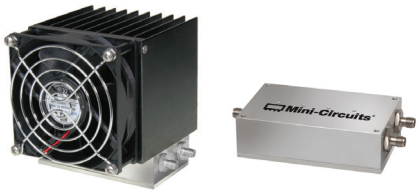
Coaxial High Power
Power Splitter/Combiner

ZACS242-100W+

2 Way-0° 50Ω 500 to 2450 MHz DC PASS



Maximum Ratings

Operating Temperature	-55°C to 90°C
Storage Temperature	-55°C to 100°C
DC PASS	2A
FAN DC Supply	24V
FAN Current	0.15A

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

Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2

Features

- high power, up to 100W as splitter
- high power, up to 40W as combiner
- low insertion loss, 0.8 dB typ.
- high isolation, 22 dB typ.
- excellent VSWR, 1.20 typ.

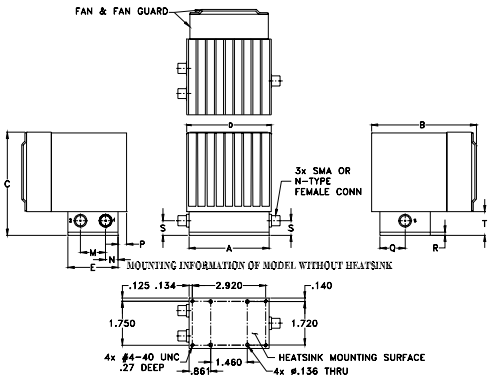
Applications

- PCS
- UMTS
- DCS
- GPS
- GSM
- WCDMA
- communication transmitters & receivers
- L-Band

Model No.	ZACS242-100W+	▲ZACS242-100WX+
Case Style	CP1829	
Connectors	SMA	

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

Outline Drawing



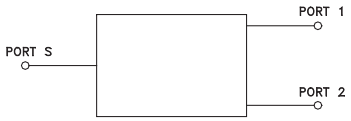
Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K
3.19	4.18	4.09	3.36	2.00	--	--	--	--	--
81.03	106.17	103.89	85.34	50.80	--	--	--	--	--

L	M	N	P	Q	R	S	T	wt
--	1.00	.50	.34	1.00	.13	.58	.94	grams*
--	25.40	12.70	8.64	25.40	3.30	14.73	23.88	710.0

*190 grams without heatsink

Electrical Schematic



Electrical Specifications at 25°C

Parameter		Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range			500		2450	MHz
Insertion Loss Above 3.0 dB		500-2450	—	0.8	1.3	dB
Isolation		500-2450	17	22	—	dB
Phase Unbalance		500-2450	—	2.0	6.0	Degree
Amplitude Unbalance		500-2450	—	0.1	0.3	dB
VSWR (Port S)		500-2450	—	1.3	—	:1
VSWR (Port 1-2)		500-2450	—	1.2	—	:1
Power Input[1]	as combiner[2]	500-2450	—	—	40	W
	as splitter	500-2450	—	—	100	

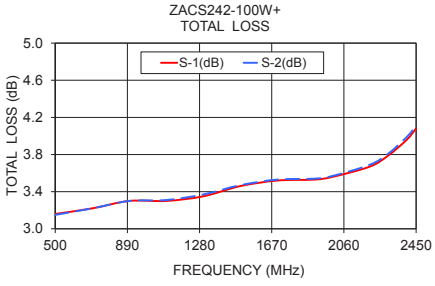
1. Over -55°C to +55°C. Derate linearly to 20% of rating at 90°C.
2. As a combiner of non-coherent signals, max. power per port is 20W.

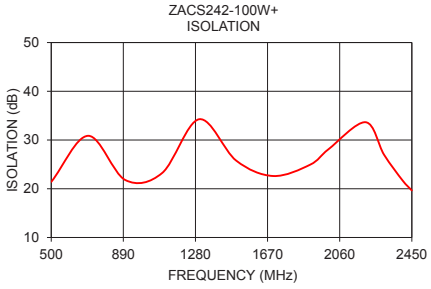
▲Heat sink and fan not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 55°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 1.3°C/W max.

