

# Coaxial Bias-Tee

50Ω Wideband 0.2 to 12000 MHz

## ZX85-12G-S+



Generic photo used for illustration purposes only

CASE STYLE: GC957

Connectors	Model
SMA	ZX85-12G-S+

**+RoHS Compliant**

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

### Maximum Ratings

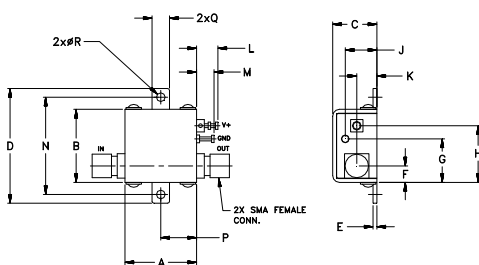
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	30dBm
Voltage at DC port	25V
DC Current	400mA
DC resistance from DC to RF&DC port	1.8Ω

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

### Coaxial Connections

RF	OUT
RF&DC	IN
DC	V+

### Outline Drawing



### Outline Dimensions (inch)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	wt
.74	.75	.46	1.18	.04	.17	.45	.59	.33	.21	.22	.14	1.00	.37	.16	1.06	grams
18.80	19.1	11.68	30.0	1.02	4.32	11.4	14.99	8.38	5.33	5.59	3.56	25.40	9.40	4.57	2.69	23.0

### Features

- wideband, 0.2 to 12000 MHz
- low insertion loss, 0.6 dB typ.
- high current capability, 400 mA
- small size 0.74" x 0.75" x 0.46"
- rugged unibody construction
- protected by US patent 6,790,049

### Applications

- biasing amplifiers
- biasing of laser diodes
- biasing of active antennas
- DC return
- DC blocking
- test accessory

### Bias-Tee Electrical Specifications

FREQ. (MHz)	INSERTION LOSS* (dB)						VSWR* (:1)						
	$f_L$	$f_U$	L		M		U		L		M		U
0.2	12000	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.
		0.1	0.5	0.6	1.5	1.0	2.5	1.1	1.5	1.2	1.5	1.2	1.5

L= low range( $f_L$  to  $10 f_L$ )

M=mid range( $10 f_L$  to  $f_U/2$ )

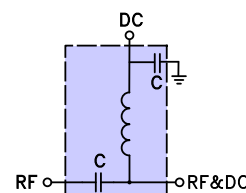
U=upper range ( $f_U/2$  to  $f_U$ )

\*Insertion Loss and VSWR are guaranteed up to 20 dBm RF power and 200mA DC current.

### Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB) with current		VSWR (:1) with current	
	0mA	200mA	0mA	200mA
0.20	0.09	0.25	1.17	1.18
700.00	0.52	0.93	1.10	1.05
1600.00	1.21	0.65	1.24	1.25
2400.00	0.84	1.14	1.14	1.15
3200.00	0.67	0.76	1.05	1.06
4000.00	0.76	0.77	1.07	1.06
4800.00	0.71	0.81	1.11	1.10
5600.00	0.66	0.76	1.10	1.11
6200.00	0.65	0.73	1.08	1.11
7000.00	0.69	0.75	1.07	1.09
7800.00	0.88	0.80	1.11	1.09
8600.00	1.11	1.11	1.11	1.08
9200.00	1.11	1.15	1.07	1.07
10000.00	1.21	1.20	1.02	1.07
12000.00	1.37	1.39	1.15	1.11

