

Power Splitter/Combiner

PSC-3-1+

3 Way-0° 50Ω 1 to 200 MHz

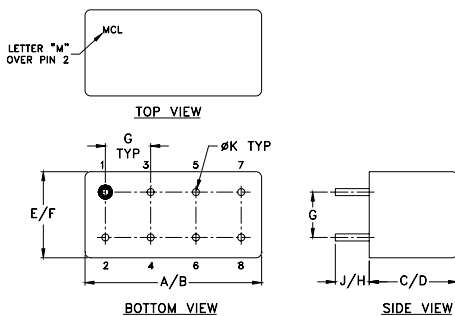
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.
Internal Dissipation	0.375W max.
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

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

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F
.770	.800	.385	.400	.370	.400
19.56	20.32	9.78	10.16	9.40	10.16
G	H	J	K		wt
.200	.20	.14	.031		grams
5.08	5.08	3.56	0.79		5.2

Features

- low insertion loss, 0.4 dB typ.
- high isolation, 40 dB typ.
- rugged welded construction

Applications

- VHF
- amateur & FM radio
- federal & defense communications

Electrical Specifications

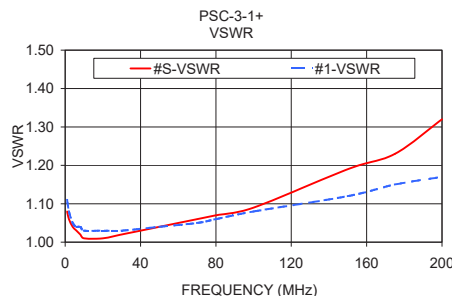
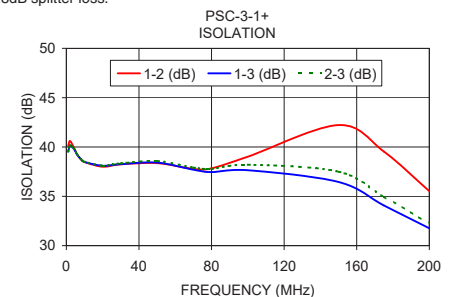
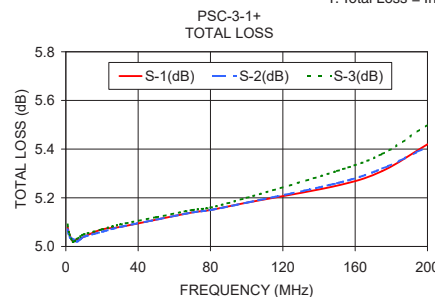
FREQ. RANGE (MHz)	ISOLATION (dB)						INSERTION LOSS (dB) ABOVE 4.8 dB						PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)		
	L		M		U		L		M		U		L		M		U	
	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
1-200	45	30	40	30	40	25	0.6	1.0	0.4	0.7	0.6	1.0	1.0	2.0	4.0	0.15	0.2	0.3

L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)			Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	VSWR S	VSWR 1	VSWR 2	VSWR 3
	S-1	S-2	S-3		1-2	1-3	2-3					
1.00	5.08	5.07	5.09	0.02	40.10	39.53	39.54	0.06	1.08	1.11	1.11	1.11
2.00	5.05	5.04	5.05	0.01	40.61	40.13	40.14	0.03	1.06	1.08	1.08	1.08
4.00	5.02	5.03	5.02	0.01	39.99	39.83	39.85	0.04	1.04	1.05	1.05	1.06
6.00	5.03	5.02	5.03	0.01	39.23	39.21	39.22	0.05	1.03	1.04	1.04	1.04
8.00	5.03	5.03	5.04	0.01	38.76	38.77	38.79	0.06	1.02	1.04	1.04	1.04
10.00	5.04	5.04	5.05	0.01	38.47	38.48	38.51	0.07	1.01	1.03	1.03	1.03
20.00	5.07	5.06	5.07	0.01	38.00	38.10	38.11	0.12	1.01	1.03	1.03	1.03
30.00	5.08	5.08	5.09	0.01	38.24	38.26	38.34	0.12	1.02	1.03	1.03	1.03
50.00	5.11	5.11	5.12	0.01	38.36	38.42	38.58	0.29	1.04	1.04	1.04	1.05
70.00	5.14	5.14	5.15	0.01	37.78	37.70	37.91	0.36	1.06	1.05	1.05	1.06
80.00	5.15	5.15	5.16	0.02	37.83	37.46	37.79	0.47	1.07	1.06	1.06	1.07
100.00	5.18	5.18	5.20	0.02	39.02	37.64	38.20	0.51	1.09	1.08	1.08	1.09
150.00	5.25	5.26	5.31	0.06	42.22	36.45	37.50	0.71	1.19	1.12	1.13	1.15
175.00	5.31	5.32	5.38	0.08	39.53	34.07	34.94	0.71	1.23	1.15	1.15	1.18
200.00	5.42	5.41	5.50	0.09	35.52	31.76	32.27	0.76	1.32	1.17	1.19	1.22