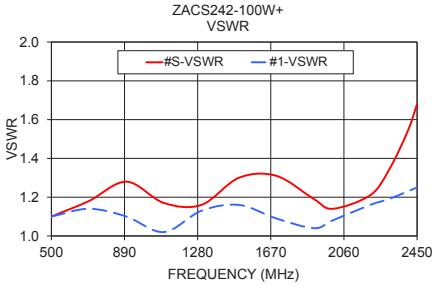
Typical Performance Data

Frequency (MHz)	Total Loss[1] (dB) S-1	Total Loss[1] (dB) S-2	Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
500.00	3.16	3.15	0.01	21.40	0.07	1.10	1.10	1.11
700.00	3.22	3.22	0.00	30.86	0.16	1.18	1.14	1.15
900.00	3.30	3.30	0.00	21.80	0.26	1.28	1.10	1.10
1100.00	3.30	3.31	0.01	23.23	0.35	1.17	1.02	1.03
1300.00	3.35	3.37	0.02	34.26	0.37	1.16	1.13	1.15
1500.00	3.46	3.47	0.02	25.78	0.37	1.30	1.16	1.16
1700.00	3.52	3.53	0.01	22.61	0.41	1.31	1.09	1.07
1900.00	3.53	3.54	0.01	24.93	0.51	1.19	1.04	1.06
2000.00	3.56	3.57	0.01	28.12	0.60	1.14	1.08	1.11
2200.00	3.67	3.69	0.02	33.65	0.73	1.21	1.16	1.18
2300.00	3.79	3.81	0.02	26.97	0.75	1.34	1.19	1.21
2400.00	3.96	3.99	0.03	21.70	0.78	1.54	1.23	1.24
2450.00	4.08	4.11	0.03	19.65	0.78	1.68	1.25	1.25

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







Notes
A. 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.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. 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

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2 Way-0° Power Splitter/Combiner ZACS242-100W+

