

# Power Splitter/Combiner

## SYPS-3-12W-75+

3 Way-0° 75Ω 5 to 1200 MHz

### Maximum Ratings

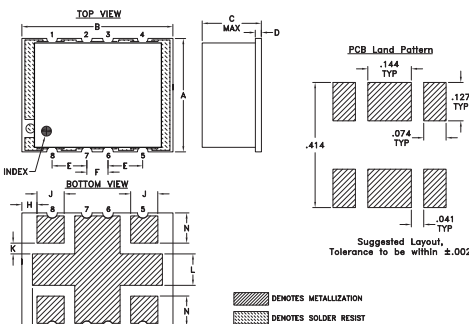
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.
Internal Dissipation	0.15W max.

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

### Pin Connections

SUM PORT	8
PORT 1	1
PORT 2	4
PORT 3	5
GROUND	2,3,6,7

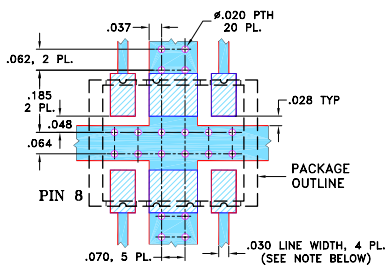
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
.38	.50	.25	.020	.115	.070	.035	.050
9.65	12.70	6.35	0.51	2.92	1.78	0.89	1.27
J	K	L	M	N			wt
.090	.040	.105	.140	.095			grams
2.29	1.02	2.67	3.56	2.41			0.80

### Demo Board MCL P/N: TB-361+ Suggested PCB Layout (PL-229)



#### NOTE:

- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .050" ± .002"; COPPER: 1/2 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 loss 0.7 dB typ.
- good isolation, 25 dB typ.
- wide frequency band, 5 to 1200 MHz, usable 5-1300 MHz
- low amplitude unbalance, 0.2 dB typ.
- low phase unbalance, 2.0 deg. typ.

### Applications

- CATV
- VHF/UHF
- cellular
- DOCSIS 3.1 system



Generic photo used for illustration purposes only

CASE STYLE: AH202

#### +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"	200

### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		1200	MHz
Insertion Loss, above 4.8 dB	5-20	—	0.6	1.0	dB
	20-860	—	0.7	1.5	
	860-1200	—	1.2	2.2	
Isolation	5-20	20	26	—	dB
	20-860	18	25	—	
Isolation	860-1200	17	20	—	dB
	5-20	—	—	—	
Phase Unbalance	20-860	—	1.5	3.0	Degree
	860-1200	—	3.0	5.0	
Amplitude Unbalance	5-860	—	0.1	0.1	dB
	860-1200	—	0.3	0.8	
VSWR (Port S)	5-20	—	1.0	1.7	:1
	20-860	—	1.2	1.3	
VSWR (Port S)	860-1200	—	1.25	1.5	:1
	5-20	—	1.3	1.3	
VSWR (Port 1 and Port 2)	20-860	—	1.2	1.3	:1
	860-1200	—	1.25	1.4	

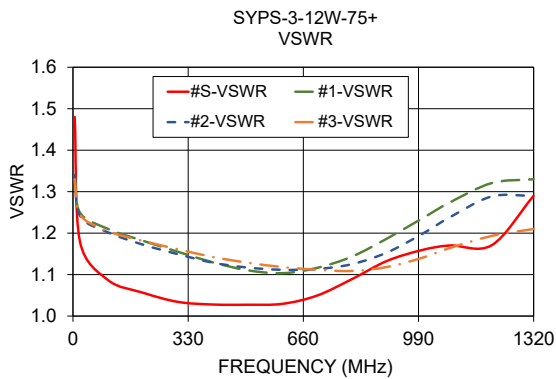
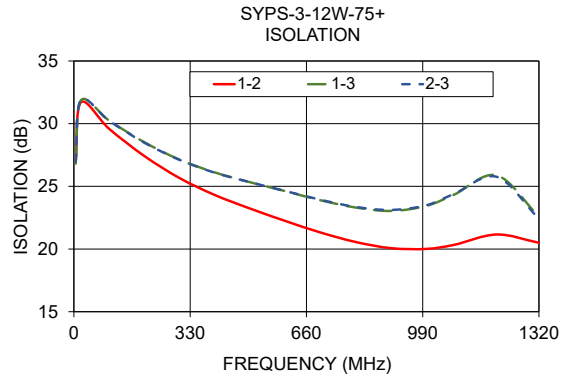
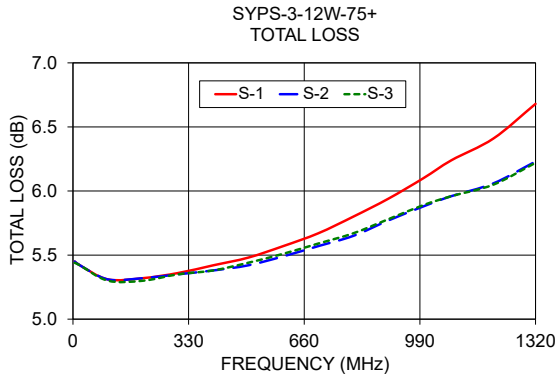
### electrical schematic



### Typical Performance Data

Freq. (MHz)	Total Loss <sup>1</sup> (dB)			Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR	VSWR	VSWR	VSWR
	S-1	S-2	S-3		S	1	2		3			
5.00	5.45	5.45	5.44	0.01	26.93	26.81	26.95	0.02	1.48	1.34	1.34	1.33
20.00	5.42	5.42	5.42	0.01	31.70	31.86	31.88	0.11	1.18	1.25	1.24	1.25
100.00	5.31	5.31	5.30	0.01	29.59	30.25	30.23	0.12	1.09	1.21	1.20	1.20
200.00	5.32	5.32	5.30	0.02	27.42	28.52	28.48	0.23	1.06	1.18	1.17	1.18
300.00	5.36	5.35	5.35	0.02	25.66	27.13	27.11	0.22	1.03	1.16	1.15	1.16
400.00	5.42	5.38	5.38	0.04	24.31	26.11	26.09	0.36	1.03	1.13	1.13	1.14
500.00	5.48	5.42	5.44	0.06	23.23	25.33	25.33	0.27	1.03	1.11	1.12	1.13
600.00	5.57	5.49	5.51	0.07	22.24	24.62	24.63	0.34	1.03	1.10	1.11	1.12
700.00	5.67	5.57	5.59	0.10	21.32	23.89	23.93	0.23	1.05	1.12	1.11	1.11
800.00	5.80	5.65	5.67	0.14	20.56	23.31	23.36	0.17	1.09	1.14	1.13	1.11
900.00	5.94	5.77	5.78	0.17	20.07	23.04	23.12	0.12	1.13	1.19	1.15	1.12
1000.00	6.10	5.88	5.89	0.22	20.01	23.44	23.49	0.38	1.16	1.24	1.20	1.14
1080.00	6.24	5.96	5.96	0.28	20.34	24.35	24.41	0.72	1.17	1.27	1.24	1.16
1200.00	6.41	6.06	6.05	0.36	21.16	25.88	25.76	1.60	1.17	1.32	1.29	1.19
1320.00	6.68	6.23	6.22	0.46	20.50	22.58	22.41	2.83	1.29	1.33	1.29	1.21

1. Total Loss = Insertion Loss + 4.8dB splitter loss.



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