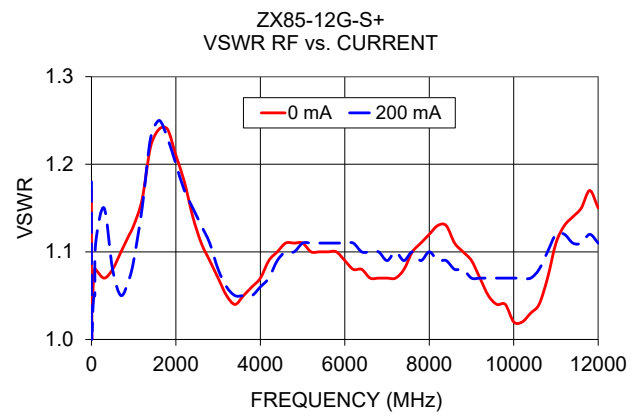
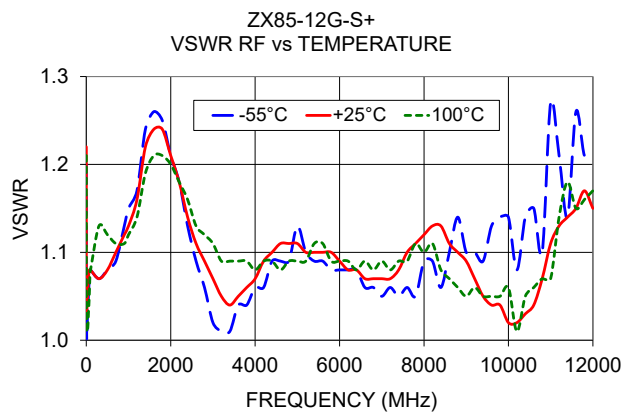
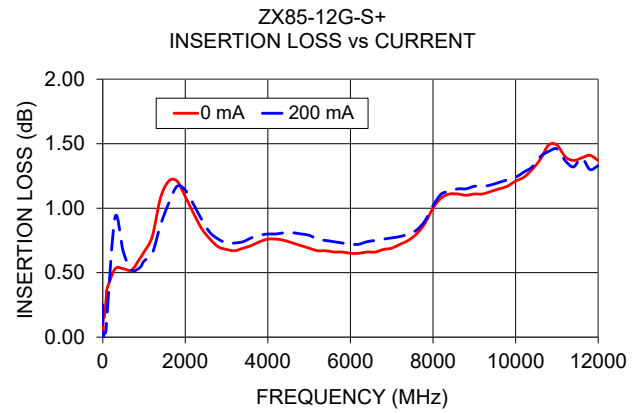
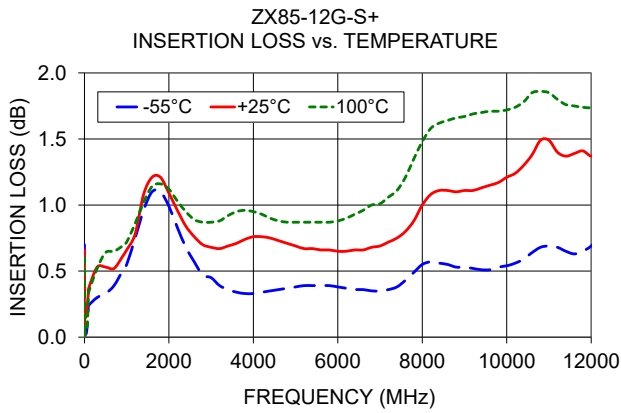
### Electrical Schematic



### 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-Circuits' applicable established test performance criteria and measurement instructions.
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# Bias Tee, Coaxial

# ZX85-12G+

## Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (RF Port to RF&DC Port) (dB)				
	+25°		-55°	0mA	
	0mA	200mA		+25°	+100°
0.2	0.09	0.25	0.24	0.09	0.22
0.7	0.02	0.03	0.14	0.02	0.14
2	0.01	0.01	0.08	0.01	0.09
5	0.00	0.01	0.02	0.00	0.01
8	0.00	0.00	0.04	0.00	0.03
30	0.15	0.03	0.02	0.15	0.04
300	0.53	0.93	0.30	0.53	0.52
700	0.52	0.52	0.39	0.52	0.65
1600	1.21	1.04	1.10	1.21	1.14
2400	0.84	0.91	0.68	0.84	0.95
3200	0.67	0.73	0.39	0.67	0.88
4000	0.76	0.80	0.33	0.76	0.95
4800	0.71	0.80	0.37	0.71	0.87
5600	0.66	0.74	0.39	0.66	0.87
6000	0.65	0.72	0.38	0.65	0.88
6200	0.65	0.72	0.37	0.65	0.90
7000	0.69	0.77	0.35	0.69	1.01
7800	0.88	0.90	0.49	0.88	1.35
8600	1.11	1.15	0.55	1.11	1.64
9200	1.11	1.17	0.52	1.11	1.69
10000	1.21	1.24	0.54	1.21	1.72
12000	1.37	1.33	0.69	1.37	1.74

