

Power Splitter/Combiner

4 Way-0° Resistive 50Ω DC to 8400 MHz

ZFRSC-4-842-S+



Generic photo used for illustration purposes only

CASE STYLE: G15

Connectors Model

SMA ZFRSC-4-842-S+

BRACKET (OPTION "B")

+RoHS Compliant

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

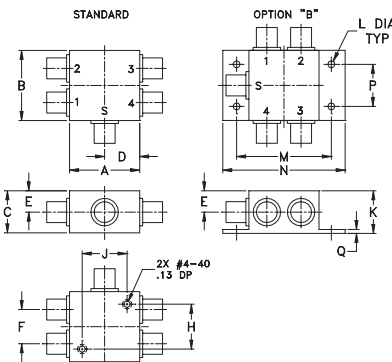
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.16W max.
Internal Dissipation	0.12W max.
Permanent damage may occur if any of these limits are exceeded.	

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2
PORT 3	3
PORT 4	4

Outline Drawing



Outline Dimensions (inch)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	.61	—	.80
31.75	31.75	19.05	16.00	9.65	15.49	—	20.32

J	K	L	M	N	P	Q	wt
.80	.76	.125	1.688	2.18	.75	.07	grams
20.32	19.30	3.18	42.88	55.37	19.05	1.78	85.0

Electrical Schematic



Features

- wideband, DC to 8400 MHz
- good VSWR, 1.15:1 typ.
- excellent amplitude unbalance, 0.3 dB typ.
- rugged shielded case

Applications

- laboratory
- test set-ups

Electrical Specifications at 25°C

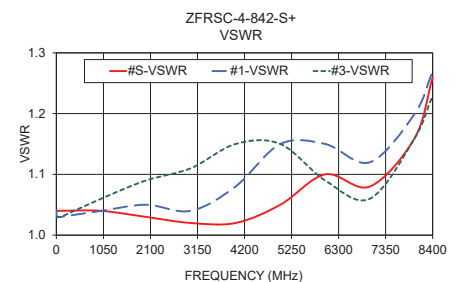
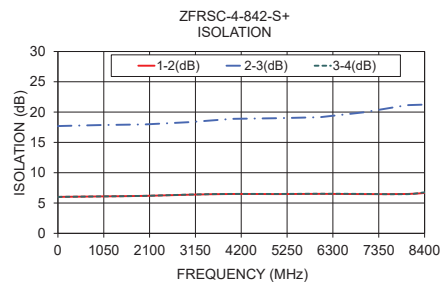
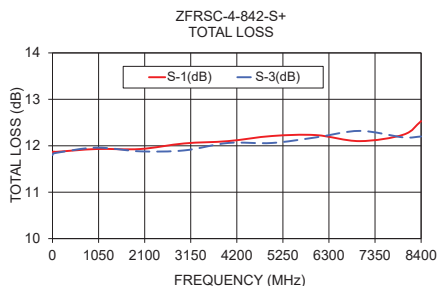
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range	DC - 3000	—	0.05	0.4	MHz
Insertion Loss, above 12dB	3000 - 6000	—	0.3	0.8	dB
	6000 - 8400	—	0.6	1.0	dB
Isolation	DC - 3000	—	6.0	—	dB
	3000 - 6000	—	6.4	—	dB
	6000 - 8400	—	6.4	—	dB
Phase Unbalance	DC - 3000	—	1.5	5.0	Degree
	3000 - 6000	—	4.0	9.0	Degree
	6000 - 8400	—	5.0	10.0	Degree
Amplitude Unbalance	DC - 3000	—	0.1	0.3	dB
	3000 - 6000	—	0.3	0.5	dB
	6000 - 8400	—	0.4	0.8	dB
VSWR (Port S)	DC - 3000	—	1.05	1.12	:1
	3000 - 6000	—	1.05	1.15	:1
	6000 - 8400	—	1.20	1.35	:1
VSWR (Port 1-4)	DC - 3000	—	1.08	1.20	:1
	3000 - 6000	—	1.15	1.25	:1
	6000 - 8400	—	1.25	1.45	:1

This is a resistive power divider to enable frequency coverage from DC to the highest rated frequency. Since resistive power divider do not provide a high degree of isolation (basically isolation equals the insertion loss between ports).

