

High Power, DC Pass

# Power Splitter/Combiner

## ZACS362-100W+

2 Way-0° 50Ω Up to 100W 650 to 3600 MHz

### The Big Deal

- High power, up to 100W as a splitter
- Low insertion loss, 0.5 dB
- Good isolation, 22 dB



ZACS362-100WS+



ZACS362-100WSX+

### Product Overview

Mini-Circuits' ZACS362-100W+ is a 2-way 0° splitter/combiner providing very high power handling and low insertion loss across 600 to 3600 MHz, covering the primary wireless communications bands as well as satellite IF and GPS. Its outstanding combination of high power and low loss minimize power dissipation due to intrinsic losses and provide excellent signal fidelity from input to output. This model also provides high port-to-port isolation and very low amplitude and phase unbalance. It comes housed in a rugged aluminum alloy case with your choice of SMA or N-Type connectors and an optional heat sink and fan for cooling.

### Key Features

Feature	Advantages
Wideband, 650 to 3600 MHz	ZACS362-100W+ covers many wireless communications bands, making it suitable for a wide variety of applications.
High power handling: <ul style="list-style-type: none"><li>• 100W as a splitter</li><li>• 5W as a combiner</li></ul>	Suitable for many high power applications.
Low insertion loss, 0.5 dB	Very low insertion loss minimizes intrinsic losses, making this model a suitable candidate for high power signal distribution applications where low loss is a requirement.
Low unbalance: <ul style="list-style-type: none"><li>• 0.15 dB amplitude unbalance</li><li>• 1° phase unbalance</li></ul>	ZACS362-100W+ produces nearly equal output signals, ideal for parallel path / multichannel systems.
DC Passing, 1.6A (0.8A each port)	Supports applications where DC power is needed at later stages in the system.

#### 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](http://www.minicircuits.com/MCLStore/terms.jsp)



# High Power DC Pass Power Splitter/Combiner

## ZACS362-100W+

2 Way-0° 50Ω Up to 100W 600 to 3600 MHz



ZACS362-100WS+



ZACS362-100WSX+

Generic photo used for illustration purposes only  
CASE STYLE: CP1829

Connectors	Model
SMA	ZACS362-100WS+
SMA	ZACS362-100WSX+ <sup>+</sup>
N-TYPE	ZACS362-100WN+
N-TYPE	ZACS362-100WNX+ <sup>+</sup>

**+RoHS Compliant**

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

### Maximum Ratings

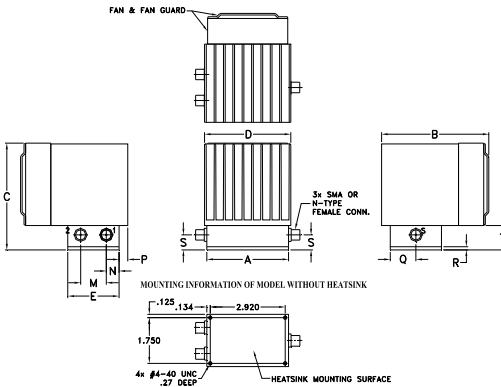
Operating Temperature	-55°C to 75°C
Storage Temperature	-55°C to 100°C
DC PASS	1.6A (0.8A/each port)
FAN DC Supply	24V
FAN Current	0.15A

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

### Coaxial Connections

SUM PORT	S
PORT 1	1
PORT 2	2

### Outline Drawing

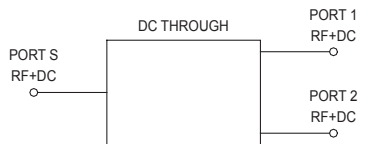


### Outline Dimensions (inch mm)

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



### Features

- high power, up to 100W as splitter
- high power, up to 5.0W as combiner
- low insertion loss, 0.5 dB typ.
- high isolation, 22 dB typ.
- excellent VSWR, 1.20 typ.

### Applications

- PCS
- GPS
- Wimax
- GSM
- UMTS
- WCDMA
- DCS
- communication transmitters & receivers

### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		600		3600	MHz
Insertion Loss Above 3.0 dB	690-2700 600-3600	—	0.3 0.6	0.7 1.2	dB
Isolation	690-2700 600-3600	18 13	22 18	—	dB
Phase Unbalance	600-3600	—	1.0	5.0	Degree
Amplitude Unbalance	600-3600	—	0.15	0.4	dB
VSWR (Port S)	600-3600	—	1.3	1.6	:1
VSWR (Port 1-2)	600-3600	—	1.15	1.35	:1
Power Input	as combiner	600-3600	—	5	W
	as splitter <sup>1</sup>	600-2700 2700-3600	—	100 50	

