Coaxial

Bandpass Filter

BBP-150+

50Ω 140 to 160 MHz

Generic photo used for illustration purposes only

CASE STYLE: FF55

The Big Deal

- High rejection
- Good VSWR, 1.3:1 typ.@ passband
- Rugged unibody construction
- Connectorized package

Product Overview

BBP-150+ is a 50Ω bandpass filter in a connectorized package. This bandpass filter covers from 140 to 160 MHz, these units offer good matching within the passband and high rejection. This unit uses a miniature high Q capacitors and wire welded inductors for high reliability. It has repeatable performance across production lots and consistent performance across temperature.

Key Features

Feature	Advantages
High rejection	This enables the filter to attenuate spurious signals and reject harmonics for broad frequency band.
Good VSWR, 1.3:1 typ.@ passband	This provides well matched input and output ports.
Connectorized package	Connectorized package is easy to interface with other devices and well suited for test setups.

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50Ω 140 to 160 MHz

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CASE STYLE: FF55

Connectors	Model
BNC	BBP-150+

Features

- High rejection
- Good VSWR, 1.3:1 typ.@ passband
- Rugged unibody construction
- Connectorized package

Applications

- Fixed applications
- Amateur satellite
- Mobile communication

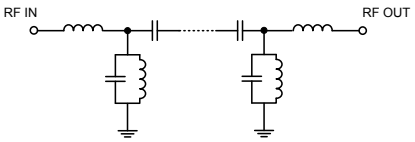
Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center frequency	-	-	-	150	-	MHz
	Insertion Loss	F1-F2	140 - 160	-	2.1	3.0	dB
	VSWR	F1-F2	140 - 160	-	1.3	1.8	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 100	40	54	-	dB
		F3-F4	100 - 120	20	29	-	dB
Stop Band, Upper	Insertion Loss	F5-F6	190 - 250	20	30	-	dB
		F6-F7	250 - 2000	40	52	-	dB

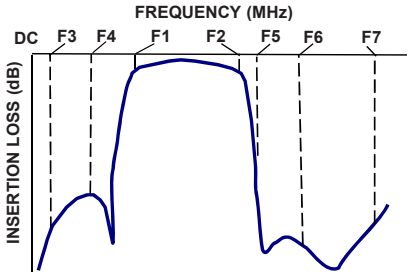
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5 W max.

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

Functional Schematic



Typical Frequency Response

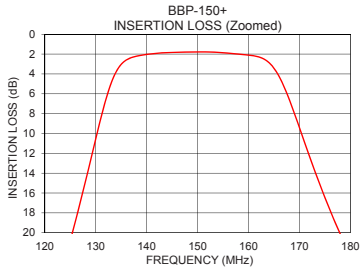


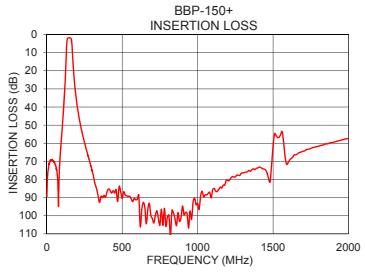
+RoHS Compliant

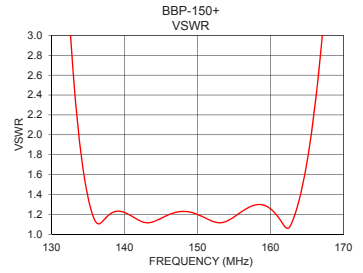
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

