

Coaxial Power Splitter/Combiner

3 Way-0° 50Ω 2 to 300 MHz

ZCSC-3-R3+

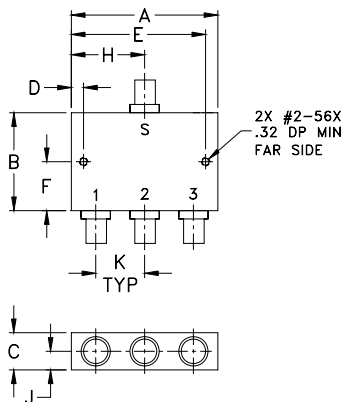
Maximum Ratings

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.	

Coaxial Connections

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

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F
1.50	1.00	.38	.125	1.375	.500
38.10	25.40	9.65	3.18	34.93	12.70

G	H	J	K	wt
--	.75	.19	.50	grams
--	19.05	4.83	12.70	28

Features

- low insertion loss, 0.4 dB typ.
- high isolation, 31 dB typ.
- excellent VSWR, 1.1:1 typ.
- excellent phase unbalance 1 deg. typ.
- rugged shielded case

Applications

- VHF/UHF
- instrumentation
- communication system

Electrical Specifications at 25°C

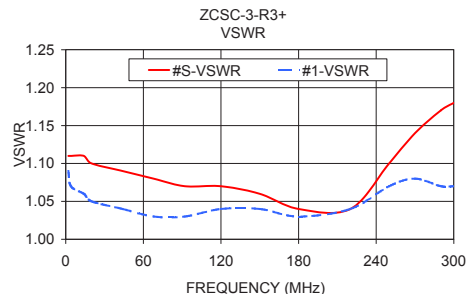
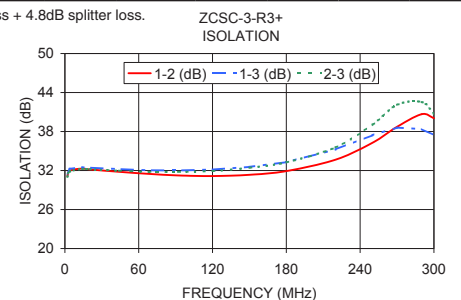
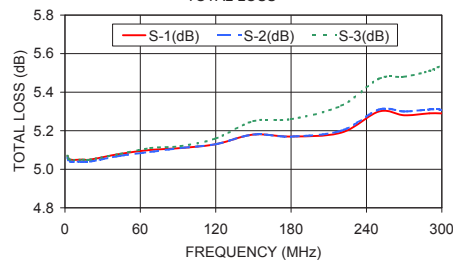
FREQ. RANGE (MHz)	ISOLATION (dB)						INSERTION LOSS (dB) ABOVE 4.8 dB						PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)		
	L		M		U		L		M		U		L		M		U	
f_L - f_U	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
2-300	32	26	31	28	32	22	0.3	0.8	0.4	1.0	0.8	1.2	1.0	2.0	3.0	0.1	0.3	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					
2.00	5.07	5.06	5.07	0.00	31.14	31.55	31.03	0.03	1.11	1.09	1.09	1.09
4.00	5.05	5.04	5.05	0.01	31.99	32.25	31.85	0.02	1.11	1.07	1.07	1.07
14.00	5.05	5.04	5.05	0.01	32.30	32.50	32.24	0.05	1.11	1.06	1.06	1.06
20.00	5.05	5.04	5.05	0.01	32.17	32.44	32.21	0.04	1.10	1.05	1.05	1.05
44.00	5.08	5.07	5.08	0.01	31.81	32.22	31.97	0.09	1.09	1.04	1.04	1.04
68.00	5.10	5.09	5.11	0.01	31.49	32.04	31.82	0.23	1.08	1.03	1.04	1.03
92.00	5.11	5.11	5.12	0.01	31.25	32.01	31.79	0.32	1.07	1.03	1.04	1.02
120.00	5.13	5.13	5.16	0.03	31.15	32.15	31.93	0.33	1.07	1.04	1.05	1.04
150.00	5.18	5.18	5.25	0.06	31.34	32.56	32.42	0.42	1.06	1.04	1.05	1.05
180.00	5.17	5.17	5.26	0.09	31.91	33.29	33.26	0.45	1.04	1.03	1.03	1.04
220.00	5.19	5.20	5.33	0.14	33.67	35.24	35.57	0.56	1.04	1.04	1.04	1.04
250.00	5.30	5.31	5.47	0.18	36.27	37.44	39.06	0.68	1.10	1.07	1.07	1.09
270.00	5.28	5.30	5.48	0.21	38.73	38.61	42.11	0.76	1.14	1.08	1.08	1.10
290.00	5.29	5.31	5.51	0.23	40.66	38.38	42.54	0.72	1.17	1.07	1.08	1.11
300.00	5.29	5.31	5.54	0.25	40.04	37.45	40.72	0.81	1.18	1.07	1.07	1.10