Typical Performance Data

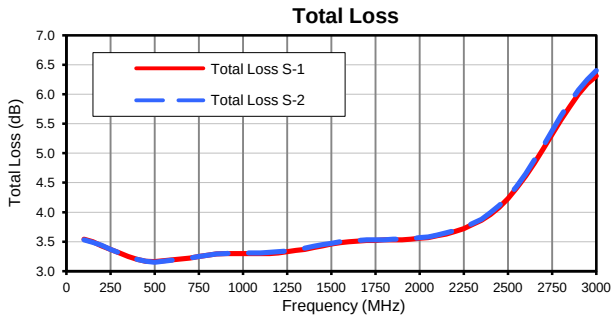
FREQUENCY (MHz)	TOTAL LOSS[1] (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB)	PHASE UNBALANCE (deg.)
	S-1	S-2		1-2	
100	3.54	3.53	0.01	6.15	0.02
150	3.50	3.49	0.01	7.98	0.03
200	3.43	3.44	0.00	9.61	0.04
250	3.37	3.37	0.00	11.16	0.02
300	3.31	3.31	0.00	12.71	0.03
350	3.25	3.25	0.00	14.35	0.04
400	3.20	3.20	0.00	16.23	0.05
450	3.17	3.17	0.01	18.48	0.05
500	3.16	3.15	0.01	21.40	0.07
700	3.22	3.22	0.00	30.86	0.16
750	3.25	3.25	0.00	26.44	0.19
800	3.27	3.27	0.00	24.00	0.19
850	3.29	3.29	0.00	22.59	0.23
900	3.30	3.30	0.00	21.80	0.26
950	3.30	3.31	0.01	21.51	0.27
1000	3.30	3.31	0.01	21.69	0.29
1050	3.30	3.31	0.01	22.22	0.32
1100	3.30	3.31	0.01	23.23	0.35
1150	3.30	3.32	0.02	24.78	0.36
1200	3.31	3.33	0.02	27.02	0.37
1250	3.33	3.34	0.02	30.23	0.36
1300	3.35	3.37	0.02	34.26	0.37
1350	3.37	3.39	0.02	34.86	0.36
1400	3.40	3.42	0.02	31.08	0.37
1450	3.43	3.45	0.01	27.95	0.36
1500	3.46	3.47	0.02	25.78	0.37
1550	3.48	3.50	0.01	24.33	0.38
1600	3.50	3.51	0.01	23.37	0.39
1650	3.51	3.52	0.01	22.84	0.41
1700	3.52	3.53	0.01	22.61	0.41
1750	3.52	3.53	0.01	22.77	0.44
1800	3.53	3.53	0.01	23.18	0.45
1850	3.53	3.54	0.01	23.89	0.48
1900	3.53	3.54	0.01	24.93	0.51
1950	3.54	3.55	0.01	26.28	0.54
2000	3.56	3.57	0.01	28.12	0.60
2050	3.57	3.58	0.01	30.29	0.61
2100	3.60	3.61	0.01	33.04	0.65
2150	3.63	3.65	0.01	35.00	0.68
2200	3.67	3.69	0.02	33.65	0.73
2250	3.72	3.74	0.02	30.21	0.73
2300	3.79	3.81	0.02	26.97	0.75
2350	3.86	3.88	0.02	24.14	0.75
2400	3.96	3.99	0.03	21.70	0.78
2450	4.08	4.11	0.03	19.65	0.76
2500	4.23	4.26	0.03	17.87	0.78
2550	4.41	4.44	0.04	16.38	0.77
2600	4.61	4.65	0.04	15.11	0.79
2650	4.83	4.88	0.05	14.07	0.77
2700	5.07	5.12	0.05	13.20	0.77
2750	5.32	5.38	0.05	12.53	0.77
2800	5.56	5.63	0.06	12.00	0.78
2850	5.79	5.86	0.06	11.62	0.81
2900	6.00	6.07	0.08	11.36	0.80
2950	6.18	6.25	0.07	11.23	0.85
3000	6.31	6.40	0.09	11.21	0.84

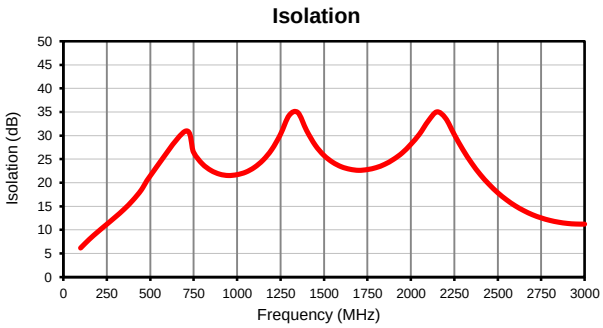
FREQUENCY (MHz)	VSWR (:1)		
	S	1	2
100	1.91	1.66	1.66
150	1.84	1.51	1.51
200	1.74	1.40	1.41
250	1.63	1.32	1.33
300	1.52	1.25	1.26
350	1.41	1.20	1.20
400	1.30	1.15	1.15
450	1.19	1.12	1.12
500	1.10	1.10	1.11
700	1.18	1.14	1.15
750	1.23	1.14	1.15
800	1.26	1.13	1.14
850	1.27	1.12	1.12
900	1.28	1.10	1.10
950	1.26	1.08	1.07
1000	1.24	1.05	1.04
1050	1.20	1.02	1.01
1100	1.17	1.02	1.03
1150	1.14	1.05	1.07
1200	1.12	1.08	1.10
1250	1.13	1.11	1.12
1300	1.16	1.13	1.15
1350	1.20	1.15	1.16
1400	1.24	1.16	1.17
1450	1.27	1.17	1.17
1500	1.30	1.16	1.16
1550	1.32	1.15	1.14
1600	1.33	1.14	1.12
1650	1.32	1.12	1.09
1700	1.31	1.09	1.07
1750	1.28	1.06	1.04
1800	1.26	1.04	1.03
1850	1.22	1.02	1.04
1900	1.19	1.04	1.06
1950	1.16	1.06	1.09
2000	1.14	1.08	1.11
2050	1.13	1.11	1.13
2100	1.14	1.12	1.15
2150	1.17	1.14	1.16
2200	1.21	1.16	1.18
2250	1.27	1.17	1.19
2300	1.34	1.19	1.21
2350	1.43	1.21	1.22
2400	1.54	1.23	1.24
2450	1.68	1.25	1.25
2500	1.85	1.27	1.28
2550	2.04	1.29	1.30
2600	2.27	1.32	1.32
2650	2.52	1.34	1.35
2700	2.80	1.38	1.38
2750	3.10	1.42	1.42
2800	3.41	1.47	1.47
2850	3.72	1.53	1.53
2900	4.00	1.61	1.60
2950	4.27	1.71	1.69
3000	4.48	1.83	1.78