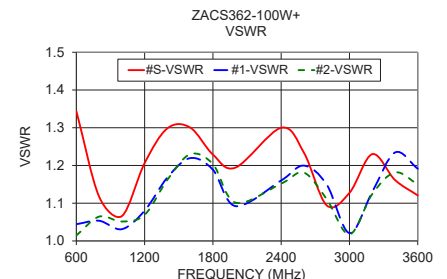
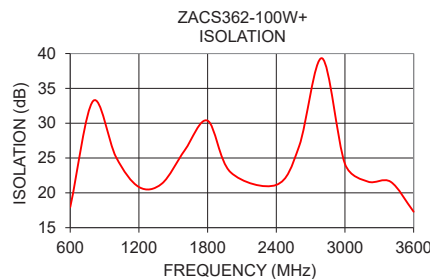
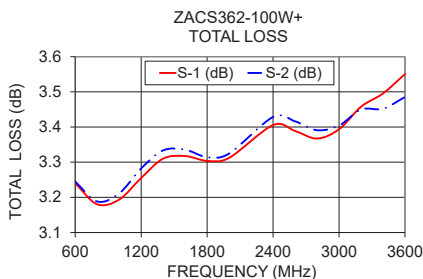
1. Over -55°C to +55°C. Derate linearly to 20% of rating at 75°C.  
All outputs must terminate 50 ohm (VSWR 1.5:1 or better)

<sup>+</sup>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 <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
600	3.24	3.24	0.00	17.94	0.17	1.34	1.04	1.01
800	3.18	3.19	0.01	33.19	0.17	1.12	1.05	1.06
1000	3.19	3.21	0.02	25.14	0.16	1.07	1.03	1.05
1200	3.26	3.28	0.03	20.84	0.16	1.21	1.08	1.07
1400	3.31	3.33	0.02	21.32	0.21	1.30	1.17	1.16
1600	3.32	3.34	0.02	26.11	0.25	1.30	1.22	1.23
1800	3.30	3.31	0.01	30.36	0.32	1.23	1.19	1.20
2000	3.31	3.32	0.01	22.97	0.37	1.19	1.09	1.10
2400	3.41	3.43	0.02	21.14	0.49	1.30	1.16	1.15
2600	3.39	3.42	0.03	26.71	0.57	1.23	1.20	1.18
2700	3.37	3.40	0.03	34.65	0.56	1.16	1.18	1.16
3000	3.39	3.40	0.01	24.15	0.57	1.13	1.02	1.02
3200	3.46	3.45	0.01	21.61	0.64	1.23	1.13	1.12
3400	3.50	3.45	0.04	21.58	0.68	1.16	1.23	1.18
3600	3.55	3.49	0.07	17.29	0.82	1.12	1.19	1.15

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



### Notes

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# 2 Way-0° Power Splitter/Combiner

