COAXIAL

Bias-Tee/Diplexer

Z4BT-2R15GW+

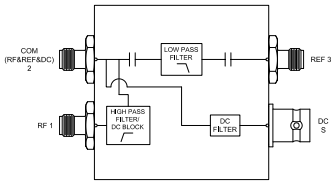
50Ω (10-100, 950-2150) MHz SMA, BNC Female

KEY FEATURES

- Integrated Multifunctional L-Band+DC Bias-Tee + Common Reference Inject
- DC Pass Through: 2A, 48V
- Low Insertion Loss, 0.5 dB Typ.
- Good Isolation, 50 dB Typ.

Generic photo used for illustration purposes only

FUNCTIONAL DIAGRAM



APPLICATIONS

- Satelllite Communications
- Wireless Infrastructure
- Medical Equipment
- Test Accessory

PRODUCT OVERVIEW

Mini-Circuits' Z4BT-2R15GW+ is a combination of bias tee and diplexer designed to support L-B and communications application.Ideally suited for satellite communication installations, the Z4BT-2R15GW+ combines wide band, flat response bias tee performance with additional functionality to inject 100MHz reference clock in a single compact design. Built in a rugged shielded case, the Z4BT-2R15GW+ is equipped with SMA, BNC Female connectors for all ports.
The Z4BT-2R15GW+ is ideally suited for powering Satellite up converters and LNBs where IF, DC and 100MHz clock reference are all injected on a single coax cable.

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Function (Port)	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range	—	—	10	—	2150	MHz
Insertion Loss	REF to Common	10 - 100	—	0.5	0.7	dB
	RF to Common	950 - 2150	—	0.7	1.5	
Return Loss	Common to REF	10 - 100	12	20	—	dB
	RF & Common	950 - 2150	12	18	—	
Isolation	REF to RF	10 - 100	40	50	—	dB
	RF to DC	10 - 100	60	70	—	
	Common to DC	10 - 100	27	40	—	
	REF to DC	10 - 100	27	40	—	
	RF to REF	950 - 2150	35	50	—	dB
	RF to DC	950 - 2150	30	50	—	
	Common to DC	950 - 2150	30	50	—	
	REF to DC	950 - 2150	30	50	—	
DC Resistance	DC to RF&REF&DC	—	—	0.5	—	Ohm

ABSOLUTE MAXIMUM RATINGS[1]

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power	30 dBm Max.
Voltage at DC Port	+48 V Max.
Current at DC Port	2 A

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

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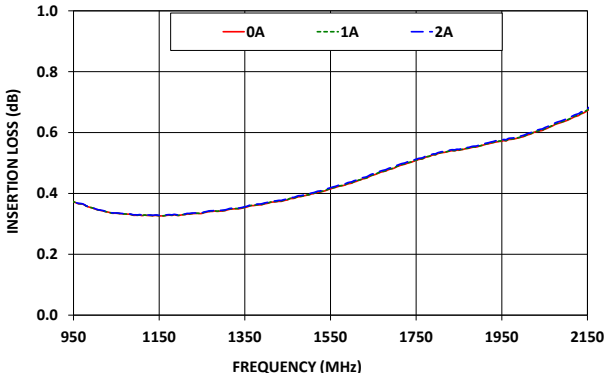
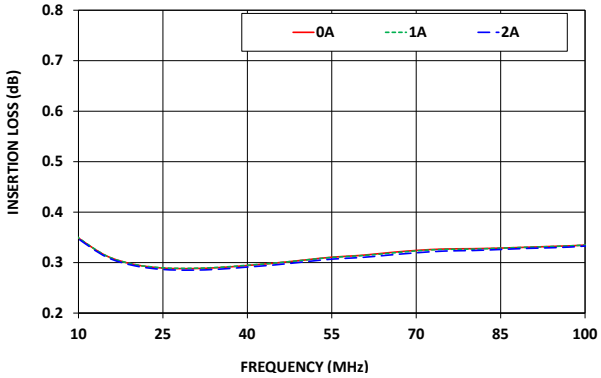
50Ω (10-100, 950-2150) MHz SMA, BNC Female

