

Low Pass Filter

NBLP-39+

50Ω Flat Time Delay DC to 23 MHz

Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 100°C

RF Power Input 0.5W max.

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

Features

- flat group delay for low pulse distortion
- rugged shielded case
- other NBLP models available with wide selection of cut-off frequencies

Applications

- linear modulation techniques
- voice transmission applications
- digital communications



CASE STYLE: FF57

Connectors Model

N-Type NBLP-39+

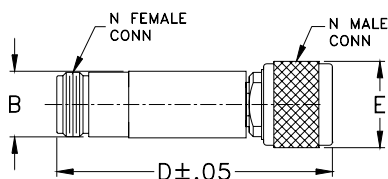
+RoHS Compliant

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

Low Pass Filter Electrical Specifications

PASSBAND (MHz)	f _{co} , MHz Nom.	STOPBAND (MHz)		VSWR (:1)		GROUP DELAY VARIATION (nsec)		
		(loss > 10 dB)	(loss > 20 dB)	DC-0.2f _{co}	DC-0.6f _{co}	DC-f _{co}	DC-2f _{co}	DC-2.67f _{co}
(loss < 1.2 dB) Min.	(loss 3 dB)			$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$	$\bar{X}$
DC-23	39	78-117	117	1.3:1	2.3:1	0.7	4.0	5.0

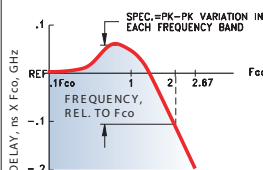
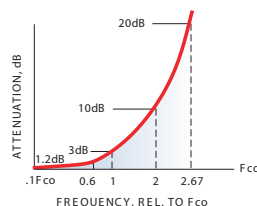
Outline Drawing



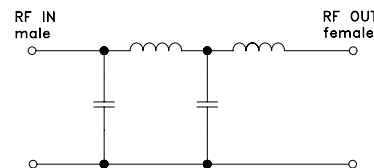
Outline Dimensions (inch/mm)

B	D	E	wt
.67	2.90	.82	grams
17.02	73.66	20.83	90.0

TYPICAL GROUP DELAY

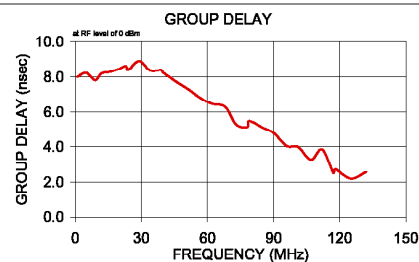
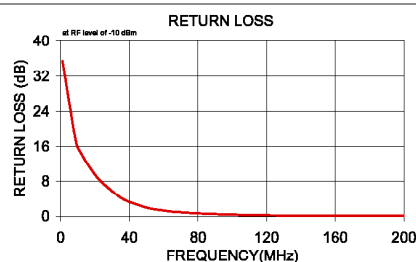
TYPICAL FREQUENCY RESPONSE
INSERTION LOSS

electrical schematic



Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Frequency (MHz)	Group Delay (nsec)
1.0	0.02	0.00	1.0	8.012
9.0	0.14	0.00	5.0	8.243
12.0	0.23	0.01	9.0	7.823
16.0	0.38	0.01	12.0	8.199
20.0	0.60	0.02	16.0	8.305
23.0	0.82	0.02	20.0	8.466
24.0	0.91	0.02	23.0	8.623
34.0	2.11	0.03	24.0	8.392
39.0	2.95	0.04	29.0	8.899
40.0	3.14	0.04	34.0	8.378
51.0	5.48	0.06	39.0	8.392
62.0	8.15	0.07	40.0	8.247
69.0	9.69	0.08	46.0	7.722
73.0	11.00	0.09	51.0	7.336
78.0	12.33	0.10	57.0	6.804
79.0	12.60	0.10	62.0	6.487
90.0	15.56	0.13	68.0	6.306
101.0	18.53	0.15	73.0	5.277
107.0	20.14	0.16	78.0	5.124
112.0	21.46	0.16	79.0	5.489
117.0	22.76	0.17	85.0	5.101
118.0	23.02	0.17	90.0	4.784
132.0	26.55	0.17	96.0	4.054
146.0	29.88	0.17	101.0	3.996
159.0	32.80	0.17	107.0	3.275
173.0	35.76	0.16	112.0	3.856
180.0	37.17	0.15	117.0	2.547
187.0	38.55	0.16	118.0	2.738
194.0	39.89	0.15	125.0	2.216
200.0	41.00	0.16	132.0	2.576