# ZACS362-100W+

## Typical Performance Data

FREQUENCY (MHz)	TOTAL LOSS <sup>1</sup> (dB)		AMPLITUDE UNBALANCE (dB)	ISOLATION (dB) 1-2	PHASE UNBALANCE (deg.)	FREQUENCY (MHz)	VSWR		
	S-1	S-2					S	(:1) 1	2
100	3.53	3.54	0.01	4.86	0.04	100	1.95	1.75	1.75
150	3.52	3.54	0.02	6.03	0.02	150	1.91	1.59	1.60
200	3.51	3.52	0.01	7.23	0.02	200	1.86	1.45	1.46
250	3.48	3.49	0.01	8.43	0.03	250	1.80	1.35	1.36
300	3.45	3.45	0.00	9.59	0.10	300	1.74	1.26	1.27
350	3.40	3.42	0.02	10.76	0.13	350	1.68	1.20	1.21
400	3.37	3.38	0.01	11.94	0.10	400	1.61	1.15	1.15
450	3.34	3.34	0.01	13.18	0.10	450	1.55	1.10	1.10
500	3.30	3.30	0.00	14.59	0.16	500	1.47	1.07	1.06
550	3.27	3.27	0.00	16.15	0.17	550	1.41	1.05	1.03
600	3.24	3.24	0.00	17.94	0.17	600	1.34	1.04	1.01
650	3.21	3.22	0.00	20.16	0.18	650	1.28	1.05	1.03
700	3.20	3.20	0.00	22.90	0.18	700	1.22	1.05	1.04
750	3.19	3.19	0.00	26.78	0.19	750	1.17	1.05	1.06
800	3.18	3.19	0.01	33.19	0.17	800	1.12	1.05	1.06
850	3.18	3.19	0.01	51.38	0.17	850	1.07	1.05	1.07
900	3.18	3.19	0.01	33.53	0.17	900	1.03	1.05	1.07
950	3.19	3.20	0.01	28.30	0.16	950	1.03	1.04	1.06
1000	3.19	3.21	0.02	25.14	0.16	1000	1.07	1.03	1.05
1050	3.21	3.23	0.02	23.37	0.14	1050	1.10	1.03	1.04
1100	3.22	3.24	0.02	22.15	0.16	1100	1.14	1.04	1.04
1150	3.24	3.26	0.02	21.28	0.17	1150	1.17	1.06	1.05
1200	3.26	3.28	0.03	20.84	0.16	1200	1.21	1.08	1.07
1250	3.27	3.30	0.03	20.59	0.16	1250	1.23	1.10	1.10
1300	3.29	3.31	0.02	20.62	0.20	1300	1.26	1.12	1.11
1350	3.30	3.32	0.02	20.87	0.19	1350	1.28	1.15	1.15
1400	3.31	3.33	0.02	21.32	0.21	1400	1.30	1.17	1.16
1450	3.31	3.34	0.02	22.09	0.20	1450	1.31	1.19	1.19
1500	3.32	3.34	0.02	23.08	0.23	1500	1.31	1.20	1.21
1550	3.32	3.34	0.02	24.45	0.24	1550	1.30	1.21	1.22
1600	3.32	3.34	0.02	26.11	0.25	1600	1.30	1.22	1.23
1650	3.32	3.33	0.01	28.13	0.29	1650	1.29	1.22	1.23
1700	3.31	3.33	0.01	30.35	0.28	1700	1.27	1.22	1.23
1750	3.31	3.32	0.01	31.50	0.29	1750	1.25	1.21	1.22
1800	3.30	3.31	0.01	30.36	0.32	1800	1.23	1.19	1.20
1850	3.31	3.32	0.01	28.01	0.33	1850	1.22	1.17	1.18
1900	3.30	3.31	0.01	26.11	0.35	1900	1.20	1.15	1.16
1950	3.31	3.32	0.01	24.19	0.34	1950	1.20	1.13	1.13
2000	3.31	3.32	0.01	22.97	0.37	2000	1.19	1.09	1.10
2050	3.32	3.34	0.01	21.81	0.38	2050	1.22	1.06	1.07
2100	3.33	3.35	0.02	21.04	0.39	2100	1.23	1.03	1.05
2150	3.35	3.37	0.02	20.63	0.42	2150	1.24	1.02	1.03
2200	3.36	3.38	0.02	20.24	0.42	2200	1.27	1.04	1.05
2250	3.38	3.40	0.02	20.19	0.46	2250	1.28	1.07	1.08
2300	3.39	3.41	0.02	20.24	0.46	2300	1.29	1.10	1.11
2350	3.40	3.43	0.03	20.53	0.48	2350	1.30	1.13	1.13
2400	3.41	3.43	0.02	21.14	0.49	2400	1.30	1.16	1.15
2450	3.41	3.44	0.03	21.79	0.49	2450	1.30	1.18	1.17
2500	3.41	3.43	0.03	23.00	0.52	2500	1.28	1.19	1.18
2550	3.40	3.42	0.03	24.61	0.52	2550	1.26	1.20	1.18
2600	3.39	3.42	0.03	26.71	0.57	2600	1.23	1.20	1.18
2650	3.38	3.40	0.03	29.83	0.53	2650	1.20	1.20	1.17
2700	3.37	3.40	0.03	34.65	0.56	2700	1.16	1.18	1.16
2750	3.36	3.39	0.03	49.02	0.59	2750	1.11	1.16	1.14
2800	3.37	3.39	0.02	39.33	0.58	2800	1.09	1.15	1.11
2850	3.37	3.39	0.02	32.16	0.59	2850	1.06	1.11	1.09
2900	3.37	3.39	0.02	28.27	0.60	2900	1.07	1.09	1.05
2950	3.39	3.41	0.01	26.14	0.60	2950	1.08	1.07	1.03
3000	3.39	3.40	0.01	24.15	0.57	3000	1.13	1.02	1.02
3050	3.42	3.44	0.01	22.95	0.58	3050	1.17	1.02	1.04
3100	3.42	3.43	0.01	22.47	0.63	3100	1.18	1.05	1.07
3150	3.46	3.45	0.00	21.87	0.62	3150	1.21	1.09	1.10
3200	3.46	3.45	0.01	21.61	0.64	3200	1.23	1.13	1.12
3250	3.48	3.46	0.02	21.73	0.63	3250	1.23	1.17	1.15
3300	3.48	3.46	0.02	21.77	0.65	3300	1.21	1.18	1.16
3350	3.49	3.45	0.03	21.82	0.69	3350	1.19	1.21	1.19
3400	3.50	3.45	0.04	21.58	0.68	3400	1.16	1.23	1.18
3450	3.49	3.44	0.05	21.05	0.70	3450	1.12	1.23	1.18
3500	3.51	3.44	0.07	20.15	0.71	3500	1.07	1.24	1.17
3550	3.52	3.45	0.06	18.78	0.66	3550	1.06	1.22	1.16
3600	3.55	3.49	0.07	17.29	0.82	3600	1.12	1.19	1.15
3650	3.61	3.51	0.10	15.82	0.84	3650	1.21	1.20	1.11
3700	3.70	3.60	0.10	14.32	0.65	3700	1.36	1.17	1.09
3750	3.82	3.72	0.09	13.01	0.75	3750	1.53	1.15	1.08
3800	3.97	3.87	0.10	11.93	0.72	3800	1.71	1.18	1.11
3850	4.17	4.08	0.09	10.96	0.81	3850	1.95	1.22	1.17
3900	4.42	4.31	0.11	10.11	0.81	3900	2.23	1.27	1.23
3950	4.69	4.59	0.10	9.45	0.83	3950	2.55	1.37	1.32
4000	5.01	4.89	0.11	8.90	0.83	4000	2.90	1.47	1.40