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	VSWR 4
	S-1	S-2	S-3	S-4		1-2	2-3	3-4						
0	11.83	11.86	11.80	11.85	0.06	6.00	17.68	5.99	0.39	1.04	1.04	1.04	1.03	1.04
10	11.87	11.88	11.83	11.87	0.04	6.01	17.71	6.00	0.04	1.04	1.03	1.03	1.03	1.03
50	11.87	11.88	11.84	11.87	0.04	6.01	17.70	6.01	0.08	1.04	1.03	1.03	1.03	1.03
100	11.87	11.89	11.85	11.88	0.04	6.02	17.71	6.02	0.16	1.04	1.03	1.03	1.03	1.03
1000	11.93	11.91	11.96	11.91	0.05	6.09	17.87	6.09	1.07	1.04	1.04	1.04	1.06	1.04
2000	11.93	11.88	11.88	11.90	0.05	6.18	17.97	6.18	1.05	1.03	1.05	1.06	1.09	1.05
3000	12.05	12.01	11.90	12.00	0.15	6.37	18.34	6.39	2.23	1.02	1.04	1.08	1.11	1.06
4000	12.10	12.12	12.06	12.01	0.11	6.49	18.89	6.50	2.63	1.02	1.08	1.14	1.15	1.09
5000	12.21	12.25	12.06	12.13	0.19	6.47	18.99	6.49	4.52	1.05	1.15	1.18	1.15	1.12
6000	12.23	12.23	12.18	12.31	0.13	6.51	19.15	6.53	6.33	1.10	1.15	1.14	1.09	1.07
7000	12.10	12.05	12.32	12.33	0.28	6.47	19.96	6.50	6.41	1.08	1.12	1.04	1.06	1.06
8000	12.24	12.05	12.18	12.48	0.43	6.49	21.15	6.46	4.82	1.16	1.20	1.12	1.16	1.23
8400	12.53	12.26	12.20	12.55	0.35	6.66	21.24	6.76	5.48	1.26	1.27	1.17	1.23	1.28

1. Total Loss = Insertion Loss + 12dB splitter loss.



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.
- 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



