

Surface Mount

# Power Splitter/Combiner

CDP-2-13-75+

2 Way-0° 75Ω

5 to 1000 MHz

## The Big Deal

- High performance at a very low cost
- Very small form size (0.255" x 0.310" x 0.133" high)



CASE STYLE: TT1491-1

## Product Overview

The CDP-2-13-75+ is a 2-way power splitter featuring a flat, laser-marked, "Top-Hat" cover for faster pick and place manufacturing throughput. Installed as a single component with a small footprint (0.255" x 0.310") and low height (0.133"), it utilizes square-core, all-welded construction to handle up to 1W RF power. The open-style case is aqueous washable and RoHS compliant.

Feature	Advantages
Wide bandwidth at a low cost	5-1000 MHz bandwidth accomodates forward & return CATV transmission bands
Low insertion loss, Excellent return loss	Excellent VSWR (1.01-1.23 in/1.10-1.25 out) for low-loss performance in both directions
Very good isolation	20-25 dB for consistent performance under changing loads
Very good amplitude and phase unbalance	0.2 dB typ. amplitude unbalance and 3.0° typ. phase unbalance help reduce unwanted noise and harmonics



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IF/RF MICROWAVE COMPONENTS

For detailed performance specs  
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**Notes:** 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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](http://www.minicircuits.com/MCLStore/terms.jsp).

# Power Splitter/Combiner

## CDP-2-13-75+

2 Way-0° 75Ω 5 to 1000 MHz



### Maximum 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

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

### Features

- wideband, 5 to 1000 MHz
- low insertion loss, 0.6 dB typ.
- excellent matching return loss, 20 dB typ.
- aqueous washable

### Applications

- cellular
- VHF/UHF
- communication systems
- CATV

CASE STYLE: TT1491-1  
PRICE: \$1.95 ea. QTY. (10-49)

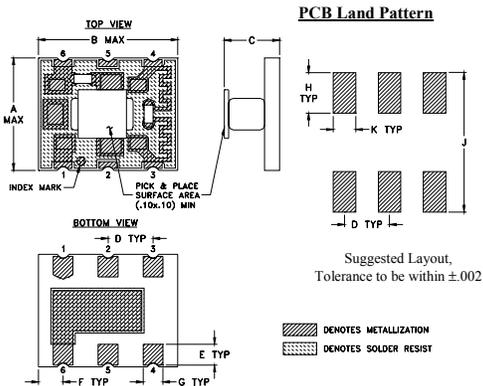
**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

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

### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		1000	MHz
Insertion Loss Above 3.0 dB	5-50	—	0.2	0.5	
	50-500	—	0.6	0.7	dB
	500-1000	—	0.8	1.1	
Isolation	5-50	20	24	—	
	50-500	20	25	—	dB
	500-1000	18	20	—	
Phase Unbalance	5-50	—	—	2.0	
	50-500	—	—	3.0	Degree
	500-1000	—	—	5.0	
Amplitude Unbalance	5-50	—	—	0.3	
	50-500	—	—	0.3	dB
	500-1000	—	—	0.3	
VSWR (Port S)	5-50	—	1.05	1.2	
	50-500	—	1.10	1.3	:1
	500-1000	—	1.25	1.4	
VSWR (Port 1-2)	5-50	—	1.20	1.5	
	50-500	—	1.15	1.3	:1
	500-1000	—	1.10	1.3	

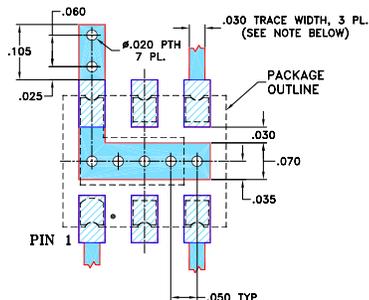
### Outline Drawing



### Outline Dimensions (inch/mm)

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

### 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

### Electrical Schematic



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

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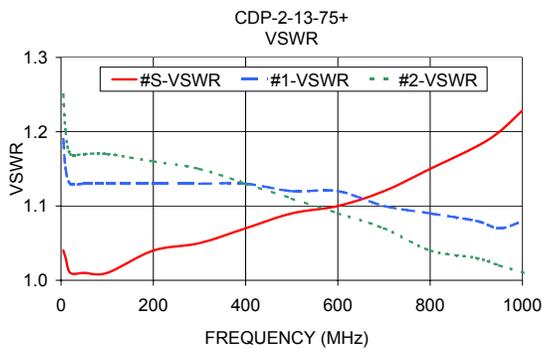
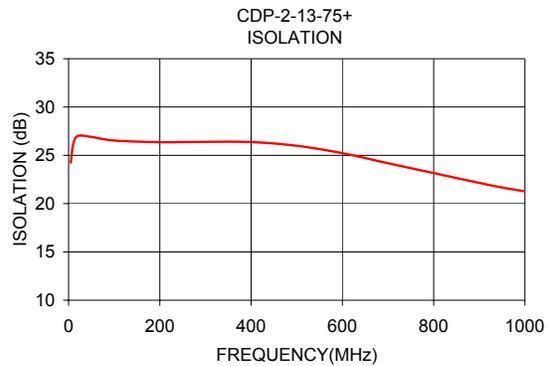
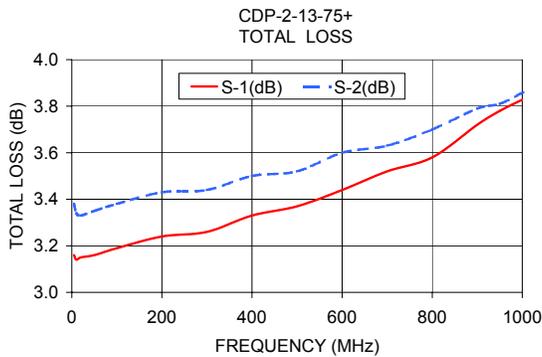
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## Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
5.00	3.16	3.38	0.22	24.25	0.59	1.04	1.19	1.25
10.00	3.14	3.34	0.20	26.11	0.36	1.03	1.15	1.20
20.00	3.15	3.33	0.18	27.00	0.15	1.01	1.13	1.17
50.00	3.16	3.35	0.18	26.91	0.05	1.01	1.13	1.17
100.00	3.19	3.38	0.19	26.53	0.20	1.01	1.13	1.17
200.00	3.24	3.43	0.19	26.36	0.40	1.04	1.13	1.16
300.00	3.26	3.44	0.18	26.39	0.51	1.05	1.13	1.15
400.00	3.33	3.50	0.18	26.37	0.77	1.07	1.13	1.13
500.00	3.37	3.52	0.15	25.99	0.75	1.09	1.12	1.11
600.00	3.44	3.60	0.16	25.22	0.88	1.10	1.12	1.09
700.00	3.52	3.63	0.11	24.18	0.96	1.12	1.10	1.07
800.00	3.58	3.70	0.12	23.16	0.71	1.15	1.09	1.04
900.00	3.72	3.79	0.07	22.14	0.84	1.18	1.08	1.03
950.00	3.78	3.81	0.03	21.67	0.51	1.20	1.07	1.02
1002.00	3.83	3.86	0.03	21.25	0.17	1.23	1.08	1.01

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



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