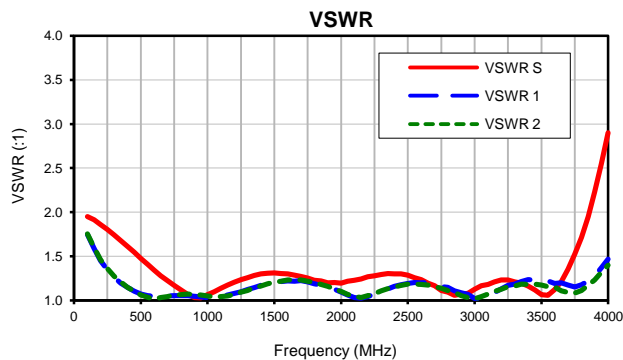
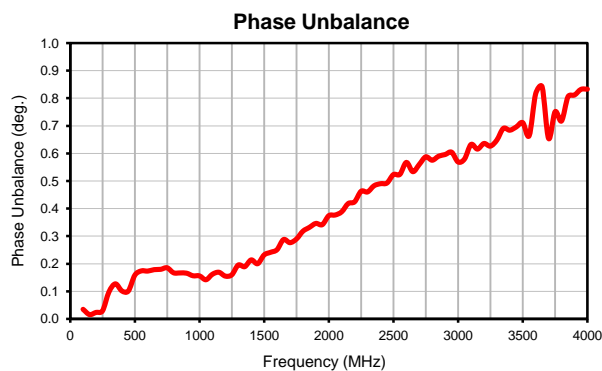
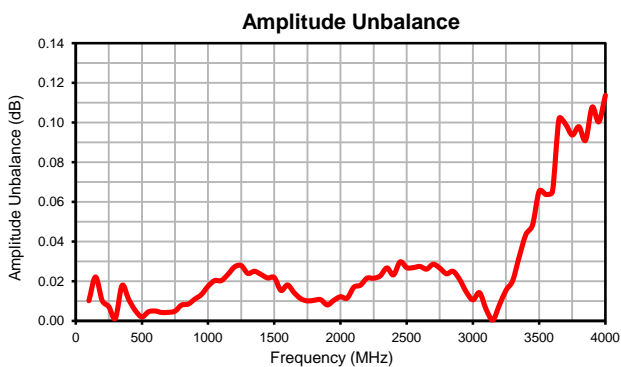
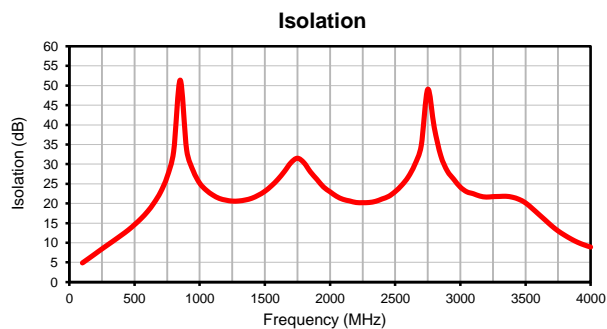
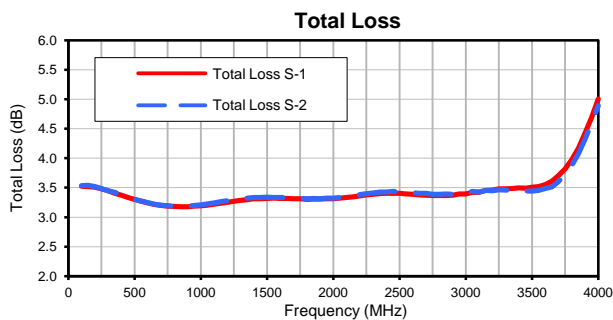
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 • Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site  
 The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