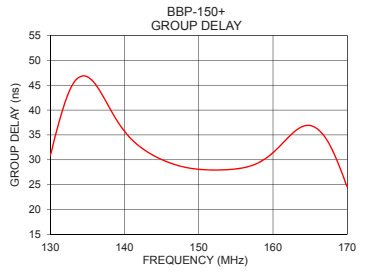
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (ns)
1	89.37	43.68	140	35.72
10	74.37	39.06	141	34.03
100	54.69	101.71	142	32.72
119	30.96	51.03	143	31.66
120	29.40	46.26	144	30.79
125	20.79	24.41	145	30.06
135	3.03	1.37	146	29.45
140	2.03	1.22	147	28.94
145	1.83	1.16	148	28.55
150	1.78	1.20	149	28.27
155	1.86	1.17	150	28.09
160	2.10	1.26	151	27.99
165	3.44	1.73	152	27.95
178	20.16	16.93	153	27.97
189	30.62	30.39	154	28.04
190	31.39	31.52	155	28.17
250	59.46	88.94	156	28.39
1000	93.10	74.06	157	28.78
1500	61.82	49.17	158	29.38
2000	57.29	46.64	160	31.43









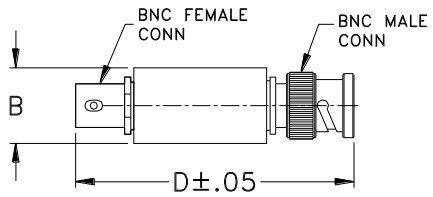
Notes

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

Coaxial Connections

PORT - 1	BNC-Male
PORT - 2	BNC-Female

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	Wt.
--	**0.57**	**--**	**2.59**	**--**	grams
--	14.47	--	65.79	--	40