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



electrical schematic



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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3 Way-0° Power Splitter/Combiner

PSC-3-1+

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS ¹ (dB)			AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)			
	S-1	S-2	S-3		1-2	1-3	2-3			S	1	2	3
1.0	5.09	5.09	5.09	0.01	35.60	34.74	36.19	0.02	1.0	1.15	1.15	1.15	1.15
1.9	5.11	5.10	5.10	0.01	37.61	37.41	38.01	0.04	1.9	1.10	1.10	1.10	1.10
2.8	5.09	5.09	5.09	0.00	38.28	38.36	38.64	0.01	2.8	1.08	1.08	1.08	1.08
3.7	5.08	5.08	5.08	0.00	38.39	38.54	38.71	0.04	3.7	1.07	1.07	1.07	1.07
4.6	5.09	5.09	5.09	0.00	38.32	38.56	38.65	0.10	4.6	1.06	1.06	1.06	1.06
5.5	5.08	5.08	5.09	0.01	38.23	38.43	38.53	0.05	5.5	1.05	1.05	1.05	1.05
6.4	5.10	5.09	5.09	0.01	38.21	38.37	38.46	0.08	6.4	1.05	1.05	1.05	1.05
7.3	5.09	5.09	5.09	0.00	38.01	38.22	38.27	0.04	7.3	1.04	1.04	1.04	1.04
8.2	5.10	5.10	5.10	0.00	37.92	38.10	38.20	0.05	8.2	1.04	1.04	1.04	1.04
9.1	5.09	5.10	5.10	0.01	37.82	38.01	38.08	0.11	9.1	1.04	1.04	1.04	1.04
10.0	5.10	5.09	5.11	0.01	37.65	37.88	38.00	0.09	10.0	1.04	1.04	1.04	1.04
15.0	5.12	5.11	5.12	0.00	37.33	37.52	37.61	0.12	15.0	1.04	1.04	1.04	1.03
20.0	5.12	5.13	5.12	0.01	37.23	37.36	37.42	0.12	20.0	1.04	1.04	1.04	1.04
25.0	5.13	5.14	5.14	0.01	37.00	37.18	37.27	0.15	25.0	1.04	1.04	1.04	1.04
30.0	5.13	5.14	5.13	0.02	36.85	37.07	37.13	0.19	30.0	1.04	1.04	1.04	1.04
35.0	5.15	5.15	5.14	0.01	36.83	36.96	37.08	0.18	35.0	1.04	1.04	1.04	1.05
40.0	5.16	5.15	5.16	0.01	36.87	36.99	37.06	0.28	40.0	1.05	1.05	1.05	1.05
45.0	5.16	5.16	5.16	0.00	36.84	36.81	36.96	0.30	45.0	1.05	1.05	1.05	1.06