TYPICAL PERFORMANCE GRAPHS

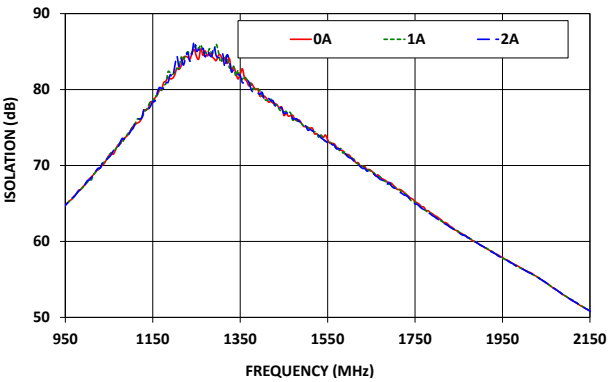
Z4BT-2R15GW+
RF to Common port
INSERTION LOSS WITH CURRENT (Pin= 0dBm)



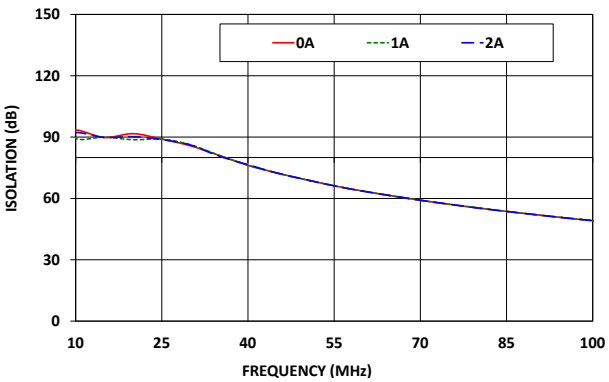
Z4BT-2R15GW+
REF to Common port
INSERTION LOSS WITH CURRENT (Pin= 0dBm)



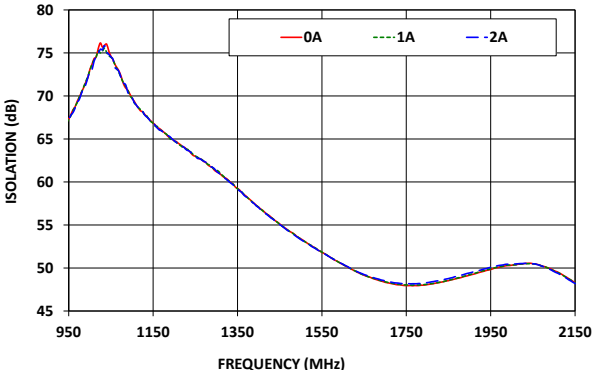
Z4BT-2R15GW+
RF to REF port
ISOLATION WITH CURRENT (Pin= 0dBm)



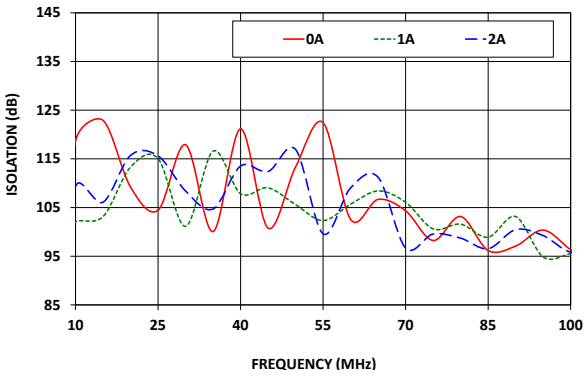
Z4BT-2R15GW+
REF to RF port
ISOLATION WITH CURRENT (Pin= 0dBm)



Z4BT-2R15GW+
RF to DC port
ISOLATION WITH CURRENT (Pin= 0dBm)



Z4BT-2R15GW+
RF to DC port
ISOLATION WITH CURRENT (Pin= 0dBm)