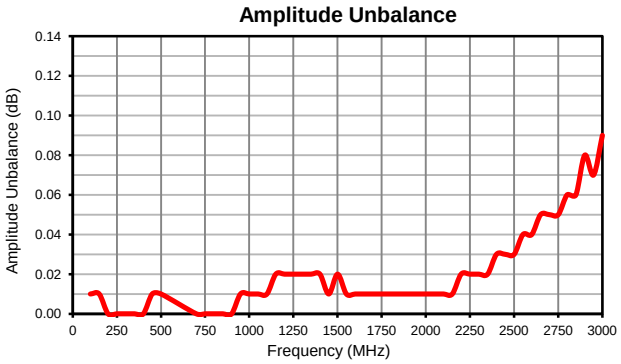
[1]Total Loss = Insertion Loss + 3dB Splitter Loss

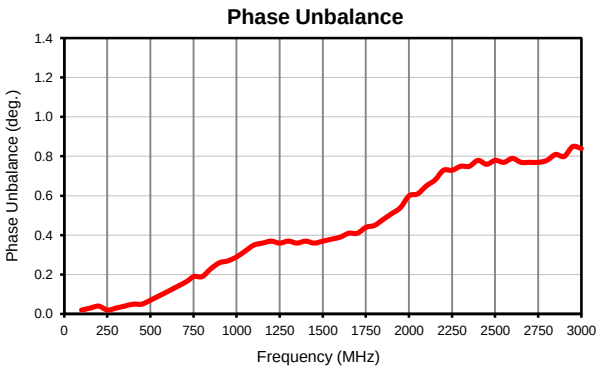
2 Way-0° Power Splitter/Combiner ZACS242-100W+