FREQ. (MHz)	VSWR RF Port (:1)					VSWR RF&DC Port (:1)				
	+25°		-55°	0mA		+25°		-55°	0mA	
	0mA	200mA		+25°	+100°	0mA	200mA		+25°	+100°
0.2	1.17	1.18	1.20	1.17	1.21	1.17	1.18	1.20	1.17	1.21
0.7	1.04	1.04	1.05	1.04	1.05	1.04	1.04	1.05	1.04	1.05
2	1.01	1.01	1.03	1.01	1.03	1.01	1.01	1.03	1.01	1.03
5	1.00	1.00	1.02	1.00	1.03	1.00	1.00	1.02	1.00	1.03
8	1.00	1.00	1.02	1.00	1.03	1.00	1.00	1.02	1.00	1.03
30	1.05	1.03	1.03	1.05	1.01	1.02	1.02	1.03	1.02	1.02
300	1.07	1.15	1.07	1.07	1.13	1.11	1.07	1.08	1.11	1.14
700	1.10	1.05	1.09	1.10	1.11	1.10	1.14	1.11	1.10	1.11
1600	1.24	1.25	1.26	1.24	1.21	1.25	1.25	1.31	1.25	1.21
2400	1.14	1.15	1.13	1.14	1.16	1.17	1.17	1.21	1.17	1.16
3200	1.05	1.06	1.01	1.05	1.09	1.10	1.09	1.15	1.10	1.06
4000	1.07	1.06	1.06	1.07	1.08	1.16	1.15	1.16	1.16	1.14
4800	1.11	1.10	1.09	1.11	1.09	1.22	1.23	1.22	1.22	1.19
5600	1.10	1.11	1.09	1.10	1.11	1.22	1.25	1.23	1.22	1.22
6000	1.09	1.11	1.08	1.09	1.09	1.22	1.25	1.23	1.22	1.22
6200	1.08	1.11	1.08	1.08	1.09	1.22	1.24	1.22	1.22	1.22
7000	1.07	1.09	1.05	1.07	1.09	1.22	1.24	1.22	1.22	1.26
7800	1.11	1.09	1.05	1.11	1.11	1.25	1.24	1.19	1.25	1.29
8600	1.11	1.08	1.10	1.11	1.07	1.23	1.18	1.21	1.23	1.28
9200	1.07	1.07	1.10	1.07	1.06	1.25	1.20	1.24	1.25	1.32
10000	1.02	1.07	1.14	1.02	1.06	1.25	1.23	1.25	1.25	1.28
12000	1.15	1.11	1.21	1.15	1.17	1.16	1.20	1.08	1.16	1.15