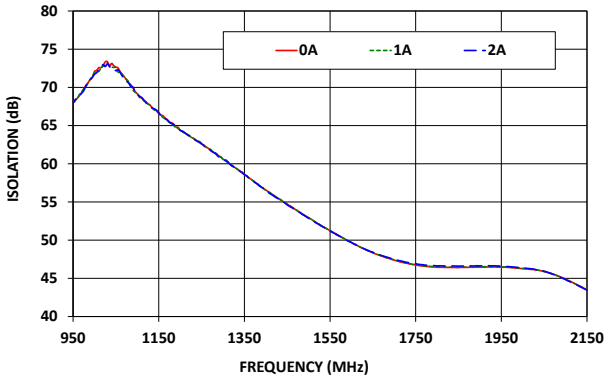
Bias-Tee/Diplexer

Z4BT-2R15GW+

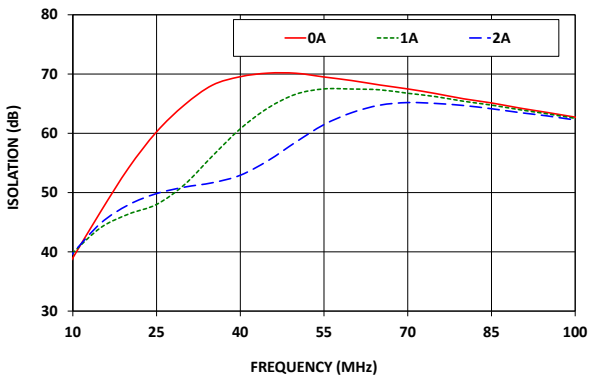
50Ω (10-100, 950-2150) MHz SMA, BNC Female

TYPICAL PERFORMANCE GRAPHS

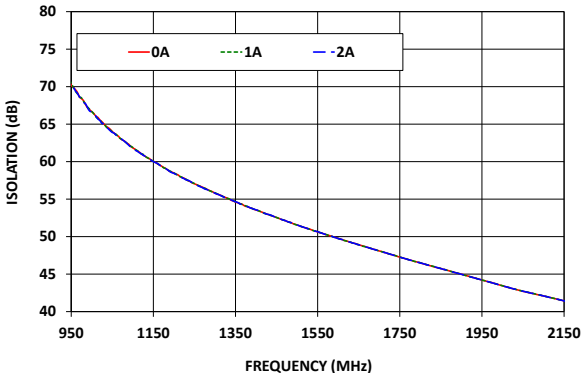
Z4BT-2R15GW+
Common port to DC port
ISOLATION WITH CURRENT (Pin= 0dBm)



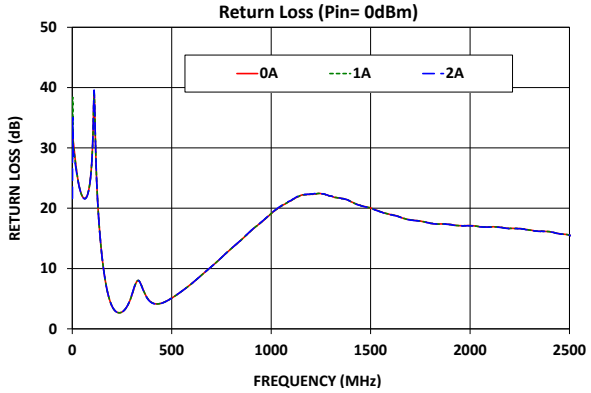
Z4BT-2R15GW+
Common port to DC port
ISOLATION WITH CURRENT (Pin= 0dBm)



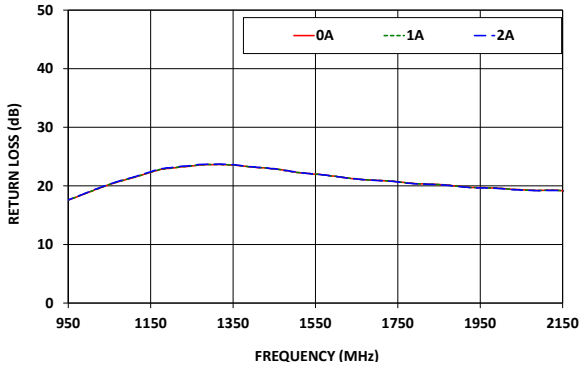
Z4BT-2R15GW+
REF to DC port
ISOLATION WITH CURRENT (Pin= 0dBm)



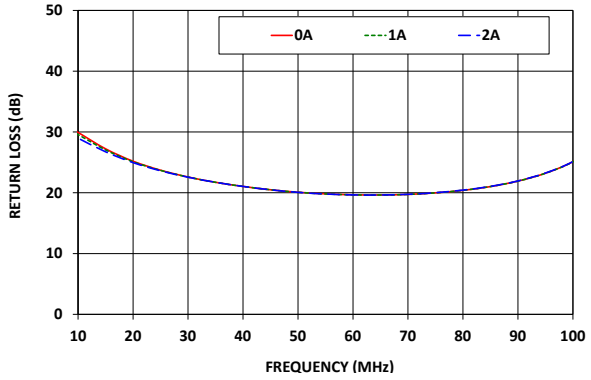
Z4BT-2R15GW+
Common port
Return Loss (Pin= 0dBm)



Z4BT-2R15GW+
RF port
Return Loss (Pin= 0dBm)