Note: Please refer to case style drawing for details

Coaxial Band Pass Filter BBP-150+

Typical Performance Data

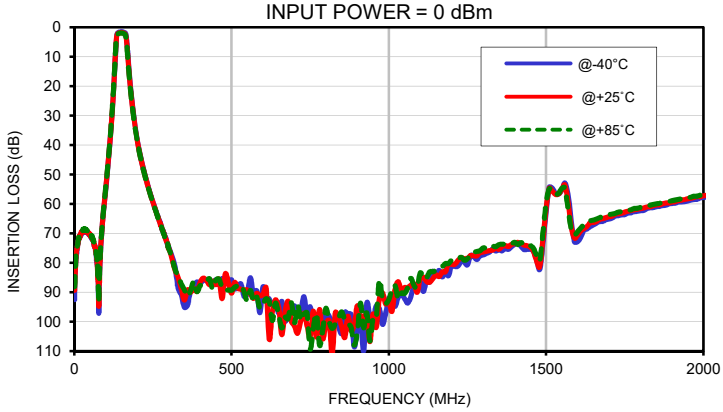
FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
1	92.57	89.37	88.19	0.31	0.40	0.47	0.28	0.38	0.45
5	79.85	79.18	78.75	0.33	0.43	0.50	0.32	0.42	0.49
10	74.77	74.37	74.12	0.36	0.44	0.52	0.34	0.44	0.50
11	73.95	74.02	73.32	0.36	0.45	0.52	0.34	0.44	0.50
12	73.67	73.16	72.54	0.36	0.45	0.52	0.34	0.44	0.50
50	70.65	70.56	69.84	0.28	0.31	0.34	0.26	0.30	0.32
85	72.74	73.04	73.22	0.16	0.19	0.21	0.15	0.18	0.19
100	54.93	54.69	54.49	0.15	0.17	0.19	0.14	0.17	0.18
110	43.52	43.20	42.89	0.17	0.20	0.23	0.16	0.20	0.22
112	41.04	40.69	40.38	0.18	0.22	0.25	0.17	0.21	0.24
114	38.44	38.08	37.75	0.20	0.24	0.28	0.19	0.23	0.26
115	37.11	36.73	36.40	0.21	0.26	0.30	0.20	0.25	0.28
119	31.37	30.96	30.58	0.28	0.34	0.40	0.27	0.33	0.37
120	29.83	29.40	29.01	0.31	0.38	0.43	0.29	0.36	0.41
125	21.25	20.79	20.34	0.58	0.71	0.82	0.55	0.67	0.77
128	15.24	14.78	14.34	1.07	1.31	1.52	1.00	1.23	1.42
130	10.90	10.53	10.15	1.91	2.31	2.67	1.78	2.17	2.51
132	6.69	6.54	6.34	4.02	4.75	5.41	3.77	4.47	5.09
135	2.79	3.03	3.14	14.81	16.20	17.47	13.37	14.52	15.57
140	1.78	2.03	2.18	18.97	20.10	21.31	18.92	19.99	21.14
142	1.67	1.92	2.06	22.85	23.72	24.45	22.07	22.69	23.28
145	1.58	1.83	1.97	22.89	22.59	22.16	21.50	21.29	21.09
150	1.55	1.78	1.92	19.18	20.85	22.40	19.36	21.20	22.99
153	1.54	1.80	1.96	24.08	25.25	25.07	28.01	32.81	30.90
155	1.59	1.86	2.04	23.74	21.92	20.43	28.83	24.64	21.92
158	1.71	2.00	2.19	18.42	17.78	17.21	19.29	18.47	17.65
160	1.79	2.10	2.30	18.57	18.90	19.07	19.08	19.26	19.17
165	2.80	3.44	3.93	12.93	11.48	10.41	12.32	10.98	9.98
178	19.55	20.16	20.67	0.94	1.03	1.07	0.88	0.98	1.02
180	21.83	22.37	22.84	0.81	0.89	0.94	0.76	0.85	0.89
189	30.24	30.62	30.95	0.51	0.57	0.61	0.47	0.54	0.58
190	31.03	31.39	31.72	0.48	0.55	0.59	0.45	0.52	0.56
200	37.93	38.20	38.44	0.35	0.41	0.45	0.33	0.38	0.42
250	59.28	59.46	59.53	0.16	0.20	0.22	0.14	0.18	0.20
300	74.52	74.79	75.04	0.11	0.14	0.16	0.09	0.13	0.15
400	87.11	86.67	87.80	0.07	0.10	0.13	0.06	0.09	0.11
500	85.78	90.37	89.35	0.06	0.11	0.13	0.05	0.09	0.10
550	90.70	89.25	92.92	0.07	0.11	0.14	0.05	0.09	0.10
600	88.24	90.88	94.21	0.08	0.12	0.15	0.05	0.10	0.11
650	97.10	95.25	97.91	0.08	0.13	0.16	0.05	0.10	0.12
700	94.67	101.50	100.42	0.09	0.14	0.18	0.06	0.11	0.13
750	94.97	105.19	109.29	0.10	0.16	0.19	0.07	0.12	0.14
800	97.44	100.60	95.50	0.12	0.17	0.21	0.07	0.12	0.15
850	103.97	101.66	96.73	0.13	0.19	0.23	0.07	0.13	0.16
900	102.35	94.63	103.54	0.15	0.21	0.25	0.08	0.14	0.17
950	99.05	97.43	98.73	0.16	0.23	0.26	0.08	0.15	0.17
1000	92.08	93.10	92.52	0.17	0.23	0.28	0.09	0.15	0.18
1050	92.16	88.44	90.45	0.18	0.25	0.29	0.09	0.16	0.19
1100	86.30	85.49	83.46	0.20	0.27	0.31	0.09	0.17	0.20
1150	84.44	84.13	82.62	0.21	0.28	0.32	0.10	0.17	0.20
1200	80.70	80.55	79.12	0.22	0.29	0.33	0.10	0.18	0.21
1250	80.74	78.56	78.65	0.23	0.31	0.35	0.10	0.18	0.21
1300	77.39	76.38	74.98	0.24	0.31	0.36	0.10	0.19	0.22
1350	75.62	75.43	73.85	0.25	0.32	0.37	0.11	0.19	0.23
1400	73.72	73.56	73.08	0.25	0.34	0.38	0.10	0.19	0.23
1500	63.09	61.82	59.88	0.27	0.35	0.41	0.12	0.21	0.25
1600	72.86	70.70	69.47	0.27	0.36	0.41	0.11	0.21	0.25
1700	65.15	64.38	63.68	0.28	0.36	0.42	0.12	0.22	0.26
1800	62.31	61.63	61.19	0.27	0.36	0.42	0.14	0.23	0.27
2000	57.80	57.29	57.03	0.27	0.37	0.44	0.15	0.25	0.29