REV. X1  
ZX85-12G+  
080205  
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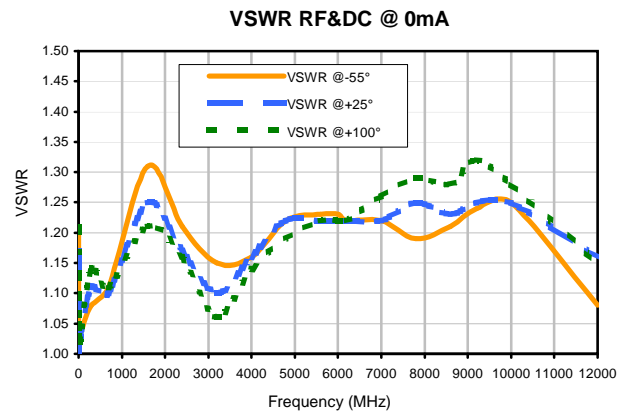
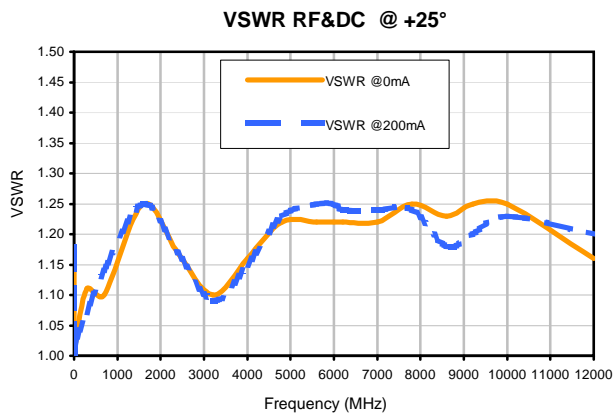
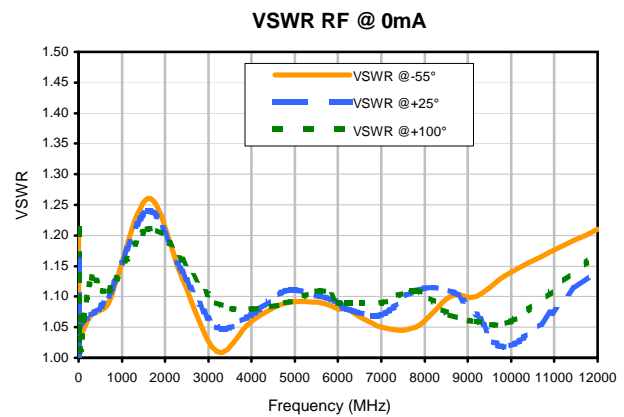
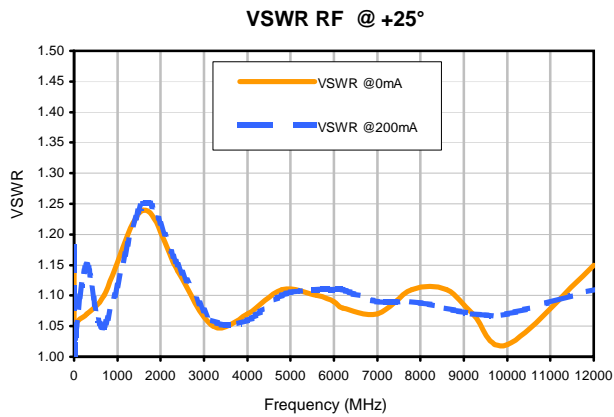
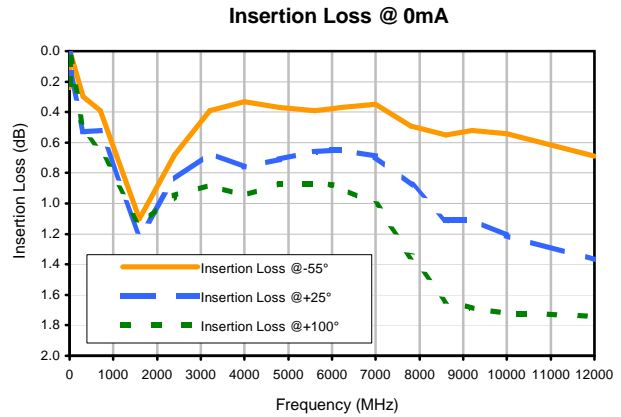
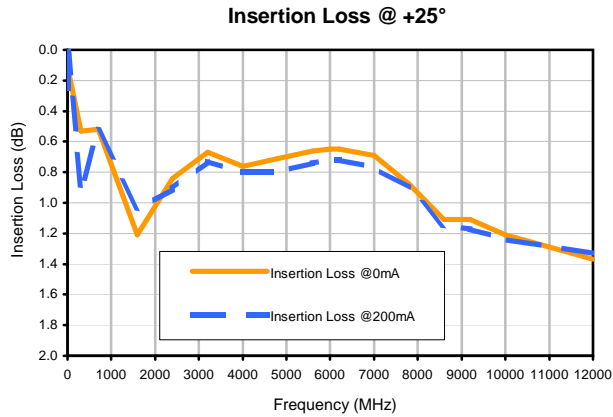
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## Typical Performance Curves