Z4BT-2R15GW+
REF port
Return Loss (Pin= 0dBm)



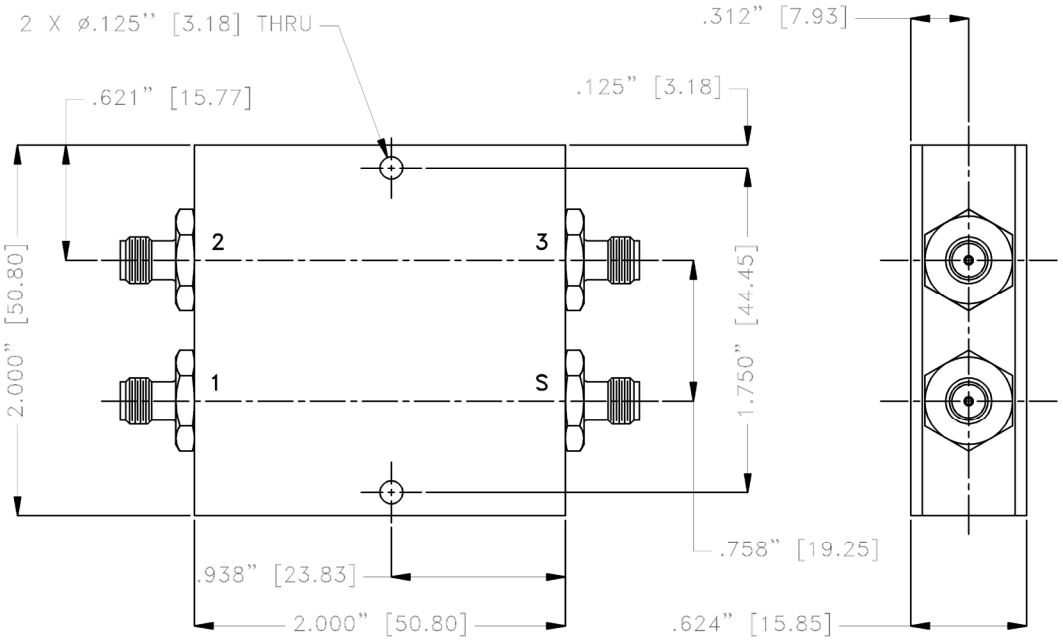
Bias-Tee/Diplexer Z4BT-2R15GW+

50Ω (10-100, 950-2150) MHz SMA, BNC Female

COAXIAL CONNECTIONS

Description	RF PORT	COM (RF&REF&DC) PORT	REF PORT	DC PORT
Connector Type	SMA Female	SMA Female	SMA Female	BNC Female
Orientation	1	2	3	S

CASE STYLE DRAWING



Unit Weight: 99 Grams.
Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

PRODUCT MARKING*: Z4BT-2R15GW+

*Marking may contain other features or characters for internal lot control.

Bias-Tee/Diplexer Z4BT-2R15GW+

50Ω (10-100, 950-2150) MHz SMA, BNC Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S4P Files) Data Set (.zip file)
Case Style	CC1823
RoHS Status	Compliant
Environmental Ratings	ENV28T19

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.

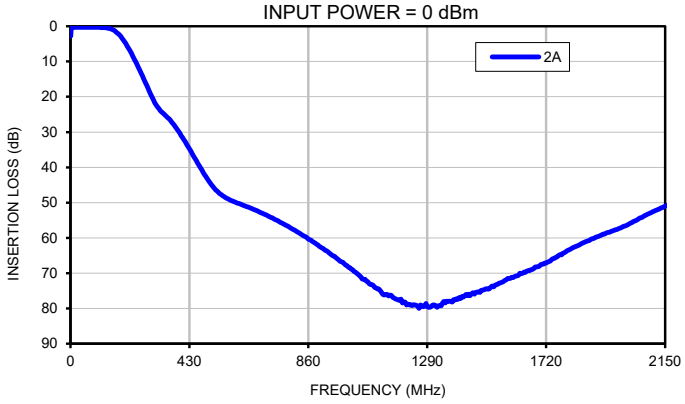
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