4 Way-0° Resistive Power Splitter/Combiner

ZFRSC-4-842+

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	S-4		1-2	2-3	3-4			S	1	2	3	4
0.3	11.83	11.86	11.80	11.85	0.06	6.00	17.68	5.99	0.39	0.3	1.04	1.04	1.04	1.03	1.04
0.5	11.85	11.86	11.82	11.86	0.05	6.00	17.69	6.00	0.23	0.5	1.04	1.03	1.03	1.03	1.03
0.7	11.86	11.87	11.82	11.86	0.04	6.00	17.68	5.99	0.16	0.7	1.04	1.03	1.03	1.03	1.03
0.9	11.86	11.87	11.83	11.87	0.05	6.00	17.69	5.99	0.13	0.9	1.04	1.03	1.03	1.03	1.03
1.0	11.86	11.88	11.83	11.87	0.05	6.00	17.69	5.99	0.12	1.0	1.04	1.03	1.03	1.03	1.03
3.0	11.87	11.88	11.83	11.87	0.05	6.01	17.71	6.00	0.06	3.0	1.04	1.03	1.03	1.03	1.03
5.0	11.87	11.88	11.84	11.87	0.05	6.01	17.71	6.00	0.04	5.0	1.04	1.03	1.03	1.03	1.03
7.0	11.87	11.88	11.83	11.87	0.05	6.01	17.71	6.00	0.04	7.0	1.04	1.03	1.03	1.03	1.03
10.0	11.87	11.88	11.83	11.87	0.04	6.01	17.71	6.00	0.04	10.0	1.04	1.03	1.03	1.03	1.03
30.0	11.87	11.87	11.84	11.87	0.03	6.01	17.70	6.01	0.05	30.0	1.04	1.03	1.03	1.03	1.03
50.0	11.87	11.88	11.84	11.87	0.04	6.01	17.70	6.01	0.08	50.0	1.04	1.03	1.03	1.03	1.03
70.0	11.87	11.88	11.84	11.87	0.04	6.02	17.71	6.01	0.13	70.0	1.04	1.03	1.03	1.03	1.03
100.0	11.87	11.89	11.85	11.88	0.04	6.02	17.71	6.02	0.16	100.0	1.04	1.03	1.03	1.03	1.03
200.0	11.88	11.89	11.86	11.88	0.03	6.03	17.72	6.02	0.30	200.0	1.04	1.03	1.03	1.03	1.03
300.0	11.89	11.91	11.87	11.90	0.03	6.04	17.74	6.03	0.47	300.0	1.04	1.03	1.03	1.03	1.03
400.0	11.90	11.92	11.89	11.90	0.03	6.04	17.76	6.03	0.57	400.0	1.04	1.03	1.03	1.03	1.03
500.0	11.91	11.93	11.90	11.91	0.02	6.05	17.78	6.04	0.72	500.0	1.04	1.03	1.03	1.04	1.03
600.0	11.91	11.93	11.91	11.92	0.01	6.05	17.80	6.04	0.82	600.0	1.04	1.03	1.03	1.04	1.04
700.0	11.92	11.92	11.93	11.91	0.01	6.06	17.81	6.05	0.93	700.0	1.04	1.04	1.04	1.04	1.04
800.0	11.92	11.92	11.94	11.92	0.02	6.07	17.83	6.06	0.99	800.0	1.04	1.04	1.04	1.05	1.04
900.0	11.92	11.92	11.95	11.91	0.04	6.08	17.84	6.07	1.04	900.0	1.04	1.04	1.04	1.06	1.04
1000.0	11.93	11.91	11.96	11.91	0.05	6.09	17.87	6.09	1.07	1000.0	1.04	1.04	1.04	1.06	1.04
1100.0	11.93	11.91	11.96	11.92	0.05	6.10	17.88	6.09	1.10	1100.0	1.04	1.04	1.04	1.07	1.04
1200.0	11.93	11.91	11.97	11.92	0.06	6.11	17.90	6.11	1.08	1200.0	1.04	1.04	1.04	1.07	1.05
1400.0	11.93	11.91	11.96	11.93	0.06	6.13	17.94	6.13	1.05	1400.0	1.04	1.05	1.05	1.08	1.05
1600.0	11.93	11.90	11.94	11.92	0.04	6.14	17.96	6.15	1.03	1600.0	1.04	1.05	1.05	1.08	1.05
1800.0	11.93	11.90	11.91	11.91	0.03	6.16	17.97	6.16	1.02	1800.0	1.04	1.05	1.05	1.09	1.05
2000.0	11.93	11.88	11.88	11.90	0.05	6.18	17.97	6.18	1.05	2000.0	1.03	1.05	1.06	1.09	1.05
2200.0	11.95	11.89	11.86	11.91	0.09	6.22	18.01	6.22	1.15	2200.0	1.03	1.05	1.06	1.09	1.05
2400.0	11.97	11.92	11.85	11.94	0.12	6.27	18.09	6.28	1.35	2400.0	1.03	1.04	1.07	1.09	1.06
2600.0	12.00	11.96	11.85	11.97	0.15	6.32	18.17	6.33	1.62	2600.0	1.02	1.04	1.07	1.10	1.06
2800.0	12.03	11.99	11.87	12.00	0.16	6.36	18.26	6.37	1.90	2800.0	1.02	1.04	1.08	1.10	1.06
3000.0	12.05	12.01	11.90	12.00	0.15	6.37	18.34	6.39	2.23	3000.0	1.02	1.04	1.08	1.11	1.06
3200.0	12.06	12.03	11.93	11.99	0.13	6.38	18.44	6.39	2.48	3200.0	1.02	1.04	1.09	1.11	1.06
3400.0	12.07	12.05	11.97	11.99	0.11	6.39	18.57	6.39	2.59	3400.0	1.01	1.04	1.10	1.12	1.07
3600.0	12.09	12.07	11.99	12.00	0.10	6.40	18.71	6.41	2.70	3600.0	1.02	1.06	1.11	1.13	1.07