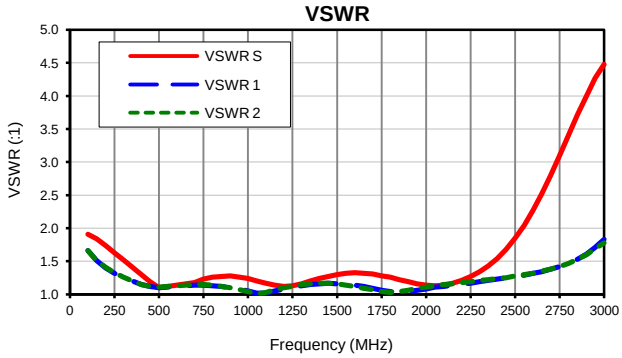
Typical Performance Curves







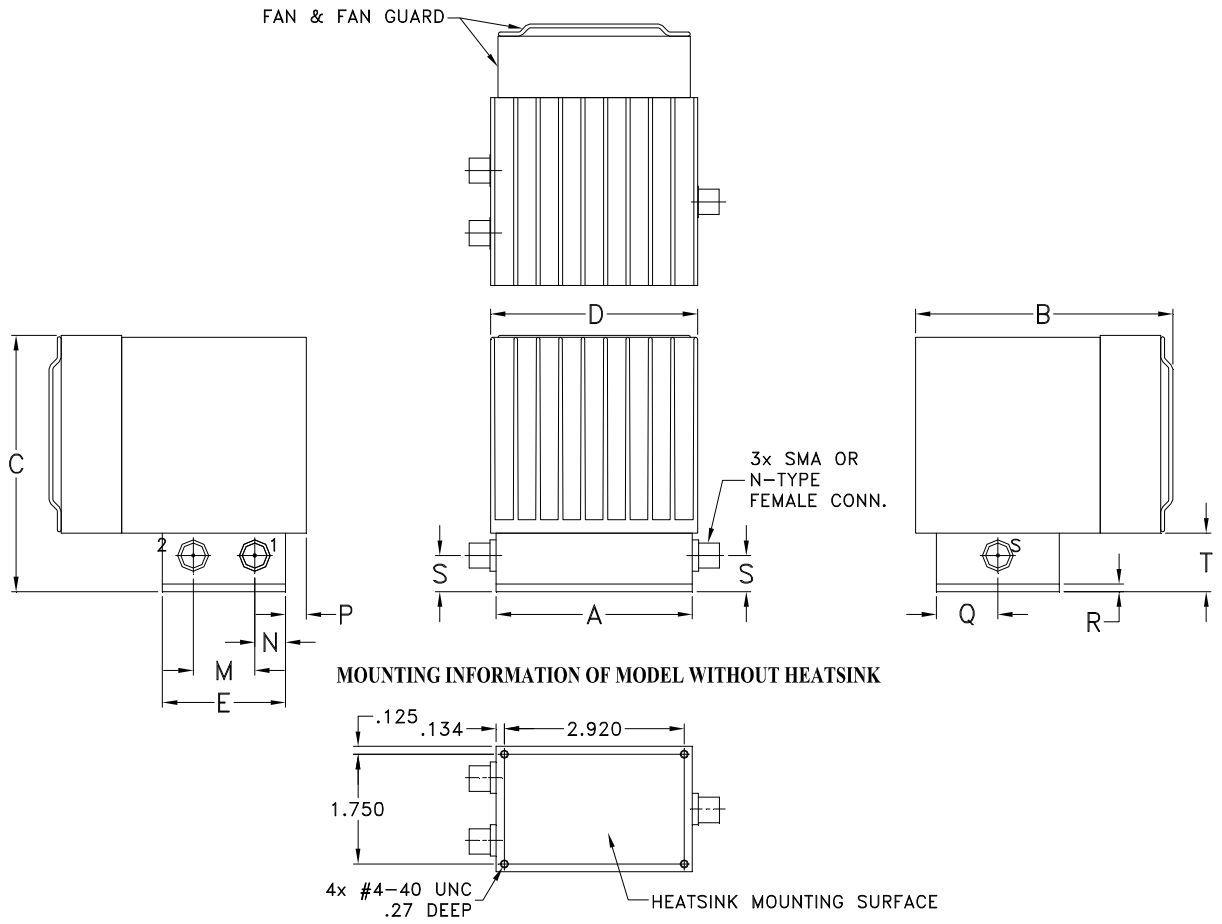




Case Style CP

Outline Dimensions

CP1829



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
CP1829	3.19 (80.98)	4.18 (106.17)	4.09 (103.89)	3.36 (85.34)	2.00 (50.80)	-- --	-- --	-- --	-- --	-- --	-- --	1.00 (25.40)	.50 (12.70)

CASE#	P	Q	R	S	T	WT. GRAMS	WT. WITHOUT HEATSINK GRAMS
CP1829	.34 (8.64)	1.00 (25.40)	.13 (3.30)	.58 (14.73)	.94 (23.88)	710	190

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish: For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome base.
3. Heat sink finish: Black anodize if supplied with heat sink.

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Environmental Specifications **ENV28T9**

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 90° 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

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