NON-CATALOG

Coaxial

Low Pass Filter

NBLP-117+
NBLP-117

50Ω Flat Time Delay DC to 65 MHz

CASE STYLE: FF57

Connectors	Model	Price	Qty.
N-Type	NBLP-117(+)	Contact Sales Dept.	

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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 Input	0.5W max.

Features

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

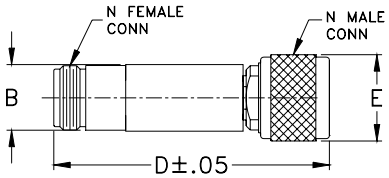
Applications

- linear modulation techniques
- voice transmission applications
- digital communications

Low Pass Filter Electrical Specifications

PASSBAND (MHz) (loss <1.2 dB) Min.	fco, MHz Nom. (loss 3 dB)	STOPBAND (MHz) (loss > 10 dB)	STOPBAND (MHz) (loss > 20 dB)	VSWR (:1) DC-0.2fco $\overline{X}$	VSWR (:1) DC-0.6fco $\overline{X}$	GROUP DELAY VARIATION (nsec) DC-fco $\overline{X}$	GROUP DELAY VARIATION (nsec) DC-2fco $\overline{X}$	GROUP DELAY VARIATION (nsec) DC-2.67fco $\overline{X}$
DC-65	117	234-312	312	1.3:1	2.4:1	0.35	1.4	1.9

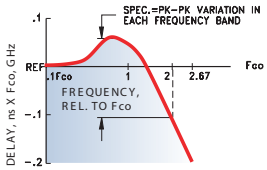
Outline Drawing



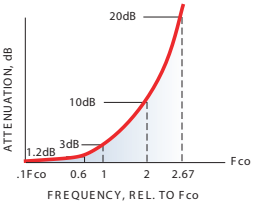
Outline Dimensions (inch / mm)

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

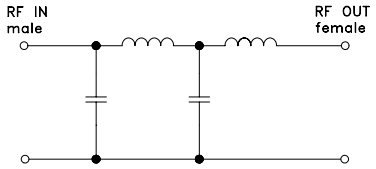
TYPICAL GROUP DELAY



TYPICAL FREQUENCY RESPONSE INSERTION LOSS



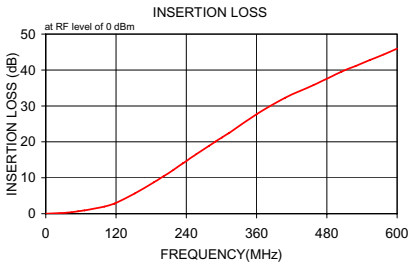
Electrical Schematic



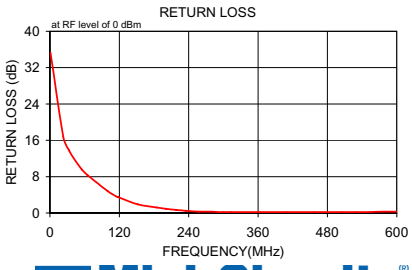
Typical Performance Data

Frequency (MHz)	Insertion Loss (dB) $\overline{X}$	Insertion Loss (dB) σ	Return Loss (dB)	Frequency (MHz)	Group Delay (nsec)
1.0	0.02	0.1	35.3	1.0	3.075
23.0	0.15	0.1	16.8	12.0	3.015
33.0	0.26	0.1	13.8	23.0	3.252
44.0	0.42	0.1	11.5	33.0	3.331
55.0	0.65	0.1	9.6	44.0	3.126
65.0	0.90	0.1	8.3	55.0	3.140
66.0	0.92	0.1	8.2	65.0	3.044
100.0	1.96	0.1	4.8	66.0	3.271
117.0	2.80	0.1	3.5	83.0	3.303
118.0	2.86	0.1	3.5	100.0	3.348
152.0	5.63	0.1	1.9	117.0	3.233
185.0	8.79	0.2	1.2	118.0	3.593
201.0	10.40	0.2	0.9	135.0	3.409
218.0	12.20	0.2	0.7	152.0	2.782
234.0	13.99	0.2	0.5	168.0	2.798
235.0	14.10	0.2	0.5	185.0	2.689
257.0	16.54	0.3	0.3	201.0	2.681
279.0	18.92	0.4	0.3	218.0	2.252
290.0	20.08	0.5	0.2	234.0	2.060
301.0	21.23	0.5	0.2	235.0	2.038
312.0	22.36	0.6	0.2	246.0	1.965
313.0	22.46	0.6	0.2	257.0	1.759
361.0	27.82	0.7	0.2	268.0	1.562
409.0	32.27	0.9	0.2	279.0	1.358
457.0	35.79	1.0	0.2	290.0	1.372
505.0	39.52	1.3	0.2	301.0	1.483
529.0	41.10	1.4	0.2	312.0	1.659
553.0	42.74	1.6	0.2	313.0	1.765
577.0	44.30	1.5	0.3	337.0	1.324
600.0	45.95	2.0	0.3	361.0	1.555

