

# Coaxial Low Pass Filter

BLP-23+

50Ω DC to 23 MHz



## The Big Deal

- Low insertion loss, 0.6 dB typ.
- High rejection, 48 dB typ.
- Sharp cut-off
- Good VSWR, 1.2:1 typ. in passband
- Connectorized package

*Generic photo used for illustration purposes only*  
CASE STYLE: FF55

## Product Overview

BLP-23+ is a 50Ω Low pass filter in a connectorized package covering DC to 23 MHz. This filter uses miniature high Q capacitors and wire welded inductors for high reliability. This filter offers high rejection and low insertion loss. It has consistent performance across temperature and repeatable performance across production lots.

## Key Features

Feature	Advantages
Low insertion loss, 0.6 dB typ.	It enables the filter to be used in high performance applications.
High rejection, 48 dB typ.	Attenuates unwanted spurious signals and harmonics.
Sharp cut-off	This enables the filter rejects the near band interaction and provides the high selectivity.
Good VSWR, 1.2:1 typical in passband	This provides good matching when used with other devices.
Connectorized package	Easy to interface with other devices and well suited for test setups.

### 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.  
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50Ω DC to 23 MHz

BLP-23+



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CASE STYLE: FF55

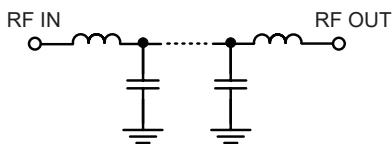
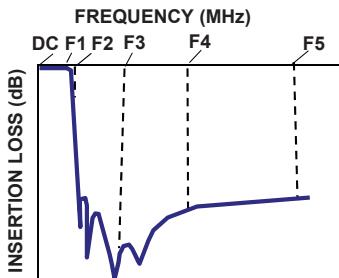
Connectors	Model
BNC	BLP-23+

**Features**

- Low insertion loss, 0.6 dB typ.
- High rejection, 48 dB typ.
- Good VSWR, 1.2:1 typical in passband
- Sharp cut-off
- Rugged shielded case
- Connectorized package

**Applications**

- Defense communications
- Transmitters / Receivers
- Harmonic rejection

**Functional Schematic****Typical Frequency Response****+RoHS Compliant**

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

	Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 23	—	0.6	1	dB
	Freq. Cut-Off	F2	25	—	3.0	—	dB
	VSWR	DC-F1	DC - 23	—	1.2	1.5	:1
Stop Band	Rejection Loss	F3-F4	31 - 34	20	30	—	dB
		F4-F5	34 - 500	40	48	—	dB

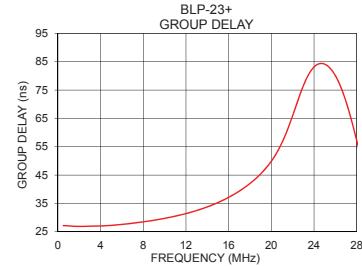
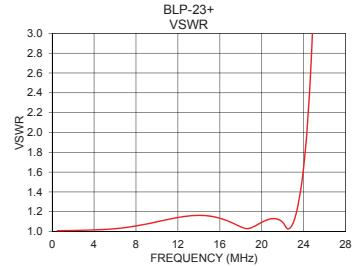
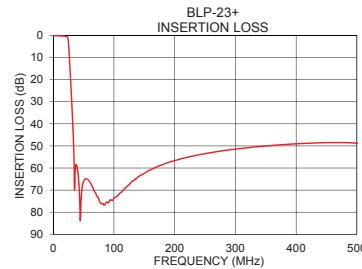
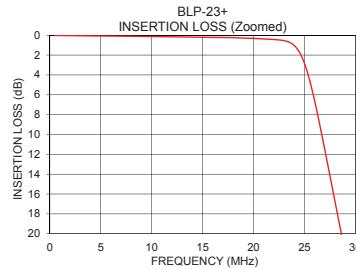
**Electrical Specifications at 25°C**

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.

