Coaxial

Bias-Tee

ZX85-40W-63-S+

50Ω Up to 40W 700 to 6000 MHz

The Big Deal

- Wideband, 700 to 6000 MHz
- High power handling, 40W
- Low insertion loss, 0.5 dB
- Small size, 0.74 x 0.74 x 0.46”
- Rugged Unibody construction

CASE STYLE: GC957

Product Overview

Mini-Circuits’ ZX85-40W-63-S+ is a coaxial bias tee providing high power handling and low insertion loss for applications over a very wide frequency range from 700 to 6000 MHz. It provides 33 dB typical DC-RF isolation and handles up to 1A DC current at the input. This model features rugged unibody construction with SMA connectors, providing excellent durability, small case size (0.74 x 0.75 x 0.46”), saving space in crowded system layouts.

Key Features

Feature	Advantages
Wideband, 700 to 6000 MHz	Suitable for a wide range of high-power applications.
High RF power handling, 40W	ZX85-40W-63-S+ supports systems with high power requirements such has high power amplifiers, repeaters, transmit antennas and more.
Low insertion loss, 0.5 dB	Preserves signal strength from input to output and minimizes overall system loss.
Good DC-RF isolation, 33 dB typ.	Minimizes RF leakage and interference with other elements in the system.
Rugged unibody construction	Mini-Circuits’ patented unibody construction integrates the RF connectors with the case, allowing excellent survivability in tough conditions including military or industrial systems.
Small size, 0.74 x 0.75 x 0.46”	Saves space in crowded system layouts.

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Generic photo used for illustration purposes only

CASE STYLE: GC957

Connectors	Model
SMA	ZX85-40W-63-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 65°C
Storage Temperature	-55°C to 100°C
Voltage at DC port	30V
DC Current	1A
DC resistance from DC to RF&DC port	0.8Ω

Permanent damage may occur if any of these limits are exceeded. Alternate heatsinking and heat removal must be provided by the user to limit maximum temperature to 65°C. Heat sink should be 5°C/ W max.

Coaxial Connections

RF	OUT
RF&DC	IN
DC	V+

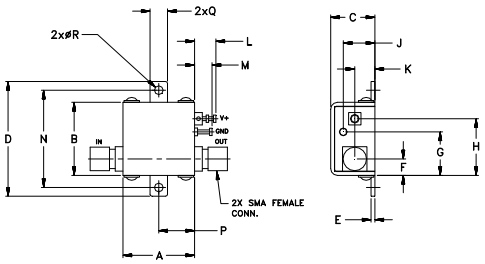
Features

- wideband, 700 to 6000 MHz
- low insertion loss, 0.5 dB typ.
- high isolation, 33 dB typ.
- 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

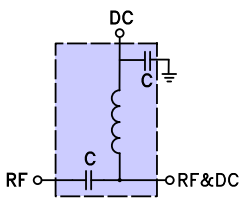
Outline Drawing



Outline Dimensions (inch / mm)

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	.18	.106	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

Electrical Schematic



Electrical Specifications at 25°C

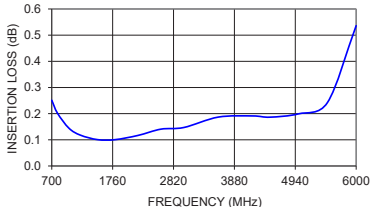
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		700		6000	MHz
Insertion Loss*	700 - 4200	—	0.2	0.6	dB
	4200 - 6000	—	0.5	0.9	
Isolation*	700 - 6000	20	33	—	dB
VSWR	1000 - 4200	—	1.2	1.5	:1
	700 - 6000	—	1.4	1.8	
Input Power	700 - 4200	—	—	40	W
	4200 - 6000	—	—	25	

*Insertion Loss and Isolation are guaranteed up to 43 dBm RF power and 800 mA DC current at 700-4200 MHz.
*Insertion Loss and Isolation are guaranteed up to 41 dBm RF power and 800 mA DC current at 4200-6000 MHz.