Typical Performance Data

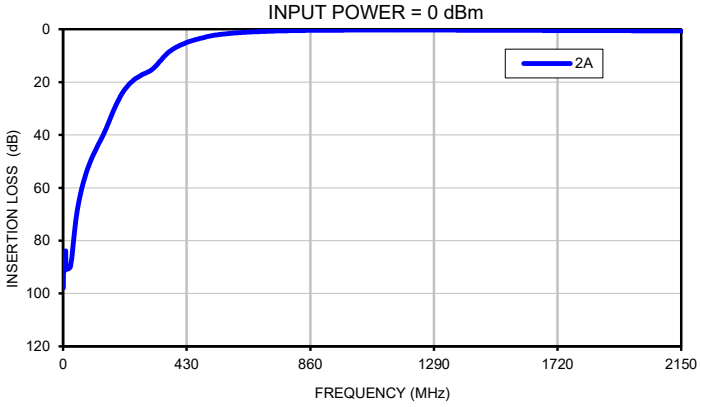
FREQ.	INSERTION LOSS (PIN= 0dBm)		ISOLATION (PIN= 0dBm)				Return Loss (Port 1)	Return Loss (Port 2)	Return Loss (Port 3)
	(Port 3-2)	(Port 2-1)	(Port 3-1)	(Port 1-S)	(Port 2-S)	(Port 3-S)			
(MHz)	(dB)		(dB)				(:1)	(:1)	(:1)
	2A	2A	2A	2A	2A	2A	2A	2A	2A
10	0.35	90.14	92.91	109.30	39.75	39.91	0.00	28.35	28.99
15	0.31	90.82	89.16	106.10	44.83	45.07	0.00	27.34	26.74
20	0.29	90.58	88.56	115.71	47.95	48.30	0.00	26.28	24.96
30	0.29	86.78	85.56	108.41	50.92	51.48	0.01	24.35	22.57
50	0.30	68.41	69.11	116.93	58.55	58.56	0.01	21.97	20.07
70	0.32	58.33	59.16	96.67	65.19	64.93	0.01	21.73	19.75
80	0.32	54.57	55.36	98.71	64.69	64.97	0.02	22.59	20.44
90	0.33	51.41	52.07	100.47	63.50	63.98	0.02	24.49	21.95
100	0.33	48.70	49.14	95.86	62.25	62.72	0.02	28.71	25.14
140	0.62	40.01	40.17	97.63	57.44	59.93	0.04	15.23	15.51
150	0.88	37.57	38.53	93.15	56.31	60.90	0.05	11.84	11.62
190	3.74	27.31	34.69	92.01	54.03	63.51	0.08	4.58	3.38
220	7.67	22.11	34.42	85.39	55.79	59.48	0.12	2.85	1.33
240	10.76	19.78	34.93	86.04	57.08	59.09	0.16	2.65	0.77
270	15.81	17.49	36.41	84.55	55.27	59.55	0.24	3.45	0.40
280	17.55	16.95	37.00	79.19	53.85	59.73	0.27	4.02	0.34
290	19.28	16.46	37.59	75.38	52.36	59.99	0.31	4.77	0.29
300	20.91	15.92	38.10	71.58	51.03	60.18	0.36	5.73	0.26
310	22.34	15.20	38.41	68.28	49.91	60.20	0.42	6.79	0.24
340	25.05	11.73	37.89	61.63	48.22	59.91	0.75	7.73	0.19
370	27.54	8.50	37.31	58.15	48.77	59.67	1.30	5.44	0.16
420	33.45	5.45	38.17	55.01	51.50	60.14	2.55	4.12	0.14
430	34.77	5.03	38.49	54.52	52.16	60.39	2.86	4.11	0.13
480	41.43	3.40	40.49	53.22	56.15	61.31	4.98	4.71	0.12
500	43.86	2.88	41.45	53.80	58.61	61.78	5.95	5.10	0.12
510	44.96	2.64	41.94	54.51	60.19	61.98	6.37	5.31	0.12
520	45.90	2.42	42.44	55.43	62.08	62.18	6.70	5.53	0.12
560	48.54	1.80	44.45	61.79	74.27	63.06	7.49	6.47	0.12
580	49.35	1.59	45.43	67.05	91.41	63.64	7.85	6.97	0.11
590	49.71	1.49	45.95	70.79	79.83	63.86	8.04	7.23	0.11
610	50.31	1.33	46.93	73.87	71.34	64.68	8.46	7.77	0.11
650	51.53	1.07	48.94	64.79	65.32	65.99	9.39	8.91	0.12
740	54.78	0.68	53.40	60.26	61.87	70.40	11.69	11.51	0.12
770	56.04	0.61	54.92	60.40	61.96	73.45	12.53	12.45	0.13
790	56.90	0.56	55.92	60.65	62.30	75.40	13.08	13.04	0.13
810	57.81	0.52	57.00	61.08	62.54	78.47	13.64	13.63	0.13
890	61.84	0.42	61.32	63.69	64.80	78.13	15.96	16.03	0.14
900	62.40	0.41	61.91	64.12	65.09	76.40	16.26	16.34	0.15
950	65.12	0.37	64.77	67.24	67.94	70.27	17.60	17.70	0.15
1000	67.89	0.35	67.99	72.76	71.72	66.61	18.98	19.15	0.17
1030	69.72	0.34	69.67	75.37	73.07	65.08	19.80	19.93	0.17
1080	72.99	0.33	73.57	71.51	70.55	62.69	20.96	20.96	0.18
1100	74.09	0.33	74.58	69.84	69.12	61.73	21.35	21.29	0.19
1110	74.45	0.33	75.54	68.96	68.68	61.42	21.55	21.53	0.19
1150	76.44	0.33	78.44	66.91	66.68	60.00	22.40	22.20	0.20
1250	79.08	0.34	85.05	63.05	62.59	57.01	23.51	22.45	0.22
1390	77.58	0.37	79.55	57.45	56.93	53.76	23.28	21.28	0.26
1400	77.42	0.37	79.64	57.03	56.51	53.57	23.26	21.10	0.27
1500	74.51	0.40	75.20	53.30	52.87	51.57	22.41	19.99	0.30
1670	68.94	0.47	68.18	48.91	47.99	48.58	21.05	18.27	0.35
1700	67.64	0.49	67.09	48.49	47.49	48.10	20.92	18.04	0.36
1760	65.39	0.52	64.62	48.16	46.81	47.11	20.60	17.77	0.38
1800	63.46	0.53	62.99	48.30	46.63	46.49	20.33	17.50	0.40
1900	59.76	0.56	59.50	49.43	46.63	44.98	19.87	17.28	0.43
1930	58.91	0.57	58.48	49.82	46.64	44.52	19.68	17.12	0.45
1950	58.37	0.58	57.77	50.07	46.60	44.21	19.67	17.08	0.45
2000	56.75	0.59	56.23	50.46	46.36	43.44	19.54	17.08	0.47
2050	54.85	0.62	54.57	50.49	45.92	42.72	19.26	16.90	0.49
2100	52.82	0.64	52.58	49.59	44.84	42.09	19.20	16.88	0.51
2150	51.03	0.68	50.84	48.21	43.48	41.42	19.15	16.82	0.53