3800.0	12.09	12.10	12.03	12.01	0.09	6.44	18.82	6.45	2.71	3800.0	1.02	1.07	1.12	1.14	1.09
4000.0	12.10	12.12	12.06	12.01	0.11	6.49	18.89	6.50	2.63	4000.0	1.02	1.08	1.14	1.15	1.09
4100.0	12.10	12.12	12.07	12.01	0.12	6.51	18.91	6.53	2.48	4100.0	1.02	1.09	1.14	1.15	1.09
4200.0	12.12	12.13	12.08	12.00	0.13	6.52	18.92	6.54	2.43	4200.0	1.03	1.10	1.14	1.16	1.09
4300.0	12.13	12.13	12.09	12.00	0.13	6.52	18.93	6.55	2.60	4300.0	1.03	1.11	1.15	1.16	1.10
4400.0	12.15	12.15	12.09	12.01	0.14	6.53	18.96	6.56	2.85	4400.0	1.03	1.12	1.15	1.16	1.10
4500.0	12.16	12.16	12.09	12.02	0.14	6.52	18.97	6.55	3.12	4500.0	1.03	1.12	1.15	1.16	1.11
4600.0	12.17	12.17	12.08	12.04	0.13	6.51	18.99	6.54	3.44	4600.0	1.03	1.13	1.16	1.16	1.11
4700.0	12.19	12.19	12.08	12.06	0.12	6.50	19.01	6.53	3.68	4700.0	1.03	1.14	1.17	1.16	1.11
4800.0	12.19	12.21	12.07	12.09	0.14	6.48	19.01	6.51	3.99	4800.0	1.03	1.15	1.17	1.16	1.12
4900.0	12.20	12.23	12.06	12.10	0.17	6.47	19.01	6.50	4.23	4900.0	1.04	1.15	1.18	1.16	1.12
5000.0	12.21	12.25	12.06	12.13	0.19	6.47	18.99	6.49	4.52	5000.0	1.05	1.15	1.18	1.15	1.12
5100.0	12.23	12.27	12.06	12.15	0.21	6.47	18.98	6.50	4.85	5100.0	1.05	1.15	1.18	1.15	1.11
5200.0	12.25	12.27	12.07	12.17	0.20	6.47	18.95	6.51	5.07	5200.0	1.06	1.16	1.17	1.14	1.11
5300.0	12.27	12.27	12.07	12.19	0.20	6.50	18.94	6.53	5.22	5300.0	1.07	1.17	1.17	1.13	1.11
5400.0	12.29	12.27	12.09	12.21	0.19	6.50	18.93	6.55	5.32	5400.0	1.07	1.17	1.16	1.13	1.11
5500.0	12.29	12.27	12.11	12.22	0.18	6.52	18.96	6.57	5.46	5500.0	1.08	1.16	1.16	1.12	1.11
5600.0	12.29	12.27	12.13	12.24	0.16	6.53	18.99	6.58	5.60	5600.0	1.08	1.16	1.16	1.12	1.09
5700.0	12.27	12.26	12.15	12.25	0.13	6.53	19.05	6.58	5.80	5700.0	1.09	1.16	1.16	1.11	1.08
5800.0	12.26	12.25	12.16	12.28	0.12	6.53	19.07	6.56	6.00	5800.0	1.09	1.16	1.16	1.11	1.08
5900.0	12.25	12.24	12.17	12.30	0.13	6.52	19.11	6.55	6.16	5900.0	1.10	1.15	1.14	1.10	1.08
6000.0	12.23	12.23	12.18	12.31	0.13	6.51	19.15	6.53	6.33	6000.0	1.10	1.15	1.14	1.09	1.07
6100.0	12.22	12.22	12.19	12.32	0.13	6.49	19.20	6.51	6.53	6100.0	1.10	1.14	1.13	1.09	1.06
6200.0	12.21	12.20	12.20	12.29	0.10	6.47	19.24	6.48	6.71	6200.0	1.10	1.14	1.11	1.08	1.05
6300.0	12.18	12.17	12.22	12.29	0.12	6.46	19.28	6.46	6.78	6300.0	1.10	1.14	1.11	1.07	1.04
6400.0	12.15	12.14	12.24	12.28	0.14	6.45	19.34	6.44	6.85	6400.0	1.10	1.14	1.10	1.07	1.04
6600.0	12.11	12.09	12.27	12.29	0.20	6.44	19.51	6.45	6.64	6600.0	1.09	1.12	1.09	1.07	1.02
6800.0	12.11	12.06	12.30	12.30	0.24	6.45	19.72	6.47	6.38	6800.0	1.09	1.11	1.06	1.06	1.04
7000.0	12.10	12.05	12.32	12.33	0.28	6.47	19.96	6.50	6.41	7000.0	1.08	1.12	1.04	1.06	1.06
7200.0	12.10	12.04	12.33	12.39	0.36	6.50	20.18	6.53	6.44	7200.0	1.08	1.13	1.04	1.05	1.07
7400.0	12.14	12.03	12.30	12.41	0.38	6.49	20.38	6.51	6.17	7400.0	1.09	1.13	1.03	1.07	1.12
7600.0	12.18	12.03	12.26	12.40	0.37	6.47	20.59	6.47	6.00	7600.0	1.11	1.15	1.05	1.09	1.16
7800.0	12.19	12.03	12.22	12.42	0.39	6.45	20.84	6.43	5.53	7800.0	1.13	1.18	1.09	1.13	1.18
8000.0	12.24	12.05	12.18	12.48	0.43	6.49	21.15	6.46	4.82	8000.0	1.16	1.20	1.12	1.16	1.23
8200.0	12.41	12.16	12.16	12.55	0.39	6.56	21.36	6.57	4.58	8200.0	1.21	1.24	1.15	1.20	1.28
8400.0	12.53	12.26	12.20	12.55	0.35	6.66	21.24	6.76	5.48	8400.0	1.26	1.27	1.17	1.23	1.28