ZCSC-3-R3+ TOTAL LOSS
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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M166586
ZCSC-3-R3+
HY/TD/CP/AM
180306

3 Way-0° Power Splitter/Combiner

ZCSC-3-R3+

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
2.0	5.07	5.06	5.07	0.00	31.14	31.55	31.03	0.03	2.0	1.11	1.09	1.09	1.09
3.0	5.04	5.05	5.05	0.01	31.71	32.04	31.59	0.06	3.0	1.11	1.07	1.08	1.07
4.0	5.05	5.04	5.05	0.01	31.99	32.25	31.85	0.02	4.0	1.11	1.07	1.07	1.07
6.0	5.03	5.03	5.04	0.01	32.23	32.43	32.12	0.06	6.0	1.11	1.06	1.06	1.06
8.0	5.05	5.04	5.05	0.01	32.30	32.51	32.21	0.11	8.0	1.11	1.06	1.06	1.06
10.0	5.05	5.05	5.05	0.01	32.32	32.52	32.25	0.10	10.0	1.11	1.06	1.06	1.06
12.0	5.05	5.05	5.05	0.01	32.34	32.53	32.25	0.02	12.0	1.11	1.06	1.06	1.06
14.0	5.05	5.04	5.05	0.01	32.30	32.50	32.24	0.05	14.0	1.11	1.06	1.06	1.06
16.0	5.05	5.05	5.05	0.00	32.29	32.47	32.26	0.08	16.0	1.10	1.05	1.05	1.05
18.0	5.05	5.05	5.06	0.00	32.22	32.43	32.24	0.08	18.0	1.10	1.05	1.05	1.05
20.0	5.05	5.04	5.05	0.01	32.17	32.44	32.21	0.04	20.0	1.10	1.05	1.05	1.05
28.0	5.06	5.07	5.06	0.02	32.09	32.35	32.13	0.10	28.0	1.10	1.04	1.05	1.04
36.0	5.06	5.06	5.07	0.01	31.93	32.31	32.07	0.13	36.0	1.10	1.04	1.05	1.04
44.0	5.08	5.07	5.08	0.01	31.81	32.22	31.97	0.09	44.0	1.09	1.04	1.04	1.04
52.0	5.09	5.09	5.09	0.01	31.69	32.09	31.91	0.19	52.0	1.09	1.04	1.04	1.04
60.0	5.10	5.10	5.10	0.01	31.61	32.08	31.93	0.19	60.0	1.09	1.04	1.04	1.03
68.0	5.10	5.09	5.11	0.01	31.49	32.04	31.82	0.23	68.0	1.08	1.03	1.04	1.03
76.0	5.10	5.10	5.12	0.02	31.40	32.06	31.84	0.16	76.0	1.08	1.03	1.03	1.03
84.0	5.11	5.11	5.12	0.02	31.34	32.02	31.81	0.33	84.0	1.07	1.03	1.03	1.03
92.0	5.11	5.11	5.12	0.01	31.25	32.01	31.79	0.32	92.0	1.07	1.03	1.04	1.02
100.0	5.12	5.11	5.14	0.04	31.20	32.04	31.78	0.33	100.0	1.07	1.04	1.04	1.03
110.0	5.11	5.12	5.15	0.04	31.14	32.07	31.85	0.36	110.0	1.07	1.04	1.04	1.03
120.0	5.13	5.13	5.16	0.03	31.15	32.15	31.93	0.33	120.0	1.07	1.04	1.05	1.04
130.0	5.15	5.15	5.19	0.04	31.17	32.24	32.05	0.36	130.0	1.07	1.05	1.05	1.04
140.0	5.17	5.17	5.21	0.05	31.27	32.40	32.20	0.34	140.0	1.07	1.05	1.05	1.05
150.0	5.18	5.18	5.25	0.06	31.34	32.56	32.42	0.42	150.0	1.06	1.04	1.05	1.05
160.0	5.17	5.17	5.24	0.07	31.50	32.77	32.60	0.40	160.0	1.05	1.04	1.04	1.05
170.0	5.17	5.17	5.25	0.08	31.67	33.02	32.93	0.49	170.0	1.04	1.03	1.04	1.05
180.0	5.17	5.17	5.26	0.09	31.91	33.29	33.26	0.45	180.0	1.04	1.03	1.03	1.04
190.0	5.18	5.19	5.27	0.09	32.19	33.68	33.76	0.47	190.0	1.03	1.02	1.03	1.04
200.0	5.20	5.20	5.30	0.10	32.65	34.15	34.27	0.55	200.0	1.03	1.02	1.03	1.03
210.0	5.19	5.20	5.31	0.11	33.04	34.62	34.89	0.53	210.0	1.03	1.03	1.03	1.03
220.0	5.19	5.20	5.33	0.14	33.67	35.24	35.57	0.56	220.0	1.04	1.04	1.04	1.04
230.0	5.22	5.24	5.36	0.15	34.36	35.88	36.61	0.60	230.0	1.05	1.05	1.06	1.06
240.0	5.28	5.28	5.43	0.15	35.23	36.72	37.74	0.64	240.0	1.07	1.06	1.07	1.07
250.0	5.30	5.31	5.47	0.18	36.27	37.44	39.06	0.68	250.0	1.10	1.07	1.07	1.09
260.0	5.29	5.31	5.49	0.20	37.43	38.14	40.60	0.62	260.0	1.12	1.08	1.08	1.10
270.0	5.28	5.30	5.48	0.21	38.73	38.61	42.11	0.76	270.0	1.14	1.08	1.08	1.10
280.0	5.29	5.30	5.51	0.22	39.93	38.76	43.11	0.68	280.0	1.16	1.08	1.08	1.11
290.0	5.29	5.31	5.51	0.23	40.66	38.38	42.54	0.72	290.0	1.17	1.07	1.08	1.11
300.0	5.29	5.31	5.54	0.25	40.04	37.45	40.72	0.81	300.0	1.18	1.07	1.07	1.10

