used for illustration purposes only

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+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)	5W max.
Internal Dissipation	0.4W max.
DC Current	1.5A (750 mA for each port)

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

Pin Connections

SUM PORT	17
PORT 1	4
PORT 2	8
GROUND	all others

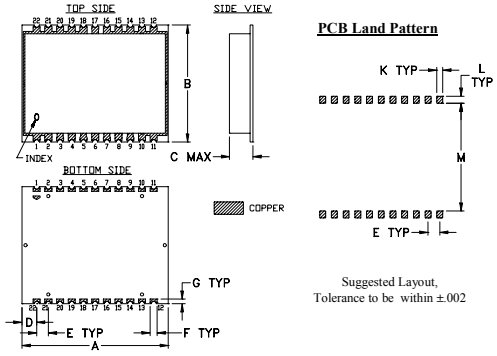
Features

- wideband 680-6000 MHz
- good output matching, VSWR 1.3 typ.
- excellent amplitude unbalance, 0.2 dB typ.

Applications

- SATCOM
- broadband wireless
- test and measurement
- wireless telecom

Outline Drawing



Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

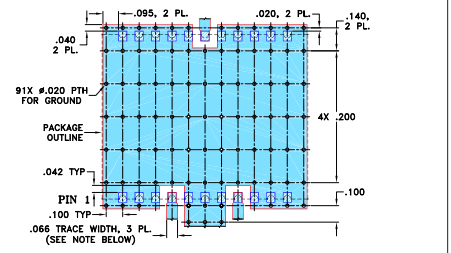
A	B	C	D	E	F	G
1.250	1.000	.200	.125	.100	.060	.040
31.75	25.40	5.08	3.18	2.54	1.52	1.02

H	J	K	L	M	wt
--	--	.050	.060	.920	grams
--	--	1.27	1.52	23.37	4.4

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		680		6000	MHz
Insertion Loss Above 3.0 dB	680 - 1200	—	0.6	1.0	dB
	1200 - 5000	—	0.8	1.5	
	5000 - 6000	—	1.0	2.5	
Isolation	680 - 1200	10	17.0	—	dB
	1200 - 6000	17	22.0	—	
Phase Unbalance	680 - 1200	—	0.3	2.0	Degree
	1200 - 6000	—	1.5	5.0	
Amplitude Unbalance	680 - 1200	—	0.1	0.4	dB
	1200 - 6000	—	0.2	0.6	
VSWR (Port S)	680 - 1200	—	1.6	2.0	:1
	1200 - 6000	—	1.5	1.82	
VSWR (Port 1-2)	680 - 6000	—	1.3	1.6	:1

Demo Board MCL P/N: TB-760+
Suggested PCB Layout (PL-402)

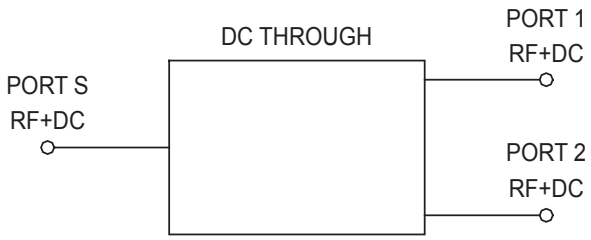


NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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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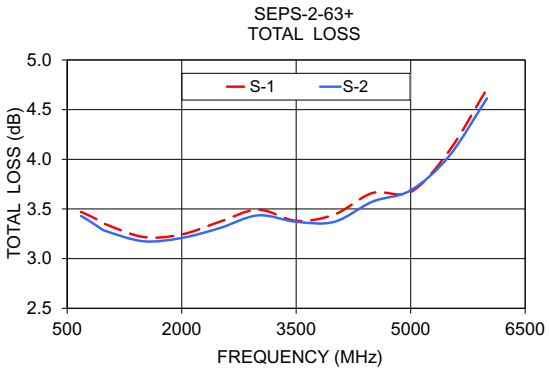
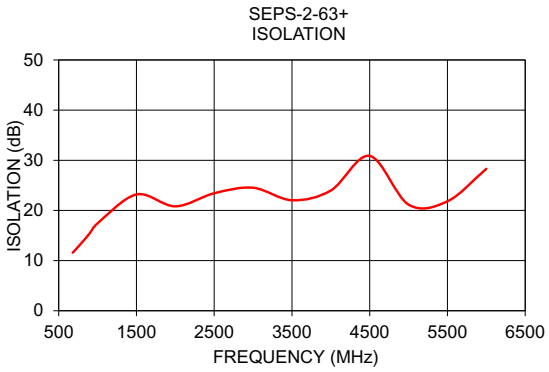
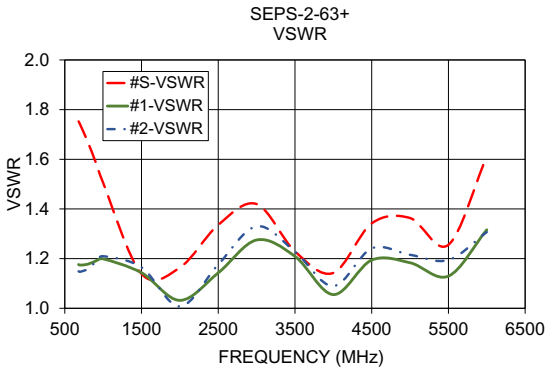
Typical Performance Data

Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
680	3.47	3.43	0.04	11.58	0.27	1.75	1.18	1.15
700	3.46	3.42	0.04	11.91	0.26	1.74	1.17	1.15
800	3.43	3.37	0.05	13.63	0.18	1.67	1.18	1.16
900	3.39	3.32	0.07	15.47	0.10	1.59	1.19	1.19
1000	3.35	3.28	0.07	17.43	0.01	1.51	1.20	1.21
1500	3.22	3.17	0.04	23.19	0.01	1.14	1.14	1.17
2000	3.24	3.21	0.04	20.82	0.01	1.16	1.03	1.01
2500	3.37	3.31	0.06	23.43	0.21	1.34	1.14	1.18
3000	3.49	3.44	0.06	24.53	0.12	1.42	1.28	1.33
3500	3.38	3.37	0.01	22.04	0.18	1.23	1.21	1.23
4000	3.44	3.37	0.07	23.97	0.36	1.14	1.06	1.09
4500	3.66	3.57	0.09	30.87	0.11	1.34	1.19	1.24
5000	3.67	3.69	0.02	21.15	0.12	1.36	1.18	1.22
5500	4.08	4.03	0.05	21.83	0.41	1.26	1.13	1.19
6000	4.71	4.61	0.10	28.30	0.21	1.61	1.32	1.31

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







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