**Typical Performance Data at 25°C**

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (ns)
0.5	0.02	1.01	0.5	27.18
10.0	0.13	1.10	1.0	27.09
20.0	0.32	1.09	2.0	26.89
22.0	0.43	1.09	3.0	26.98
23.0	0.55	1.09	4.0	27.06
24.0	1.04	1.66	5.0	27.27
25.0	2.86	3.48	6.0	27.62
25.5	4.53	5.50	7.0	28.01
29.0	22.02	54.57	8.0	28.50
31.0	32.62	88.41	9.0	29.06
34.0	53.28	130.76	10.0	29.73
50.0	66.06	246.59	11.0	30.51
80.0	76.10	206.58	12.0	31.43
90.0	75.81	188.07	13.0	32.50
100.0	73.59	166.44	14.0	33.77
200.0	56.59	82.96	15.0	35.30
300.0	51.47	65.44	18.0	42.06
400.0	49.05	59.93	20.0	49.92
450.0	48.54	59.12	23.0	76.56
500.0	48.76	58.35	25.0	84.17

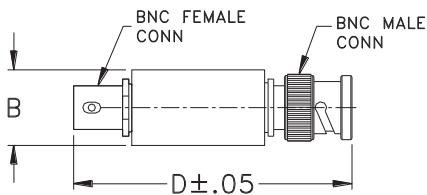
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**Coaxial Connections**