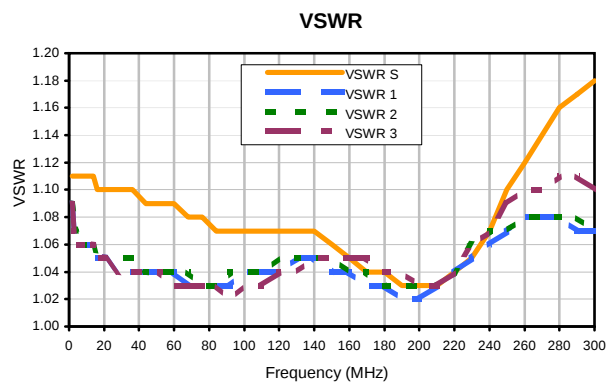
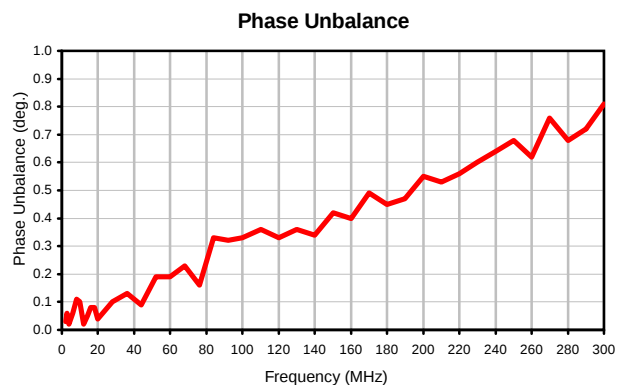
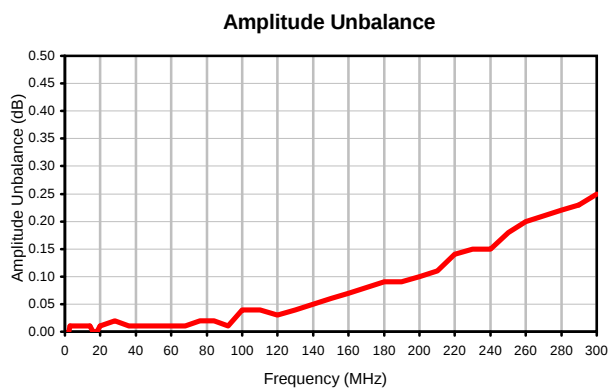
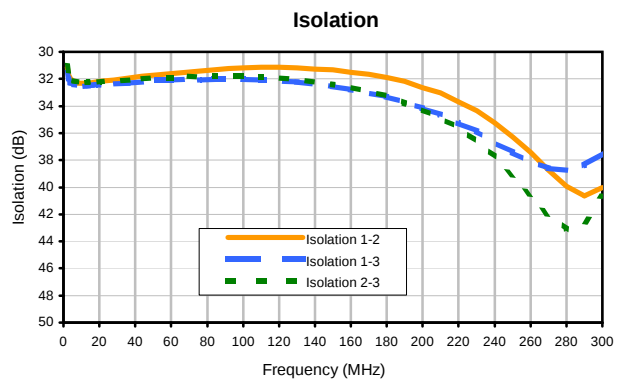
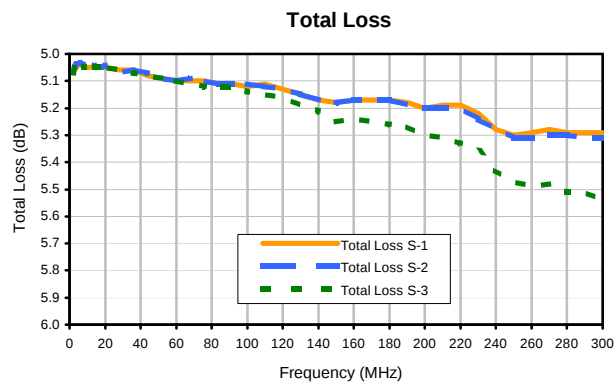
¹ Total Loss = Insertion Loss+ 4.8dB Splitter Loss

