

# Power Splitter/Combiner

## TCP-2-10-75+

2 Way-0° 75Ω 5 to 1000 MHz



Generic photo used for illustration purposes only

CASE STYLE: DB714

**+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"	20, 50, 100, 200, 500
13"	1000, 2000

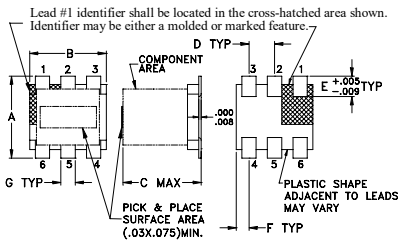
### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.5W max.
Permanent damage may occur if any of these limits are exceeded.	

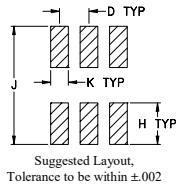
### Pin Connections

SUM PORT	6
PORT 1	3
PORT 2	4
GROUND	1
CONNECT	2,5
EXT. RESISTOR 150Ω	3,4
EXT. CAPACITOR 1.5pF	2 OR 5 TO GND

### Outline Drawing



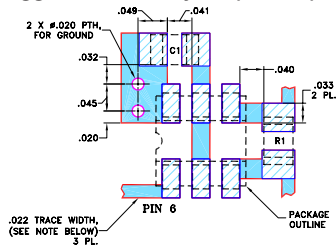
### PCB Land Pattern



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	
.160	.150	.160	.050	.040	.025	
4.06	3.81	4.06	1.27	1.02	0.64	
G	H	J	K			wt
.028	.065	.190	.030			grams
0.71	1.65	4.83	0.76			0.15

### Demo Board MCL P/N: TB-124 Suggested PCB Layout (PL-002)



RESISTOR R1: 150 Ohm, 0805 SIZE  
CAPACITOR C1: 1.5 pF, 0805 SIZE

- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; COPPER: 1 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- 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

### Notes

- 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.
- 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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### Features

- low insertion, 0.3 dB typ.
- excellent amplitude unbalance, 0.2 dB typ.
- very good phase unbalance, 1.0 deg. typ.
- external resistor & capacitor required
- aqueous washable
- leads for excellent solderability
- low cost

### Applications

- CATV
- cellular

### Electrical Specifications

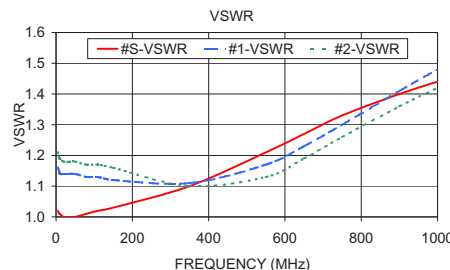
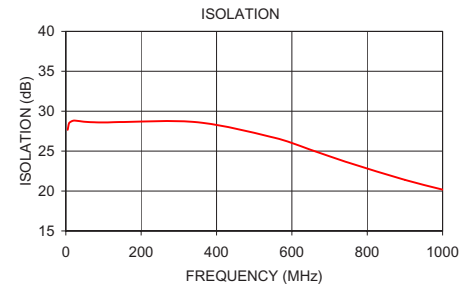
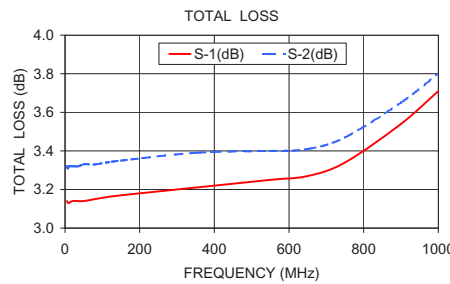
FREQ. RANGE (MHz)	ISOLATION (dB)						INSERTION LOSS (dB) ABOVE 3.0 dB						PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)		
	L		M		U		L		M		U		L	M	U	L	M	U
f <sub>L</sub> -f <sub>U</sub>	Typ.	Min	Typ.	Min	Typ.	Min	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
5-1000	24	14	29	19	30	16	0.3	1.4	0.3	0.9	0.6	1.3	6.0	4.0	3.0	1.2	0.6	0.5

L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]

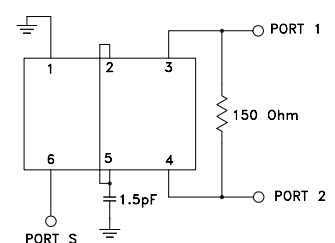
### Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR <sub>S</sub>	VSWR <sub>1</sub>	VSWR <sub>2</sub>
	S-1	S-2						
5.00	3.14	3.32	0.19	27.67	0.39	1.02	1.16	1.21
8.00	3.13	3.31	0.18	28.39	0.22	1.01	1.15	1.19
10.00	3.13	3.32	0.18	28.59	0.14	1.01	1.14	1.19
20.00	3.14	3.32	0.18	28.82	0.06	1.00	1.14	1.18
35.00	3.14	3.32	0.19	28.77	0.04	1.00	1.14	1.18
50.00	3.14	3.33	0.18	28.68	0.01	1.00	1.14	1.18
80.00	3.15	3.33	0.18	28.61	0.08	1.01	1.13	1.17
110.00	3.16	3.34	0.18	28.60	0.16	1.02	1.13	1.17
150.00	3.17	3.35	0.18	28.65	0.12	1.03	1.12	1.16
350.00	3.21	3.39	0.18	28.62	0.20	1.10	1.11	1.10
550.00	3.25	3.40	0.15	26.72	0.34	1.21	1.17	1.13
650.00	3.27	3.41	0.14	25.16	0.31	1.27	1.23	1.19
750.00	3.34	3.47	0.13	23.56	0.39	1.33	1.30	1.26
900.00	3.54	3.65	0.11	21.40	0.55	1.40	1.41	1.36
1000.00	3.71	3.80	0.09	20.18	0.68	1.44	1.48	1.42

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



### electrical schematic



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