Typical Performance Curves

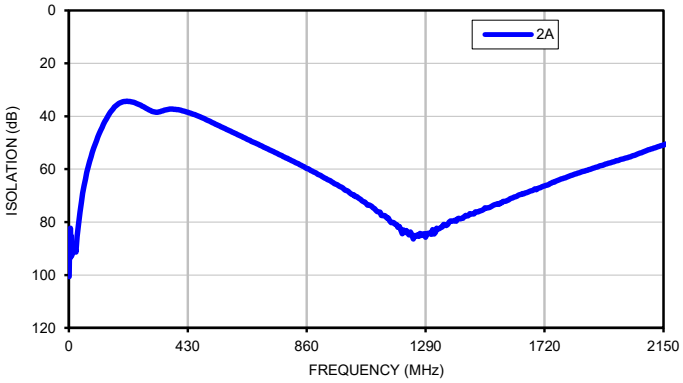
REF to COMMON INSERTION LOSS WITH CURRENT
INPUT POWER = 0 dBm



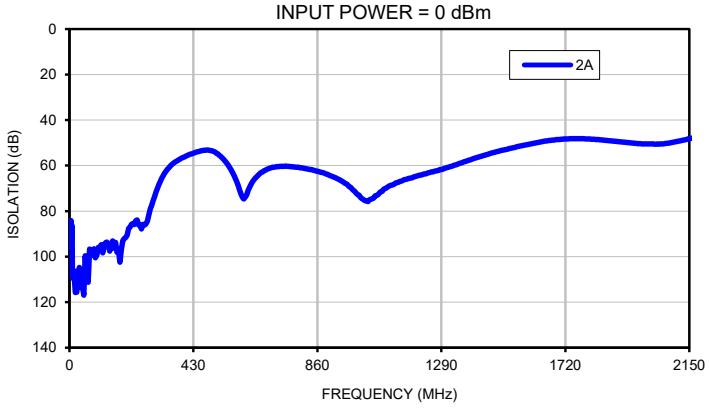
RF to COMMON INSERTION LOSS WITH CURRENT
INPUT POWER = 0 dBm