50.0	5.18	5.16	5.17	0.01	36.89	36.75	36.96	0.26	50.0	1.05	1.05	1.06	1.06
55.0	5.17	5.18	5.18	0.01	36.88	36.65	36.94	0.25	55.0	1.06	1.06	1.06	1.07
60.0	5.18	5.18	5.19	0.02	37.05	36.66	37.02	0.38	60.0	1.06	1.06	1.06	1.07
65.0	5.18	5.19	5.20	0.01	37.17	36.65	37.01	0.34	65.0	1.07	1.07	1.07	1.08
70.0	5.19	5.19	5.19	0.00	37.30	36.48	36.96	0.38	70.0	1.07	1.07	1.07	1.08
75.0	5.20	5.20	5.20	0.00	37.44	36.42	36.93	0.47	75.0	1.07	1.07	1.08	1.09
80.0	5.21	5.21	5.21	0.00	37.63	36.33	36.96	0.44	80.0	1.08	1.08	1.08	1.09
85.0	5.22	5.21	5.23	0.01	37.85	36.25	36.98	0.48	85.0	1.08	1.08	1.09	1.10
90.0	5.23	5.22	5.24	0.01	38.11	36.11	37.03	0.44	90.0	1.09	1.09	1.09	1.10
95.0	5.23	5.23	5.25	0.03	38.29	36.00	36.97	0.50	95.0	1.09	1.09	1.10	1.11
100.0	5.23	5.22	5.25	0.02	38.66	35.96	37.05	0.58	100.0	1.10	1.10	1.10	1.11
110.0	5.25	5.25	5.28	0.03	39.31	35.61	36.82	0.56	110.0	1.11	1.11	1.11	1.13
120.0	5.27	5.27	5.30	0.03	39.91	35.15	36.65	0.63	120.0	1.12	1.12	1.12	1.14
130.0	5.27	5.29	5.31	0.04	40.65	34.71	36.28	0.62	130.0	1.13	1.13	1.13	1.15
140.0	5.30	5.31	5.34	0.03	41.15	34.16	35.85	0.67	140.0	1.14	1.14	1.14	1.16
150.0	5.32	5.33	5.37	0.05	41.09	33.47	35.16	0.78	150.0	1.15	1.15	1.16	1.18
160.0	5.36	5.36	5.40	0.04	40.56	32.77	34.39	0.77	160.0	1.16	1.16	1.17	1.19
170.0	5.38	5.38	5.44	0.06	39.30	31.94	33.49	0.76	170.0	1.17	1.17	1.18	1.21
180.0	5.41	5.41	5.48	0.07	37.89	31.17	32.59	0.81	180.0	1.19	1.19	1.19	1.22
185.0	5.41	5.43	5.49	0.09	37.11	30.74	32.13	0.82	185.0	1.19	1.19	1.20	1.23
190.0	5.43	5.45	5.53	0.10	36.29	30.37	31.62	0.89	190.0	1.20	1.20	1.21	1.24
195.0	5.44	5.45	5.54	0.09	35.44	29.89	31.13	0.80	195.0	1.21	1.21	1.22	1.25
200.0	5.45	5.47	5.56	0.10	34.60	29.47	30.61	0.88	200.0	1.21	1.21	1.22	1.26