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 Low Pass Filter (Flat Time Delay)

NBLP-39+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)	FREQUENCY (MHz)	GROUP DELAY (nsec)
1.0	0.02	35.50	1.0	8.012
9.0	0.14	17.00	5.0	8.243
12.0	0.23	14.30	9.0	7.823
16.0	0.38	11.60	12.0	8.199
20.0	0.60	9.40	16.0	8.305
23.0	0.82	8.10	20.0	8.466
24.0	0.91	7.70	23.0	8.623
34.0	2.11	4.50	24.0	8.392
39.0	2.95	3.40	29.0	8.899
40.0	3.14	3.20	34.0	8.378
51.0	5.48	1.90	39.0	8.392
62.0	8.15	1.20	40.0	8.247
69.0	9.69	1.00	46.0	7.722
73.0	11.00	0.80	51.0	7.336
78.0	12.33	0.70	57.0	6.804
79.0	12.60	0.70	62.0	6.487
90.0	15.56	0.50	68.0	6.306
101.0	18.53	0.40	73.0	5.277
107.0	20.14	0.30	78.0	5.124
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187.0	38.55	0.10	118.0	2.738
194.0	39.89	0.10	125.0	2.216
200.0	41.00	0.10	132.0	2.576

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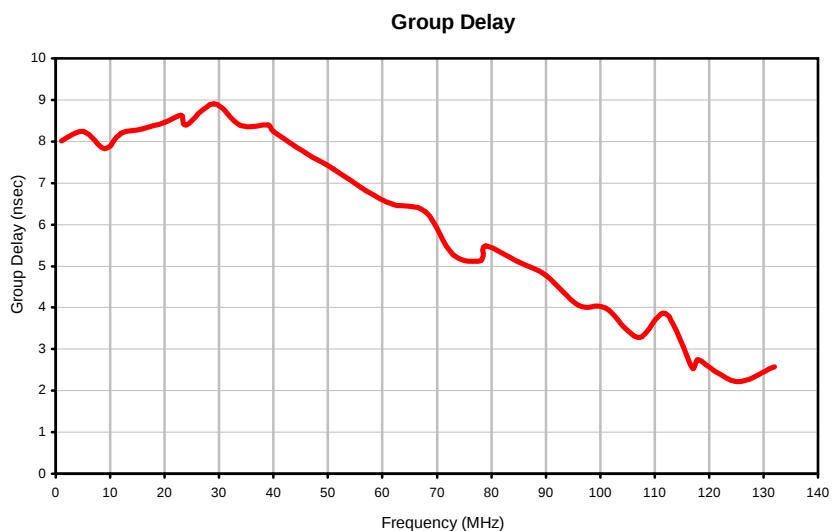
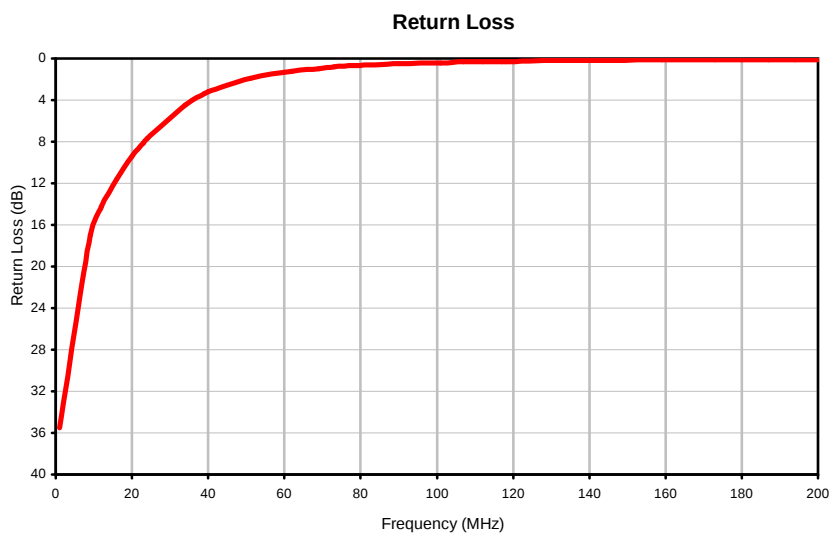
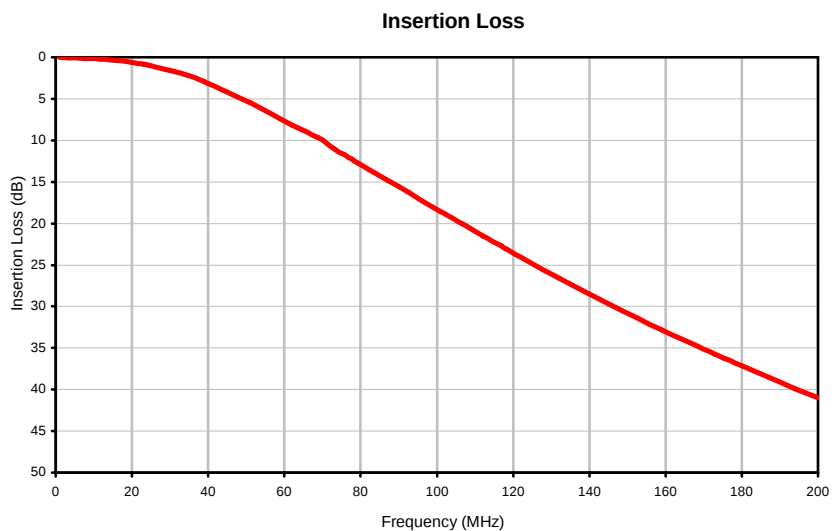
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Coaxial Low Pass Filter (Flat Time Delay)

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Typical Performance Curves



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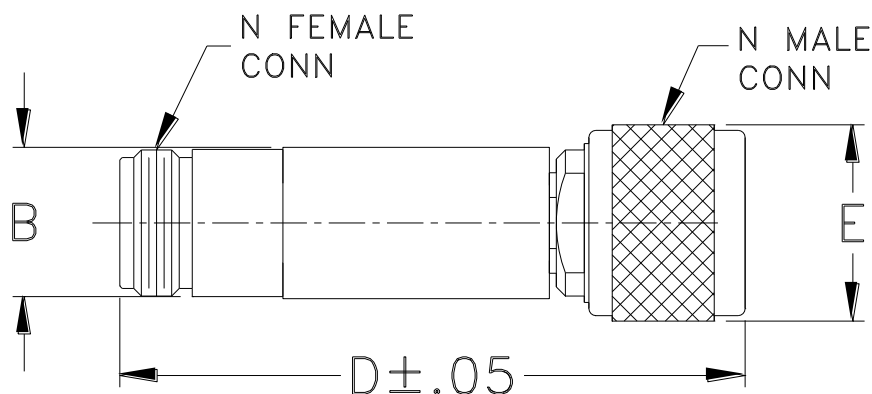


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Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF57	--	.70 (17.78)	--	2.90 (73.66)	.82 (20.83)	90.0

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

Note:

1. Case material: Stainless steel.



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 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