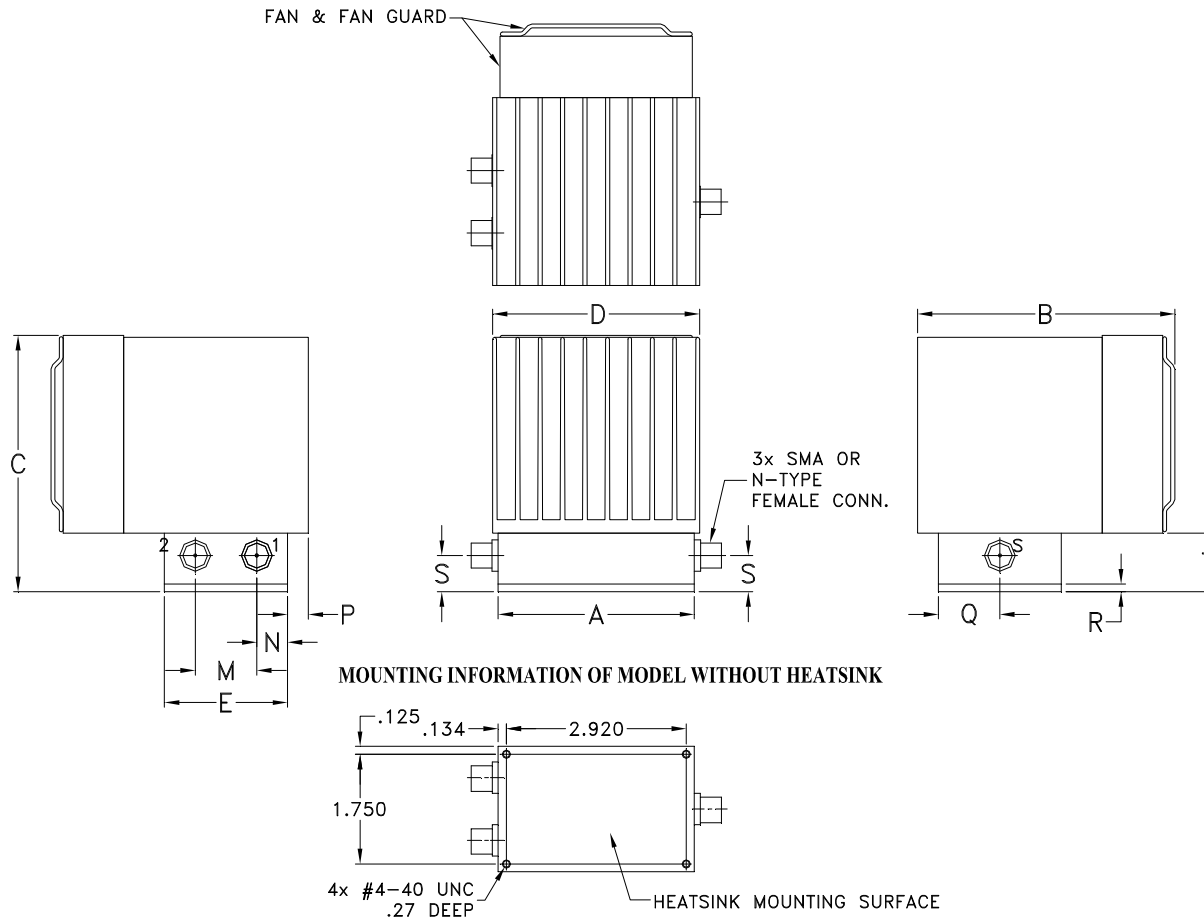
REV. OR  
 ZACS362-100W+  
 6/2/2015

# 2 Way-0° Power Splitter/Combiner

# ZACS362-100W+

## Typical Performance Curves





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.  $\pm .03$ ; 3 Pl.  $\pm .015$

### Notes:

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



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



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RF/MICROWAVE COMPONENTS

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.

<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
Operating Temperature	-55° to 75°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