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3 Way-0° Power Splitter/Combiner

ZCSC-3-R3+

Typical Performance Curves



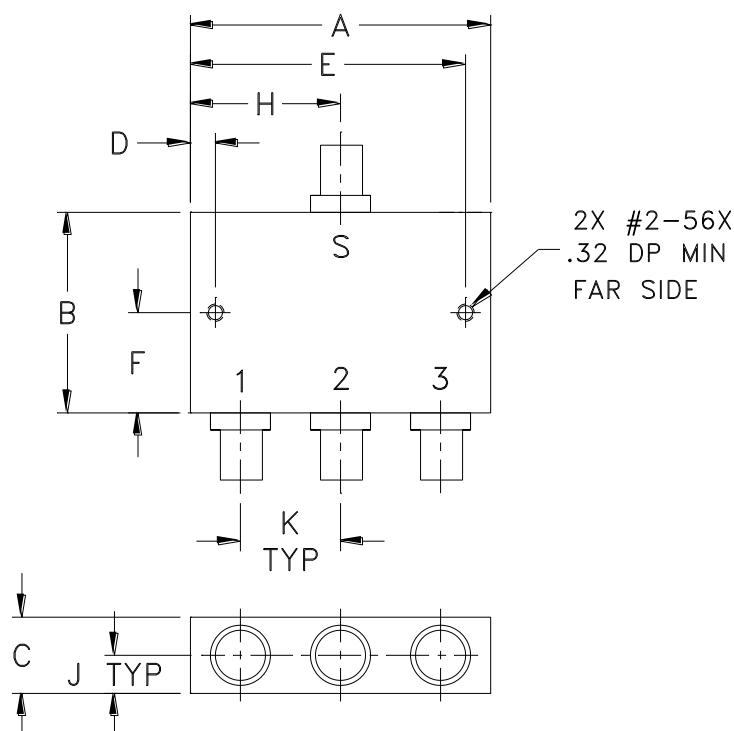
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Outline Dimensions

UU233



CASE#	A	B	C	D	E	F	G	H	J	K	WT. GRAMS
UU233	1.50 (38.10)	1.00 (25.40)	.38 (9.65)	.125 (3.18)	1.375 (34.93)	.500 (12.70)	-- --	.75 (19.05)	.19 (4.83)	.50 (12.70)	28

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 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.
- Refer to the individual model data sheet for the type of connectors available.



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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
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