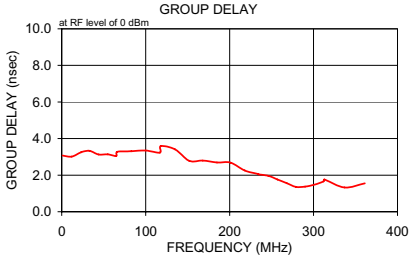
INSERTION LOSS



RETURN LOSS



GROUP DELAY



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REV. A
M122594
NBLP-117
100201

Coaxial Low Pass Filter (Flat Time Delay) NBLP-117+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
1.0	0.02	35.30
23.0	0.15	16.80
33.0	0.26	13.80
44.0	0.42	11.50
55.0	0.65	9.60
65.0	0.90	8.30
66.0	0.92	8.20
100.0	1.96	4.80
117.0	2.80	3.50
118.0	2.86	3.50
152.0	5.63	1.90
185.0	8.79	1.20
201.0	10.40	0.90
218.0	12.20	0.70
234.0	13.99	0.50
235.0	14.10	0.50
257.0	16.54	0.30
279.0	18.92	0.30
290.0	20.08	0.20
301.0	21.23	0.20
312.0	22.36	0.20
313.0	22.46	0.20
361.0	27.82	0.20
409.0	32.27	0.20
457.0	35.79	0.20
505.0	39.52	0.20
529.0	41.10	0.20
553.0	42.74	0.20
577.0	44.30	0.30
600.0	45.95	0.30

FREQUENCY (MHz)	GROUP DELAY (nsec)
1.0	3.075
12.0	3.015
23.0	3.252
33.0	3.331
44.0	3.126
55.0	3.140
65.0	3.044
66.0	3.271
83.0	3.303
100.0	3.348
117.0	3.233
118.0	3.593
135.0	3.409
152.0	2.782
168.0	2.798
185.0	2.689
201.0	2.681
218.0	2.252
234.0	2.060
235.0	2.038
246.0	1.965
257.0	1.759
268.0	1.562
279.0	1.358
290.0	1.372
301.0	1.483
312.0	1.659
313.0	1.765
337.0	1.324
361.0	1.555

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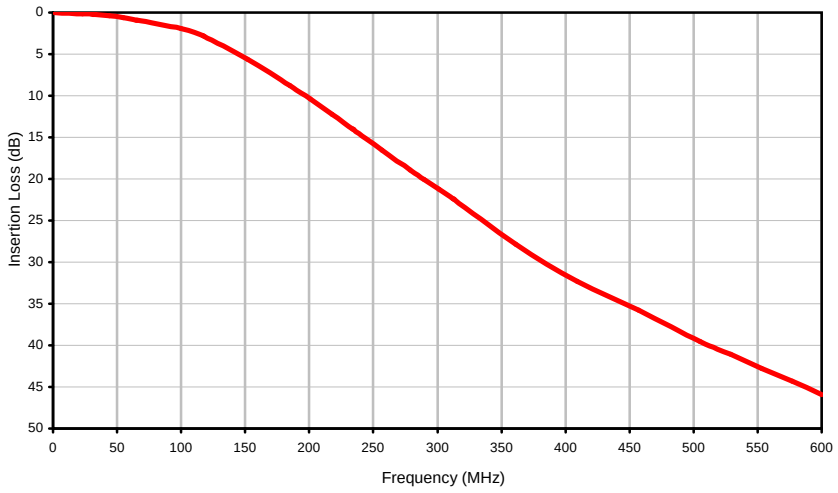
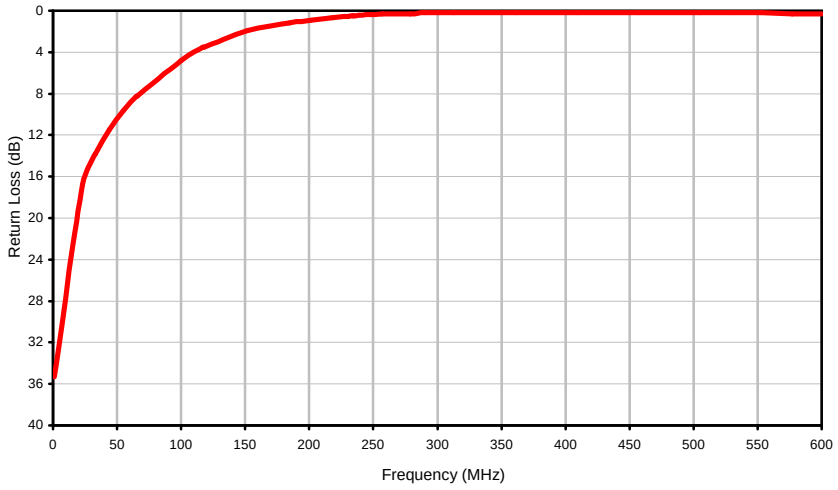
Coaxial Low Pass Filter (Flat Time Delay) NBLP-117+