PORt - 1	BNC-Male
PORt - 2	BNC-Female

**Outline Drawing****Outline Dimensions ( <sup>inch</sup> mm )**

A	B	C	D	E	Wt.
--	<b>0.57</b>	--	<b>2.59</b>	--	grams
--	14.47	--	65.79	--	40

Note: Please refer to case style drawing for details

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# Coaxial Low Pass Filter

**BLP-23+**

## Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURN LOSS (dB)		
	@-40°C @+25°C @+85°C			@-40°C @+25°C @+85°C			@-40°C @+25°C @+85°C		
	0.5	0.02	0.02	0.03	49.46	47.30	45.94	49.88	47.65
1.0	0.02	0.03	0.04	48.54	46.80	45.56	49.34	47.42	46.09
2.0	0.03	0.04	0.05	46.26	45.25	44.36	48.01	46.89	45.89
2.5	0.04	0.05	0.05	44.99	44.20	43.41	47.57	46.60	45.63
3.0	0.05	0.05	0.06	44.25	43.48	42.75	47.54	46.56	45.58
10.0	0.11	0.13	0.14	26.74	26.57	26.37	27.28	27.14	26.95
15.0	0.18	0.20	0.22	22.55	22.77	22.86	22.63	22.84	22.93
20.0	0.29	0.32	0.35	27.37	26.98	26.81	26.55	26.15	25.93
22.0	0.39	0.43	0.47	26.73	27.04	27.61	26.35	26.55	26.95
23.0	0.49	0.55	0.60	28.62	27.49	26.19	27.50	26.47	25.30
24.0	0.95	1.04	1.15	12.46	12.14	11.76	12.33	12.01	11.63
25.0	2.68	2.86	3.06	5.25	5.14	5.00	5.19	5.08	4.93
25.5	4.33	4.53	4.78	3.24	3.19	3.13	3.19	3.15	3.08
26.0	6.43	6.65	6.92	2.00	1.99	1.97	1.96	1.95	1.93
29.0	21.83	22.02	22.29	0.30	0.32	0.34	0.28	0.30	0.33
30.0	27.06	27.25	27.52	0.22	0.24	0.27	0.21	0.23	0.25
31.0	32.43	32.62	32.90	0.18	0.20	0.22	0.17	0.19	0.21
32.0	38.14	38.36	38.66	0.15	0.17	0.19	0.15	0.16	0.18
33.0	44.62	44.87	45.27	0.13	0.15	0.16	0.12	0.14	0.16
34.0	52.96	53.28	53.85	0.12	0.13	0.15	0.11	0.12	0.14
35.0	69.41	69.79	70.85	0.11	0.12	0.13	0.10	0.11	0.13
40.0	60.48	60.56	60.78	0.08	0.09	0.09	0.07	0.08	0.09
42.0	65.74	66.10	66.18	0.07	0.08	0.09	0.06	0.07	0.08
45.0	84.25	82.62	81.57	0.07	0.07	0.08	0.05	0.06	0.07
48.0	68.90	68.25	68.11	0.06	0.07	0.07	0.05	0.06	0.07
50.0	66.37	66.06	65.98	0.07	0.07	0.07	0.04	0.05	0.06
56.0	65.50	65.02	64.85	0.06	0.07	0.07	0.04	0.05	0.06
60.0	66.56	66.24	66.22	0.07	0.07	0.07	0.04	0.05	0.06
62.0	67.54	67.10	66.87	0.07	0.07	0.07	0.04	0.05	0.06
64.0	68.35	68.19	67.93	0.07	0.07	0.07	0.04	0.05	0.06
70.0	73.30	71.31	71.88	0.08	0.07	0.07	0.04	0.05	0.06
76.0	77.14	74.74	74.43	0.08	0.08	0.08	0.04	0.05	0.06
78.0	78.63	76.08	74.97	0.09	0.08	0.08	0.04	0.05	0.06
80.0	79.57	76.10	75.45	0.09	0.08	0.08	0.04	0.05	0.06
100.0	76.70	73.59	72.74	0.11	0.10	0.09	0.04	0.06	0.06
110.0	73.23	71.31	70.28	0.12	0.12	0.10	0.05	0.06	0.07
150.0	63.01	62.41	62.15	0.17	0.16	0.14	0.07	0.09	0.09
180.0	58.78	58.51	58.31	0.19	0.19	0.17	0.09	0.10	0.11
200.0	56.81	56.59	56.49	0.21	0.21	0.19	0.10	0.11	0.12
220.0	55.29	55.21	55.01	0.22	0.22	0.21	0.11	0.12	0.13
240.0	54.19	54.00	53.86	0.23	0.24	0.22	0.12	0.14	0.14
260.0	53.16	53.02	52.92	0.24	0.25	0.23	0.13	0.14	0.15
280.0	52.30	52.16	52.09	0.24	0.26	0.25	0.14	0.15	0.16
300.0	51.62	51.47	51.38	0.24	0.27	0.26	0.14	0.16	0.17
310.0	51.29	51.12	51.02	0.25	0.27	0.27	0.15	0.17	0.18
320.0	50.99	50.85	50.68	0.25	0.27	0.27	0.15	0.17	0.18
330.0	50.76	50.49	50.44	0.25	0.28	0.27	0.15	0.17	0.19
340.0	50.44	50.27	50.14	0.25	0.28	0.28	0.15	0.18	0.19
350.0	50.16	50.02	49.92	0.25	0.28	0.28	0.16	0.18	0.19
360.0	49.97	49.83	49.70	0.25	0.28	0.29	0.16	0.18	0.20
370.0	49.76	49.60	49.49	0.25	0.28	0.29	0.16	0.19	0.20
380.0	49.55	49.37	49.29	0.25	0.29	0.29	0.16	0.19	0.20
390.0	49.39	49.21	49.11	0.25	0.29	0.29	0.17	0.19	0.21
400.0	49.18	49.05	48.95	0.25	0.29	0.30	0.17	0.20	0.21
410.0	49.03	48.93	48.83	0.26	0.29	0.30	0.17	0.20	0.21
420.0	48.91	48.79	48.69	0.26	0.29	0.30	0.17	0.20	0.22
430.0	48.78	48.66	48.61	0.26	0.29	0.30	0.17	0.20	0.22
440.0	48.67	48.59	48.53	0.26	0.29	0.31	0.18	0.21	0.22
450.0	48.60	48.54	48.44	0.26	0.29	0.31	0.18	0.21	0.23
500.0	48.74	48.76	48.72	0.26	0.30	0.31	0.19	0.22	0.24