Typical Performance Data

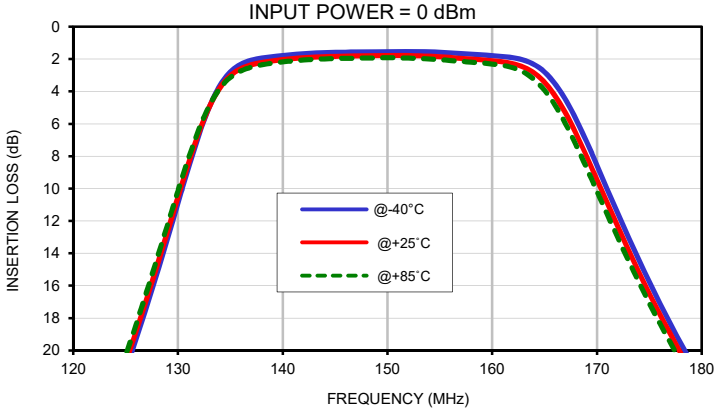
FREQ. (MHz)	GROUP DELAY (nsec)		
	@-40°C	@+25˚C	@+85˚C
140.0	36.27	35.72	35.29
140.5	35.31	34.83	34.46
141.0	34.45	34.03	33.72
141.5	33.71	33.34	33.06
142.0	33.06	32.72	32.47
142.5	32.47	32.17	31.94
143.0	31.94	31.66	31.46
143.5	31.46	31.21	31.02
144.0	31.03	30.79	30.62
144.5	30.62	30.40	30.25
145.0	30.25	30.06	29.93
145.5	29.90	29.73	29.62
146.0	29.58	29.45	29.35
146.5	29.29	29.18	29.11
147.0	29.02	28.94	28.89
147.5	28.79	28.73	28.70
148.0	28.58	28.55	28.54
148.5	28.40	28.40	28.41
149.0	28.26	28.27	28.29
149.5	28.14	28.17	28.20
150.0	28.05	28.09	28.13
150.5	27.98	28.02	28.08
151.0	27.94	27.99	28.04
151.5	27.91	27.96	28.02
152.0	27.90	27.95	28.01
152.5	27.90	27.95	28.00
153.0	27.92	27.97	28.02
153.5	27.95	27.99	28.05
154.0	27.99	28.04	28.09
154.5	28.04	28.09	28.15
155.0	28.12	28.17	28.24
155.5	28.19	28.26	28.35
156.0	28.31	28.39	28.51
156.5	28.45	28.56	28.70
157.0	28.63	28.78	28.95
157.5	28.85	29.04	29.26
158.0	29.14	29.38	29.64
158.5	29.47	29.77	30.09
159.0	29.90	30.26	30.63
159.5	30.39	30.81	31.22
160.0	30.97	31.43	31.89

Typical Performance Curves

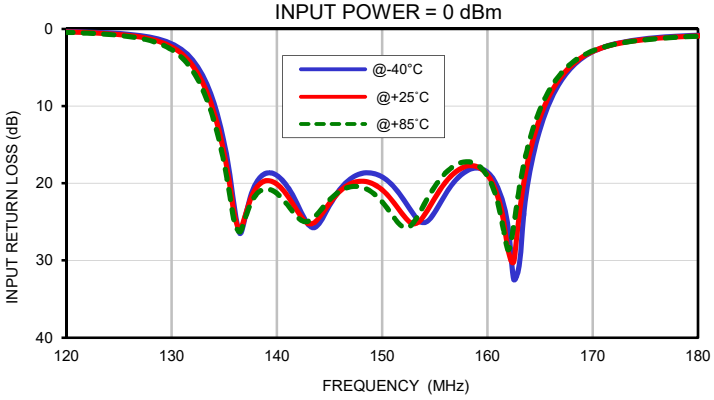
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