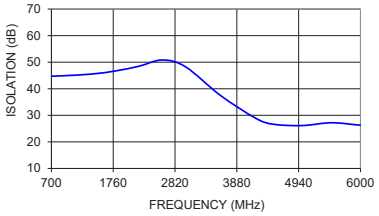
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	ISOLATION (dB)	VSWR (:1)
700	0.25	44.72	1.52
800	0.20	44.79	1.43
1000	0.14	45.00	1.31
1200	0.12	45.23	1.22
1500	0.10	45.78	1.14
1800	0.10	46.72	1.08
2200	0.12	48.46	1.08
2600	0.14	50.82	1.13
3000	0.15	48.28	1.17
3600	0.19	37.48	1.20
4200	0.19	28.94	1.19
4500	0.19	26.66	1.17
5000	0.20	26.14	1.07
5500	0.24	27.20	1.12
6000	0.54	26.27	1.48

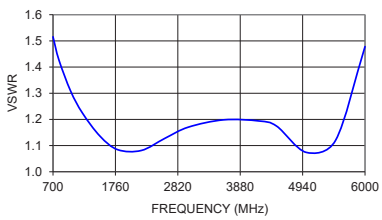
ZX85-40W-63-S+
INSERTION LOSS



ZX85-40W-63-S+
ISOLATION



ZX85-40W-63-S+
VSWR



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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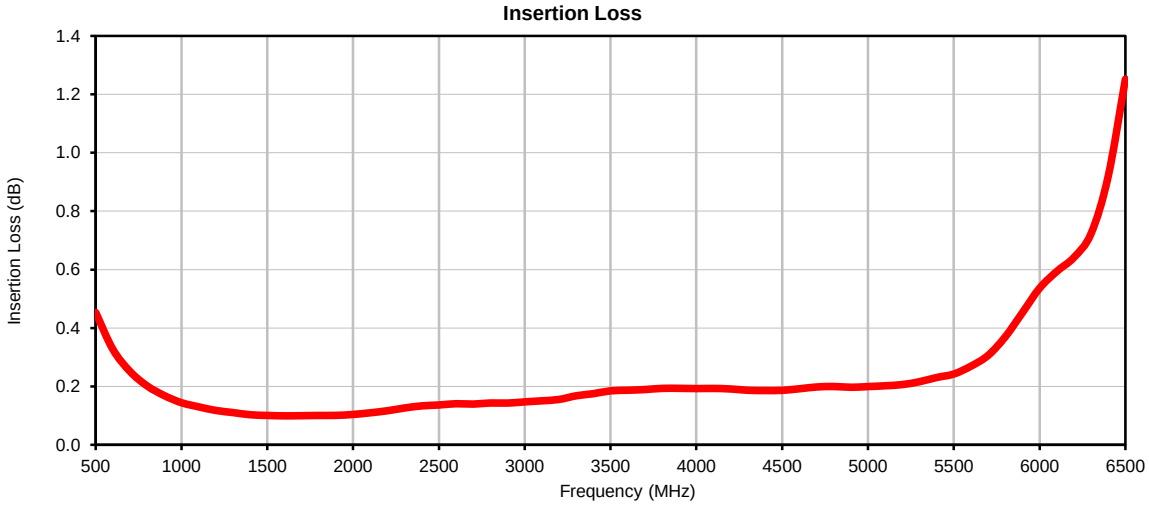
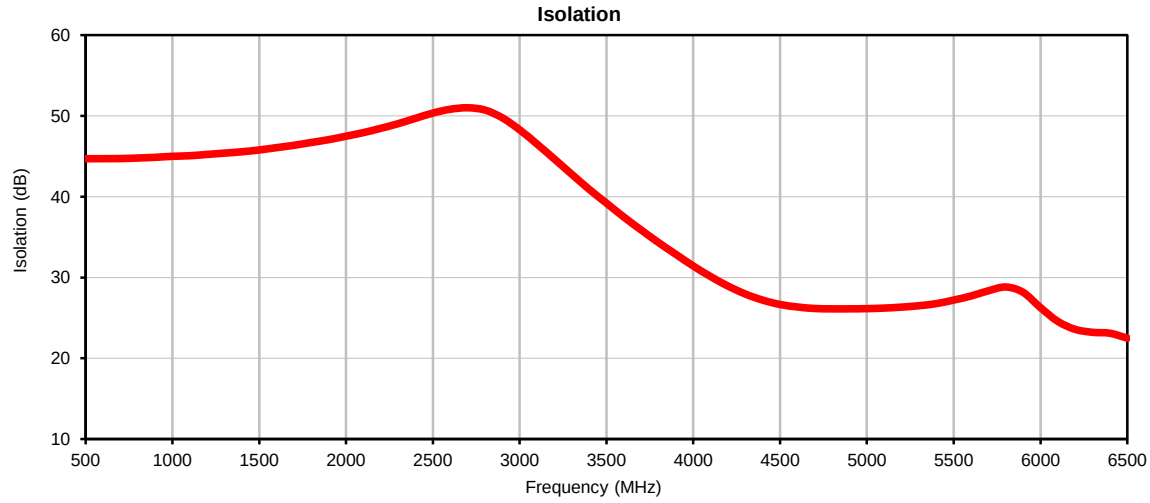
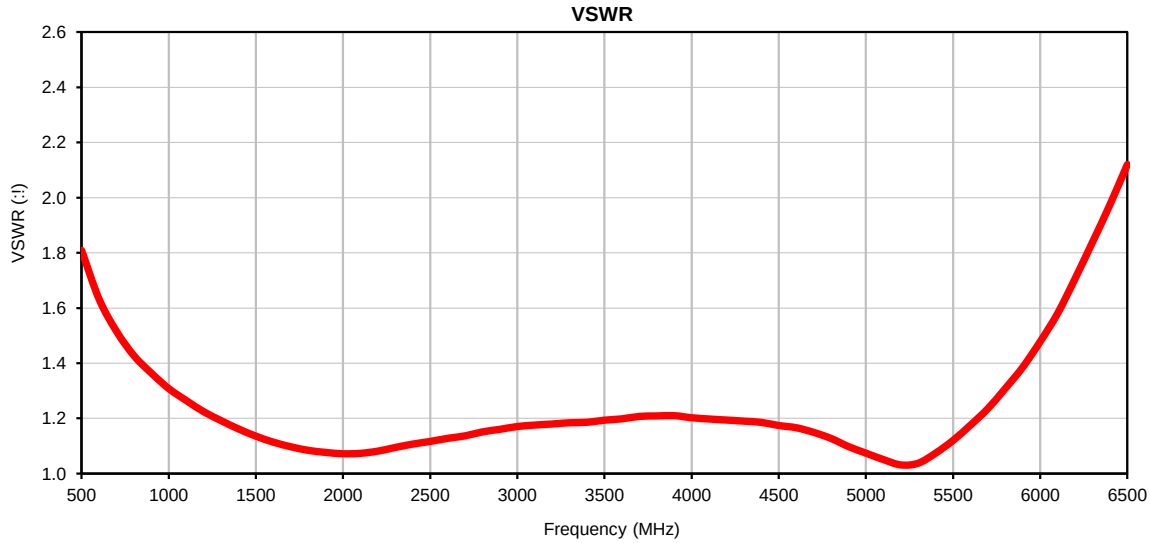
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	ISOLATION (dB)	VSWR (:1)
500	0.45	44.70	1.81
600	0.33	44.71	1.63
700	0.25	44.72	1.52
800	0.20	44.79	1.43
900	0.17	44.87	1.36
1000	0.14	45.00	1.31
1100	0.13	45.07	1.26
1200	0.12	45.23	1.22
1300	0.11	45.39	1.19
1400	0.10	45.56	1.16