¹Total Loss = Insertion Loss + 4.8dB Splitter Loss

REV. X2

PSC-3-1+

100624

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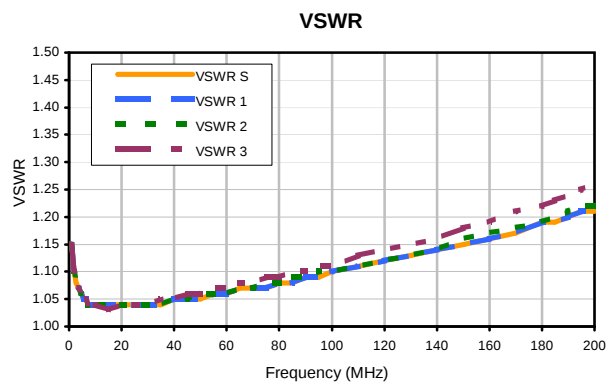
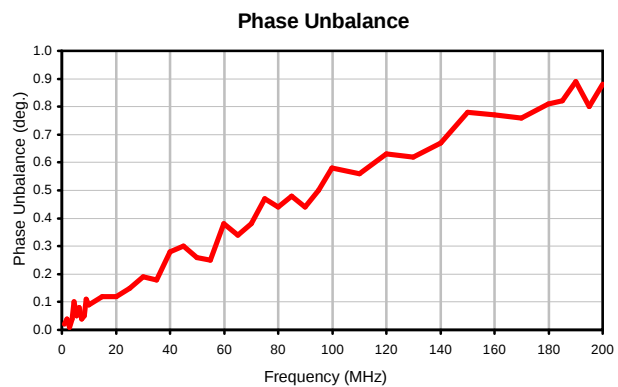
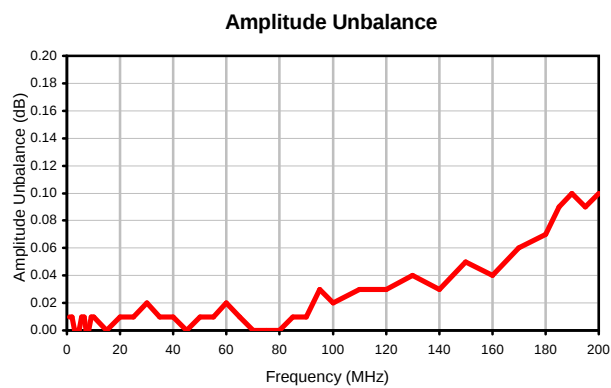
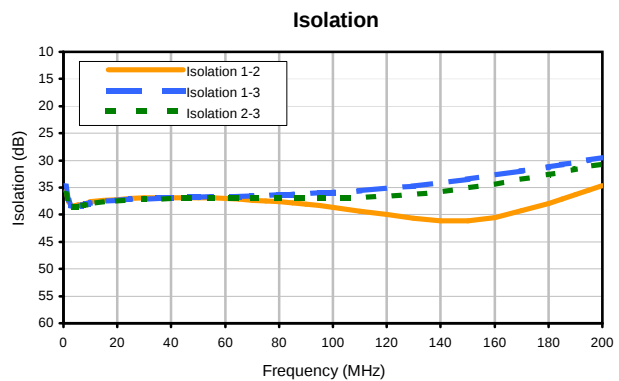
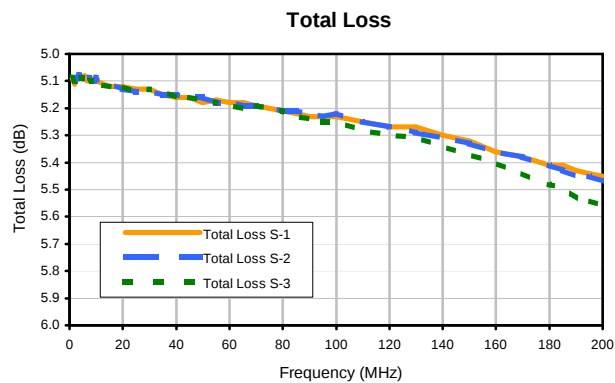
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3 Way-0° Power Splitter/Combiner

PSC-3-1+

Typical Performance Curves



A01
A04
A05
A06

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	WT, GRAM
A01	.770 (19.56)	.800 (20.32)	.385 (9.78)	.400 (10.16)	.370 (9.40)	.400 (10.16)	.200 (5.08)	.20 (5.08)	.14 (3.56)	.031 (.79)	5.2
A04			.200 (5.08)	.210 (5.33)							3.7
A05			.240 (6.10)	.250 (6.35)							3.7
A06			.285 (7.24)	.310 (7.87)							5.2

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

- Header material: C.R.S.
Pin material: #52 alloy.
Cover material: Cupro-Nickel.
- Pin finish: Electro Tin-Silver.
- Insulated spacer available. Request P/N B14-045-01.
- Tolerance on pin diameter $\pm .005$ inch.
- Glass meniscus 0.015 inch max.
- Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.



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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Moisture Resistance	10 cycles, 24 hours per cycle	MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours
Solderability	10X Magnification	J-STD-002, 95% Coverage
Resistance to Solder Heat	260°C for 10 seconds	MIL-STD-202, Method 210, Condition B
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215
Terminal Strength	4 1/2 Pound Pull	MIL-STD-202, Method 211, Condition A



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Gross Leak	125°C Bubble Test	MIL-STD-202, Method 112, Condition D
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D