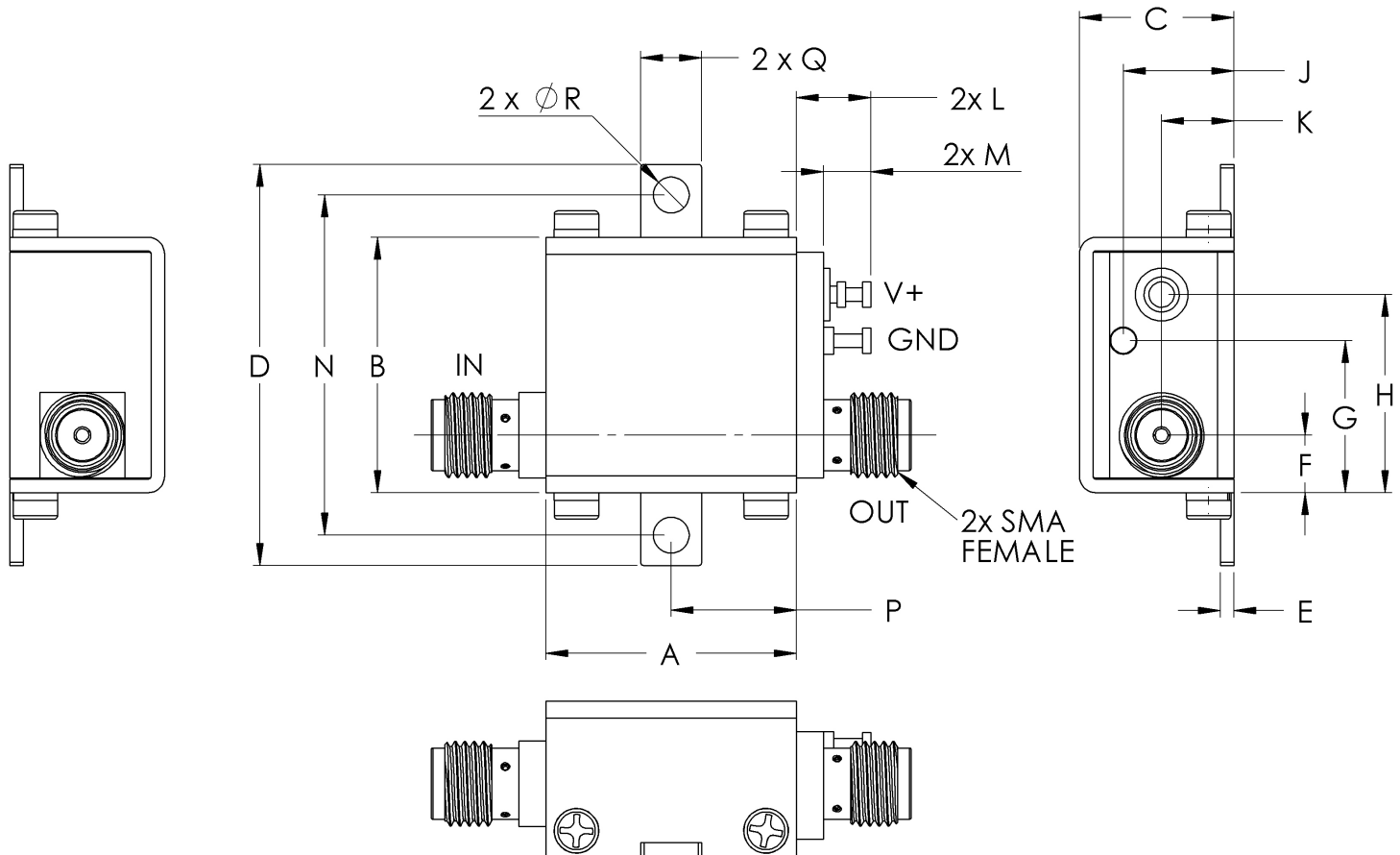


# Case Style

# GC

## Outline Dimensions

## GC957



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M	N
GC957	.74 (18.80)	.75 (19.15)	.46 (11.61)	1.18 (30.07)	.04 (1.02)	.17 (4.32)	.45 (11.40)	.59 (14.86)	.33 (8.31)	.21 (5.44)	.22 (5.59)	.14 (3.56)	1.00 (25.4)

CASE #.	P	Q	R	WT GRAMS
GC957	.37 (9.40)	.18 (4.57)	.106 (2.69)	23.0

Dimensions are in inches (mm). Tolerances: 2Pl.  $\pm .03$ ; 3Pl.  $\pm .015$   
Tolerance on hole size and interaxes dimensions to be  $\pm .005$ .

### Note:

1. Case material: Brass
2. Case finish: Nickel plate

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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.

<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
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