1500	0.10	45.78	1.14
1600	0.10	46.07	1.11
1700	0.10	46.36	1.10
1800	0.10	46.72	1.08
1900	0.10	47.06	1.08
2000	0.10	47.49	1.07
2100	0.11	47.93	1.07
2200	0.12	48.46	1.08
2300	0.13	49.04	1.09
2400	0.13	49.70	1.11
2500	0.14	50.35	1.12
2600	0.14	50.82	1.13
2700	0.14	51.01	1.14
2800	0.14	50.72	1.15
2900	0.14	49.76	1.16
3000	0.15	48.28	1.17
3100	0.15	46.51	1.18
3200	0.16	44.66	1.18
3300	0.17	42.78	1.18
3400	0.18	40.92	1.19
3500	0.18	39.20	1.19
3600	0.19	37.48	1.20
3700	0.19	35.88	1.21
3800	0.19	34.32	1.21
3900	0.19	32.86	1.21
4000	0.19	31.42	1.20
4100	0.19	30.11	1.20
4200	0.19	28.94	1.19
4300	0.19	27.95	1.19
4400	0.19	27.19	1.19
4500	0.19	26.66	1.17
4600	0.19	26.35	1.17
4700	0.20	26.16	1.15
4800	0.20	26.12	1.13
4900	0.20	26.12	1.10
5000	0.20	26.14	1.07
5100	0.20	26.21	1.05
5200	0.21	26.33	1.03
5300	0.22	26.51	1.04
5400	0.23	26.76	1.07
5500	0.24	27.20	1.12
5600	0.27	27.71	1.18
5700	0.31	28.35	1.24
5800	0.37	28.82	1.31
5900	0.45	28.16	1.39
6000	0.54	26.27	1.48
6100	0.59	24.56	1.58
6200	0.64	23.58	1.71
6300	0.72	23.21	1.84
6400	0.92	23.10	1.97
6500	1.25	22.49	2.12