Typical Performance Curves

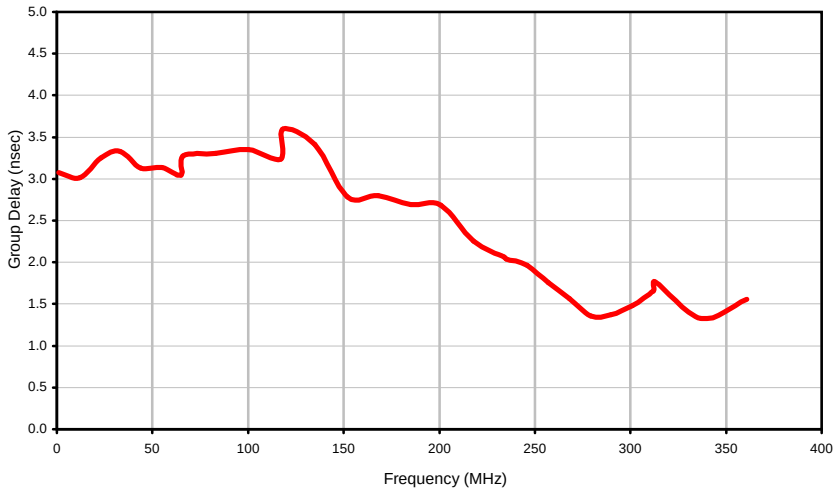
Insertion Loss



Return Loss



Group Delay



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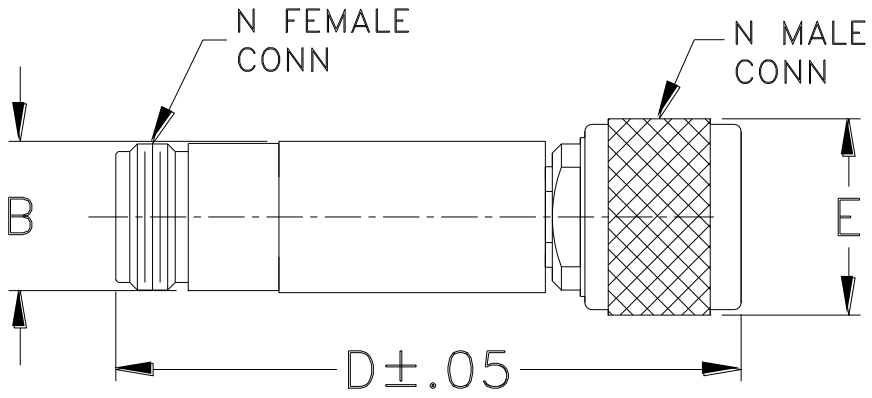
Case Style FF

FF57

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.

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Environmental Specifications ENV03

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 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
HAST	130°C, 85% RH, 96 hours	JESD22-A110
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutectic Process: 225°C peak Pb-Free Process, 245°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, Para 4.2.5, Test S, 95% Coverage
Vibration (High Frequency)	20g peak, 20-2000 Hz, 4 times in each of three axes (total 12)	MIL-STD-883, Method 2007.3, Condition A
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215

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