Surface Mount

Power Splitter/Combiner CDP-2-122W-75+

2 Way-0° 75Ω 1 to 1250 MHz

CASE STYLE: TT1491-1

The Big Deal

- Wideband, 1 to 1250 MHz
- Low insertion loss, 0.8 dB
- High isolation, 21 dB
- Aqueous washable

Product Overview

Mini-Circuits' CDP-2-122W-75+ is a 75Ω 2-way 0˚ surface-mount splitter/combiner covering the 1 to 1250 MHz frequency range, supporting bandwidth requirements for DOCSIS® 3.1 systems and equipment as well as other broadband applications. This model can handle up to 1W RF input power as a splitter and provides low insertion loss, high isolation, and low phase and amplitude unbalance. It features core and wire construction mounted on a six-lead printed laminate base (0.26 x 0.31 x 0.13") with wrap-around terminations for excellent solderability. It also features Mini-Circuits' TopHat® feature for faster, more accurate pick-and-place assembly and easier visual inspection.

Key Features

Feature	Advantages
Wideband, 1 to 1250 MHz	Suitable for many broadband applications; meets upstream and downstream bandwidth requirements for DOCSIS® 3.1 systems and equipment.
Low insertion loss, 0.8 dB	The combination of 1W power handling and low insertion loss makes this model a suitable candidate for distributing signals while maintaining excellent transmission of signal power.
Low unbalance: • 0.6 dB amplitude unbalance • 4˚ phase unbalance	CDP-2-122W-75+ produces nearly equal output signals, ideal for parallel path / multichannel systems.
Good isolation, 21 dB	Minimizes interference between input ports.
Good VSWR, 1.2:1 typ.	Provides excellent matching with minimal signal reflection.
TopHat® feature	Improves speed and accuracy of pick-and-place assembly and provides easier visual inspection.

Surface Mount top hat®
Power Splitter/Combiner CDP-2-122W-75+

2 Way-0° 75Ω 1 to 1250 MHz

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

Features

- wideband, 1 to 1250 MHz
- low insertion loss, 0.8 dB typ.
- good isolation, 21 dB typ.
- aqueous washable

Applications

- DOCSIS® 3.1 Systems
- cellular
- VHF/UHF
- communication systems

Available Tape and Reel at no extra cost

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

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1		1250	MHz
Insertion Loss Above 3.0 dB	1-10	—	0.4	0.9	dB
	10-870	—	0.8	1.6	
	870-1000	—	1.1	1.8	
	1000-1250	—	1.5	2.2	
Isolation	1-10	17	23.0	—	dB
	10-870	15	21.0	—	
	870-1000	15	19.0	—	
	1000-1250	15	19.0	—	
Phase Unbalance	1-10	—	2.0	5.0	Degree
	10-870	—	1.5	4.0	
	870-1000	—	1.5	4.0	
	1000-1250	—	1.0	4.0	
Amplitude Unbalance	1-10	—	0.25	0.6	dB
	10-870	—	0.20	0.5	
	870-1000	—	0.25	0.6	
	1000-1250	—	0.30	0.7	
VSWR (Port S)	1-10	—	1.16	1.35	:1
	10-870	—	1.15	1.4	
	870-1000	—	1.20	1.45	
	1000-1250	—	1.20	1.45	
VSWR (Port 1-2)	1-10	—	1.25	1.50	:1
	10-870	—	1.15	1.35	
	870-1000	—	1.25	1.40	
	1000-1250	—	1.30	1.60	

1. Mainline loss includes theoretical power loss at coupled port.

Maximum Ratings

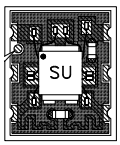
Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.
Internal Dissipation	0.125W max.