Typical Performance Curves



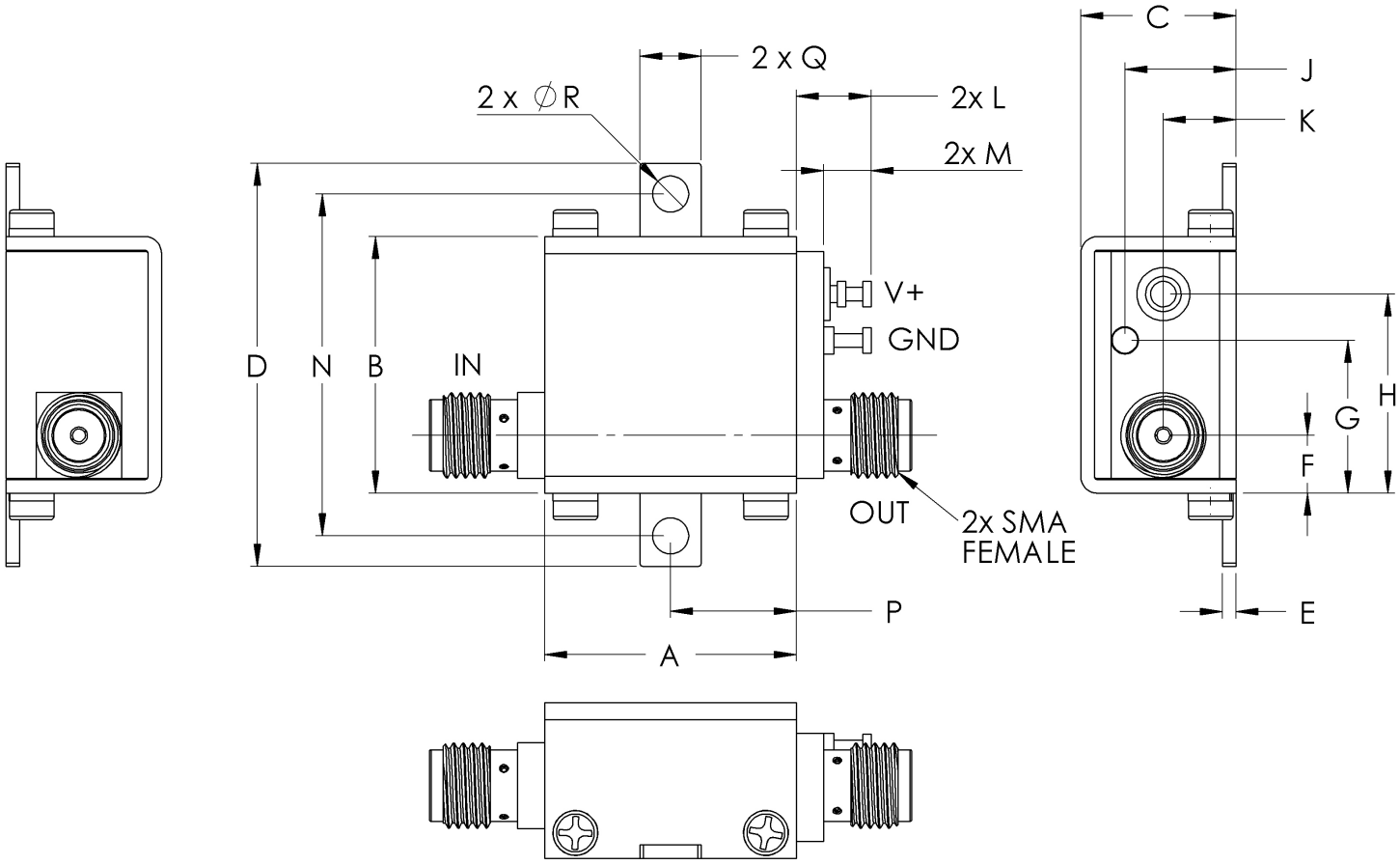




Case Style GC

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. ± .03; 3Pl. ± .015
Tolerance on hole size and interaxes dimensions to be ± .005.

Note:

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

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Mini-Circuits

Environmental Specifications **ENV28T13**

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 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