¹Total Loss = Insertion Loss + 12dB Splitter Loss

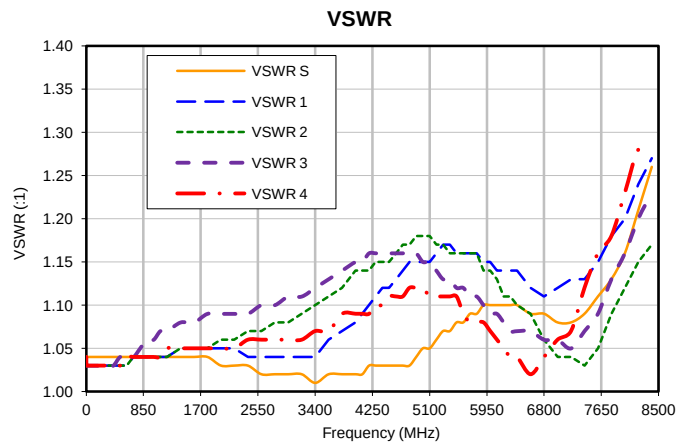
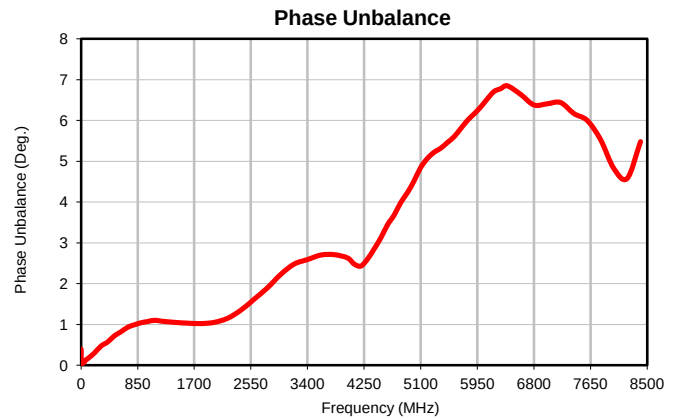
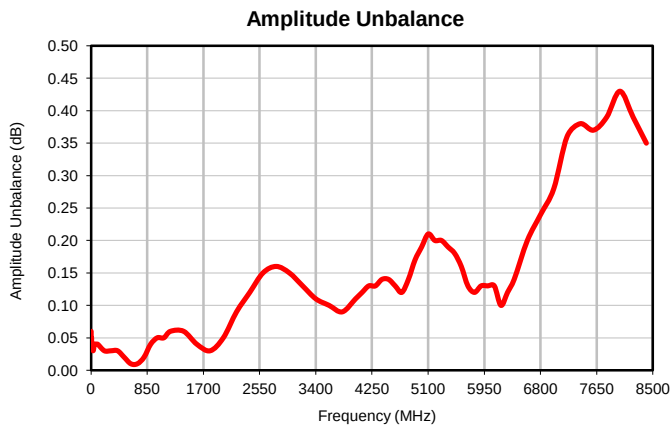
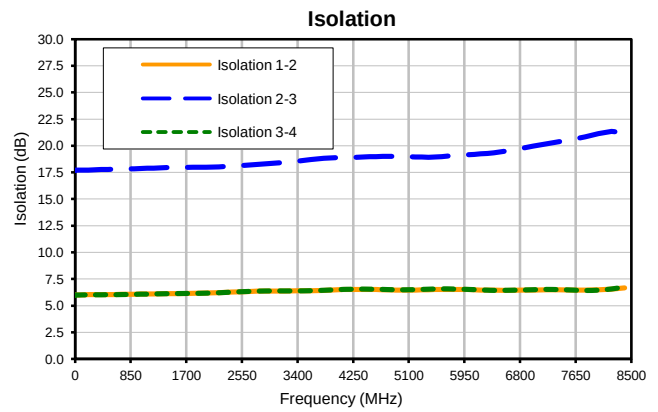
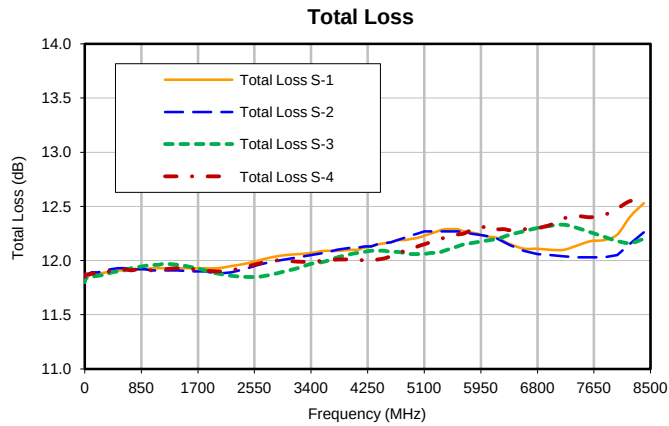