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

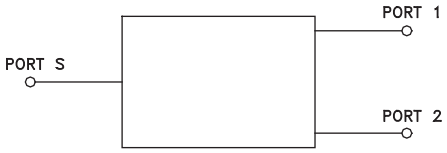
Pin Connections

Function	Pin Number
SUM PORT	1
PORT 1	3
PORT 2	4
GROUND	6
NOT USED	2,5

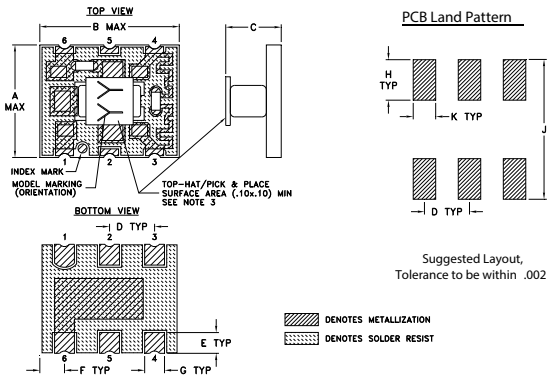
Product Marking



Electrical Schematic



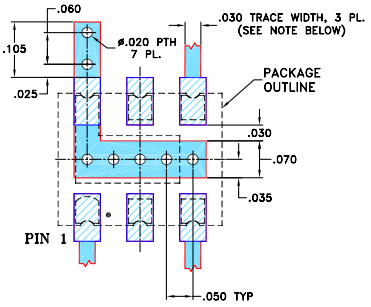
Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	wt.
.255	.310	.133	.100	.050	.055	.044	.090	.310	.050	grams
6.48	7.87	3.38	2.54	1.27	1.40	1.12	2.29	7.87	1.27	0.35

Demo Board MCL P/N: TB-565+
Suggested PCB Layout (PL-327)



NOTES: 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)

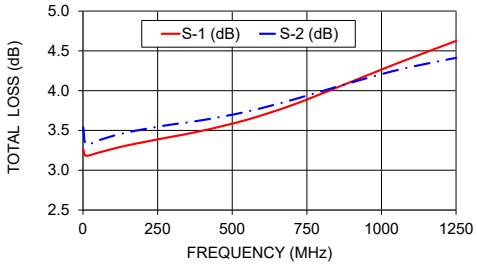
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Typical Performance Data

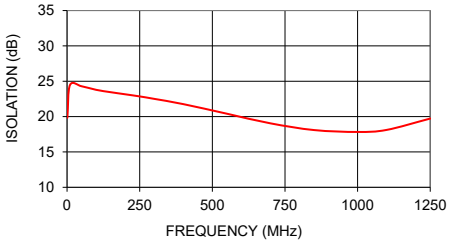
Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
1	3.26	3.54	0.28	19.84	1.75	1.25	1.24	1.36
10	3.18	3.33	0.15	24.46	0.32	1.17	1.05	1.08
50	3.22	3.37	0.15	24.29	0.16	1.16	1.03	1.06
100	3.27	3.43	0.16	23.79	0.32	1.15	1.02	1.06
150	3.31	3.48	0.16	23.45	0.42	1.14	1.02	1.05
200	3.35	3.51	0.16	23.15	0.54	1.14	1.03	1.05
250	3.39	3.55	0.16	22.85	0.64	1.15	1.03	1.03
300	3.42	3.58	0.15	22.51	0.76	1.15	1.04	1.02
400	3.50	3.63	0.13	21.76	0.93	1.15	1.06	1.01
550	3.64	3.74	0.10	20.41	1.14	1.13	1.09	1.05
700	3.82	3.88	0.07	19.04	1.26	1.18	1.12	1.12
850	4.04	4.05	0.01	18.09	1.18	1.24	1.16	1.18
1000	4.27	4.21	0.06	17.83	0.88	1.24	1.19	1.23
1100	4.41	4.30	0.11	18.12	0.60	1.26	1.22	1.26
1250	4.63	4.41	0.21	19.72	0.06	1.21	1.26	1.28

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

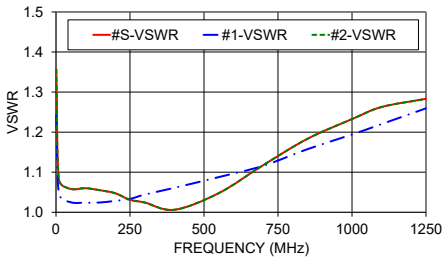
CDP-2-122W-75+
TOTAL LOSS



CDP-2-122W-75+
ISOLATION



CDP-2-122W-75+
VSWR



Additional 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