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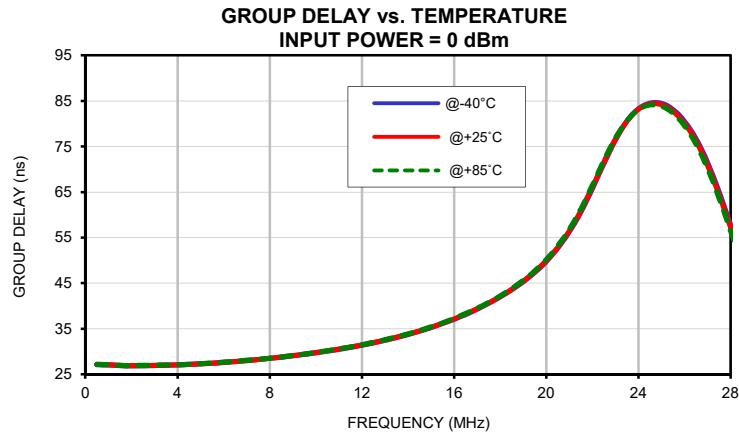
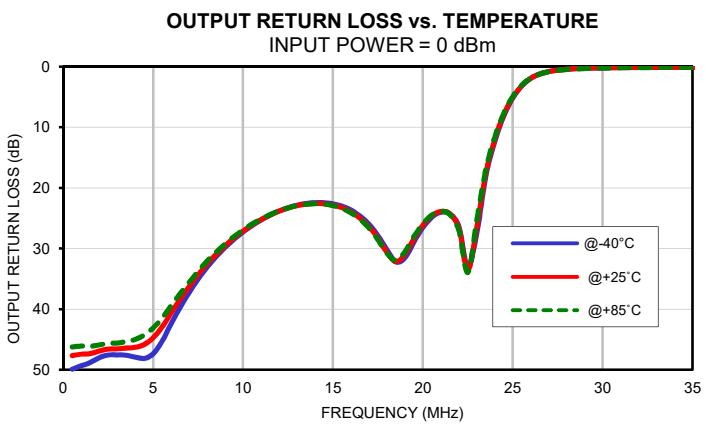
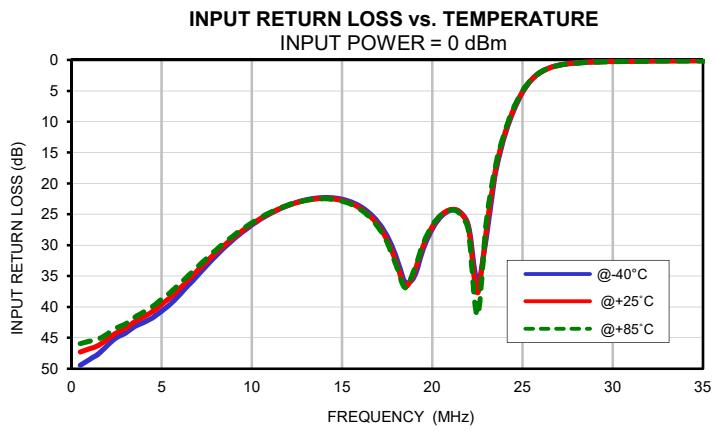
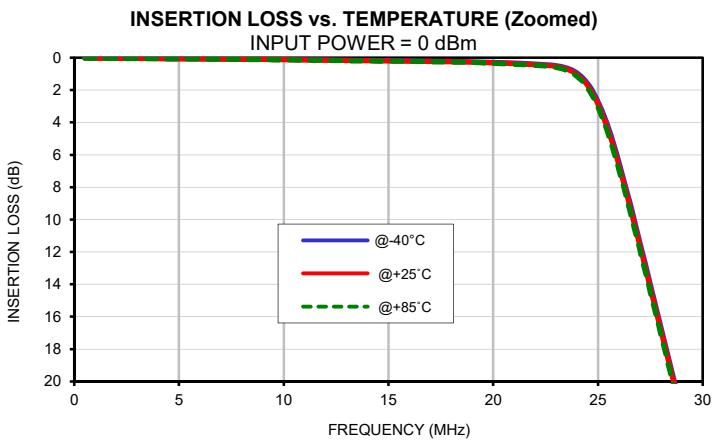
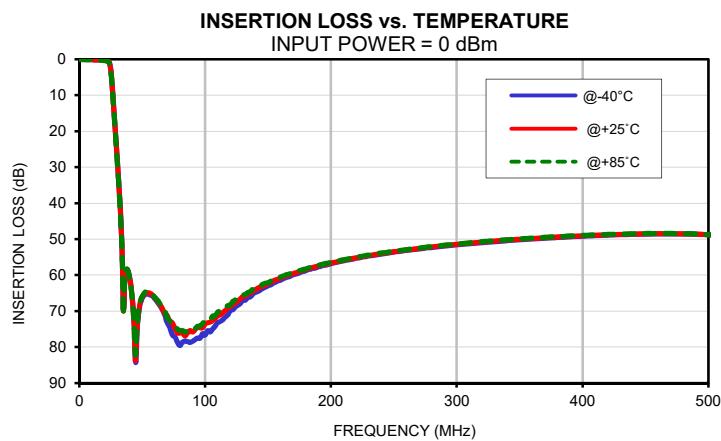
IF/RF MICROWAVE COMPONENTS