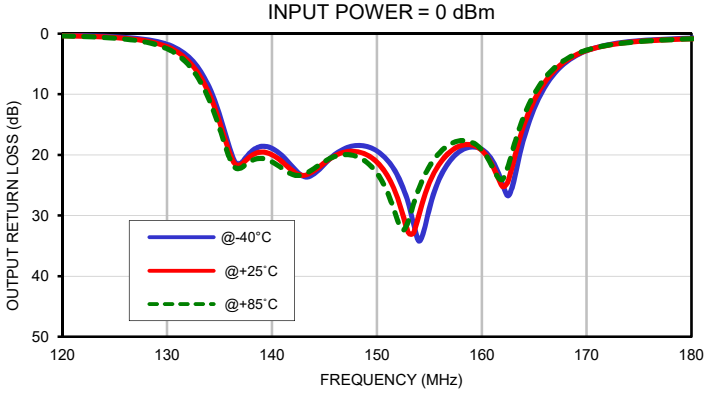
INSERTION LOSS vs. TEMPERATURE (Zoomed)
INPUT POWER = 0 dBm



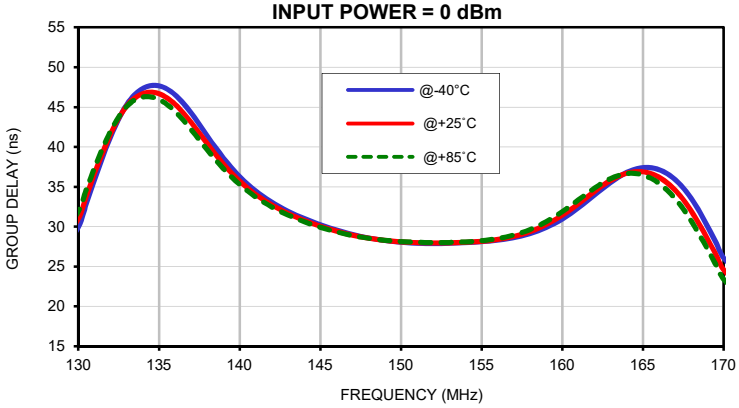
INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



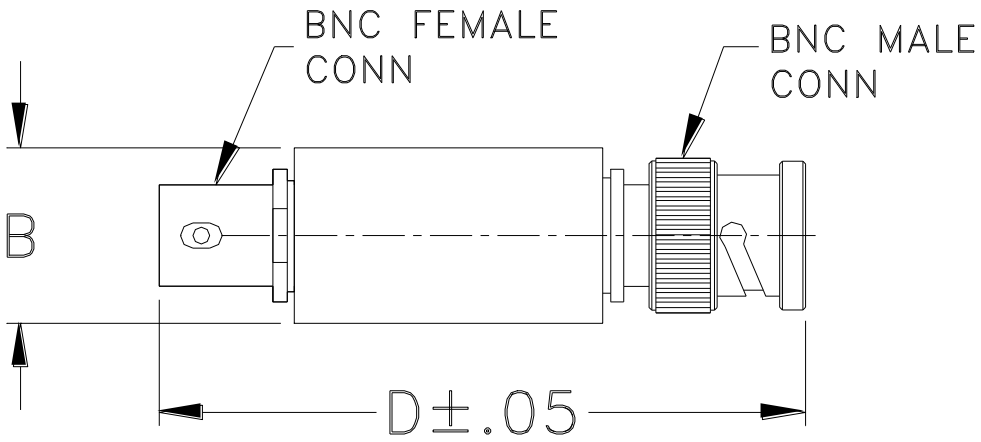
GROUP DELAY vs. TEMPERATURE
INPUT POWER = 0 dBm



Case Style FF

FF55

Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF55	-- --	.57 (14.47)	-- --	2.59 (65.79)	-- --	40.0

Dimensions are in inches (mm). Tolerances: 2Pl. +.03/-.04; 3Pl. ± .015

Note:

1. Case material: Stainless steel.

Mini-Circuits

Environmental Specifications **ENV105**

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	-40° 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, Condition A-3, except +100°C