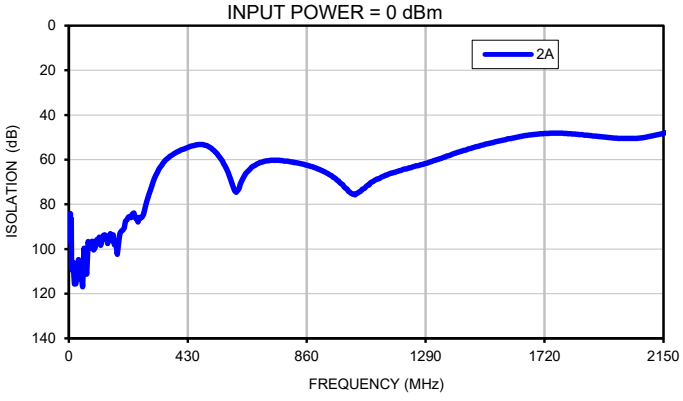
REF to RF ISOLATION WITH CURRENT
INPUT POWER = 0 dBm



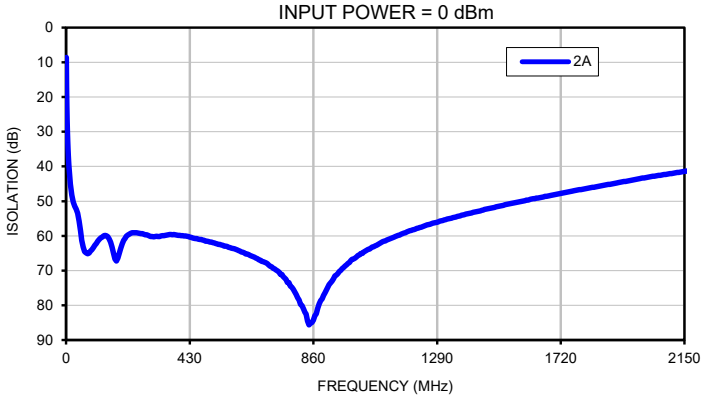
RF to DC ISOLATION WITH CURRENT
INPUT POWER = 0 dBm