REV. OR  
BLP-23+  
200619  
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*Typical Performance Data*

FREQ. (MHz)	GROUP DELAY		
	(nsec)		
	@-40°C	@+25°C	@+85°C
0.5	27.09	27.18	27.15
2.0	26.85	26.89	26.91
3.0	26.93	26.98	27.01
3.5	26.97	27.01	27.04
4.0	27.02	27.06	27.10
4.5	27.12	27.15	27.19
5.0	27.24	27.27	27.32
5.5	27.40	27.43	27.47
6.0	27.58	27.62	27.66
6.5	27.77	27.80	27.84
7.0	27.99	28.01	28.06
7.5	28.21	28.24	28.28
8.0	28.47	28.50	28.53
8.5	28.74	28.78	28.81
9.0	29.04	29.06	29.11
9.5	29.37	29.39	29.43
10.0	29.70	29.73	29.78
10.5	30.08	30.11	30.16
11.0	30.48	30.51	30.56
11.5	30.91	30.95	30.99
12.0	31.38	31.43	31.48
12.5	31.90	31.94	31.99
13.0	32.45	32.50	32.56
13.5	33.06	33.11	33.18
14.0	33.72	33.77	33.85
14.5	34.45	34.50	34.58
15.0	35.23	35.30	35.39
15.5	36.12	36.18	36.27
16.0	37.07	37.14	37.24
16.5	38.12	38.20	38.31
17.0	39.27	39.37	39.48
17.5	40.55	40.64	40.76
18.0	41.96	42.06	42.20
18.5	43.53	43.63	43.79
19.0	45.30	45.43	45.60
19.5	47.33	47.48	47.68
20.0	49.74	49.92	50.16
21.0	56.21	56.47	56.83
22.0	65.71	66.01	66.43
23.0	76.41	76.56	76.81
25.0	84.47	84.17	83.85

## Typical Performance Curves

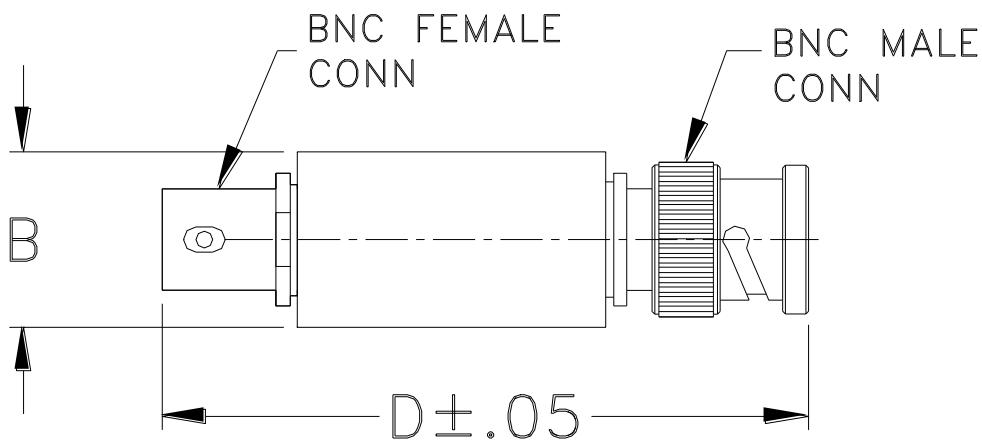


# Case Style

**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.

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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.

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