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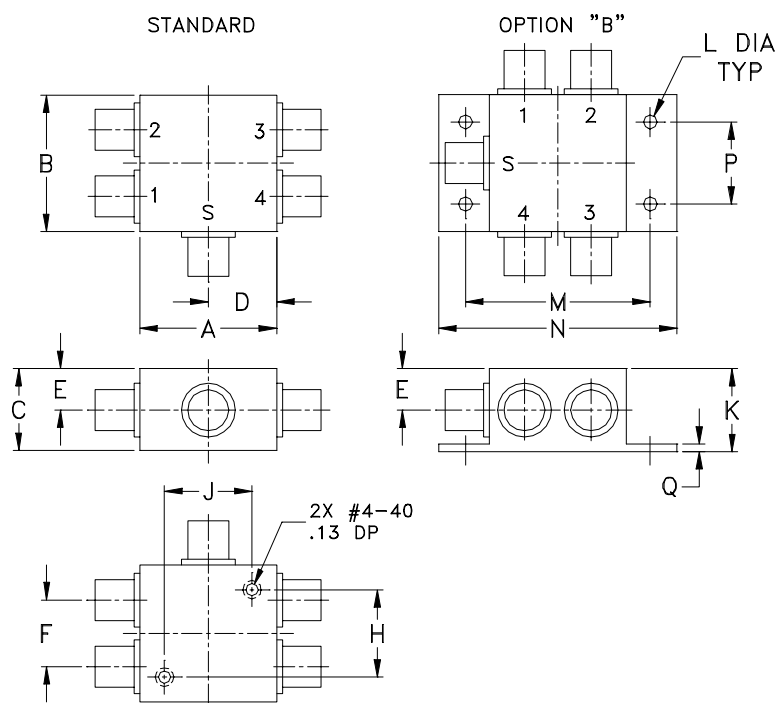
IF/RF MICROWAVE COMPONENTS

REV. A
ZFRSC-4-842+
12/17/2014
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Typical Performance Curves



Outline Dimensions



CASE #	A	B	C	D	E	F	G	H	J	K	L
G15	1.25 (31.75)	1.25 (31.75)	.75 (19.05)	.63 (16.00)	.38 (9.65)	.61 (15.49)	--	.80 (20.32)	.80 (20.32)	.76 (19.30)	.125 (3.18)

CASE #	M	N	P	Q	WT. GRAM
G15	1.688 (42.88)	2.18 (55.37)	.75 (19.05)	.07 (1.78)	85.0

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

Notes:

- Case material: Aluminum alloy.
- Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Mounting bracket available on request. Add suffix B to part number.
- For Bracket version, option "B" dimension "K" changes from .76 to .90 inches when connectors are type TNC.



INTERNET <http://www.minicircuits.com>

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Mini-Circuits ISO 9001 & ISO 14001 Certified



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
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I