COMMON to DC ISOLATION WITH CURRENT
INPUT POWER = 0 dBm

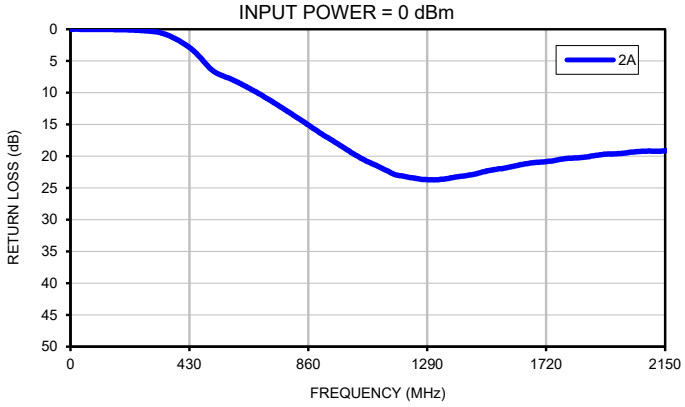


REF to DC ISOLATION WITH CURRENT
INPUT POWER = 0 dBm

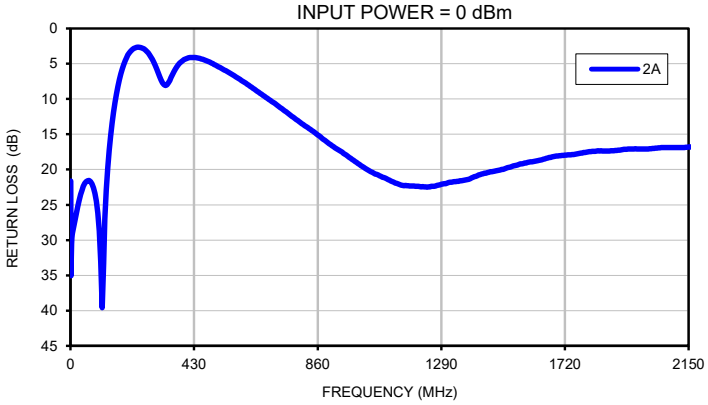


Typical Performance Curves

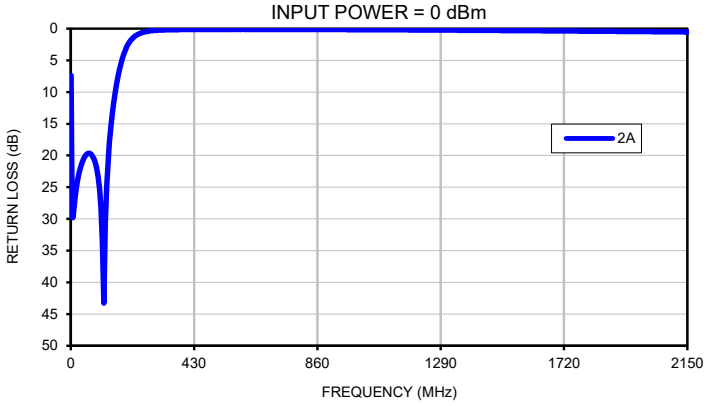
RF RETURN LOSS WITH CURRENT
INPUT POWER = 0 dBm



COMMON RETURN LOSS WITH CURRENT
INPUT POWER = 0 dBm



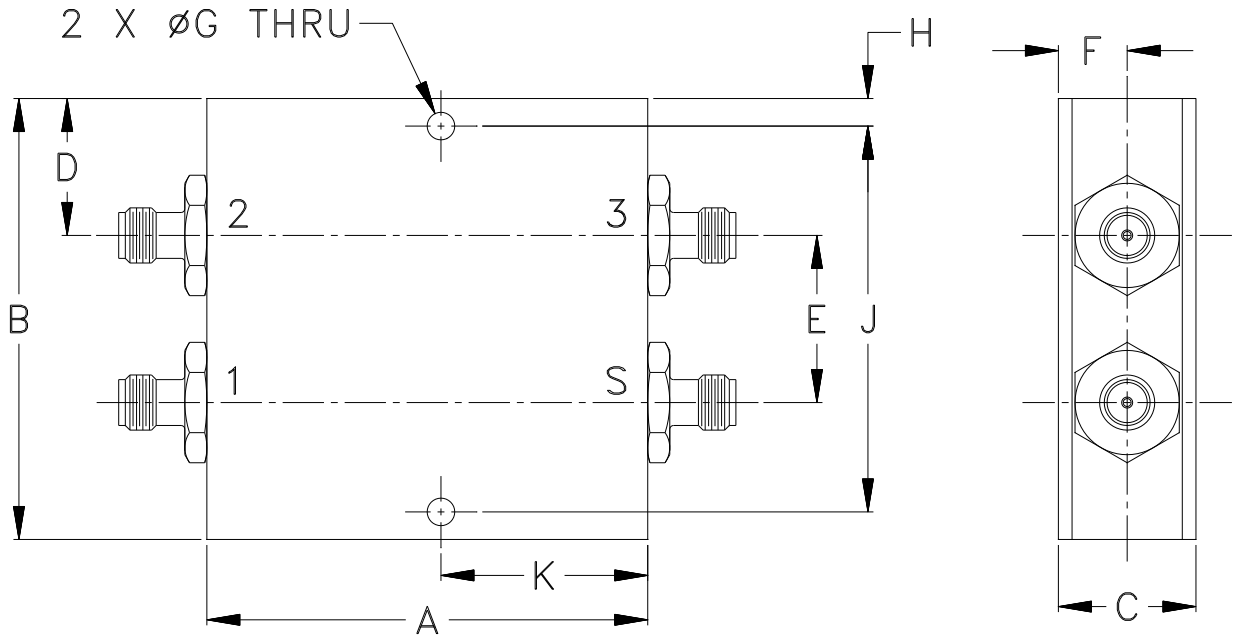
REF RETURN LOSS WITH CURRENT
INPUT POWER = 0 dBm



Case Style CC

Outline Dimensions

CC1823



CASE#	A	B	C	D	E	F	G	H	J	K	WT. GRAMS
CC1823	2.000 (50.80)	2.000 (50.80)	0.624 (15.85)	0.621 (15.77)	0.758 (19.25)	0.312 (7.93)	0.125 (3.18)	0.125 (3.18)	1.750 (44.45)	0.938 (23.83)	99

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 based.
3. Refer to the individual model data sheet for the type of connectors available.

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Mini-Circuits

Environmental Specifications **ENV28T19**

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 85°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
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
Connector Durability	500 mating/unmating cycles	MIL-PRF-39012E, PARAGRAPH 4.6.12

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