

Coaxial

Bandpass Filter

NON-CATALOG

NBP-21.4+
NBP-21.4
50Ω Elliptic Response 19.2 to 23.6 MHz

Maximum Ratings

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

Features

- low insertion loss, 1.5 dB max.
- good selectivity, 1.76 typ. 20 dB/3dB ratio
- rugged shielded case

Applications

- high rejection applications
- image rejection
- IF signal processing



CASE STYLE: FF57

Connectors	Model	Price	Qty.
N-Type	NBP-21.4(+)	Contact Sales Dept.	

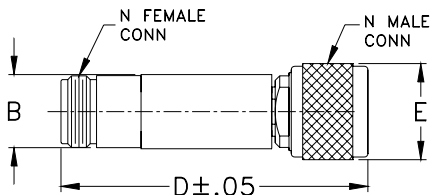
+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

Bandpass Filter Electrical Specifications

MODEL NO.	CENTER FREQ. (MHz)	PASSBAND (MHz)	3dB BANDWIDTH (MHz)	STOPBANDS		VSWR (:1)	
		I.L. 1.5 dB Max.	Typ.	(I. loss > 20 dB) at MHz	(I. loss > 35 dB) at MHz	Passband Max.	Stopband Typ.
NBP-21.4	21.4	19.2-23.6	17.9-25.3	15.5 & 29	3.0 & 80-1000	1.7	16

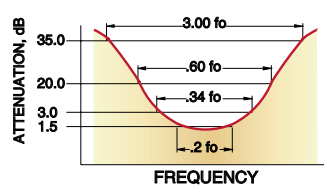
Outline Drawing



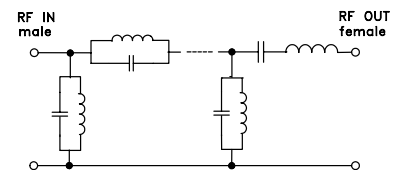
Outline Dimensions (inch/mm)

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

typical frequency response

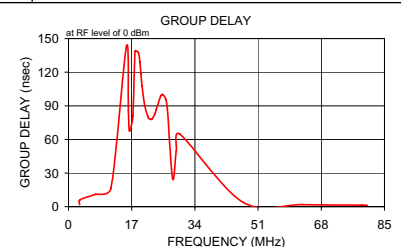
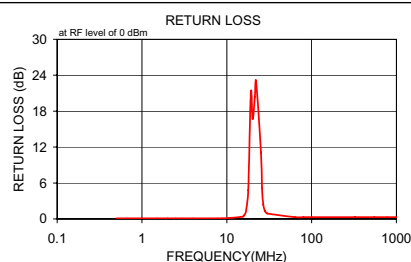
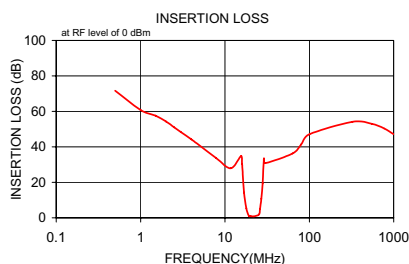


Electrical Schematic



Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)		Return Loss (dB)	Frequency (MHz)	Group Delay (nsec)
	$\bar{x}$	σ			
0.5	71.63	9.9	0.1	3.0	1.719
1.0	60.77	9.9	0.1	3.1	6.056
1.5	57.59	9.9	0.1	7.3	11.010
2.0	54.26	9.9	0.1	11.4	16.139
2.5	51.03	9.9	0.1	15.6	142.895
3.0	48.32	9.1	0.1	16.1	85.576
4.0	44.25	7.7	0.1	16.4	67.524
7.8	33.81	4.4	0.1	17.3	80.808
11.7	27.91	1.1	0.2	17.9	138.773
15.5	34.76	8.5	0.4	18.8	137.539
16.0	30.17	9.6	0.6	19.2	129.275
16.8	14.18	4.6	1.2	19.5	118.671
17.9	5.30	3.1	4.8	19.8	107.675
19.2	1.05	0.2	21.1	20.5	90.324
20.2	0.95	0.2	16.7	21.3	80.937
21.4	0.86	0.2	20.4	21.6	78.721
22.2	0.85	0.2	22.9	22.4	78.107
25.3	1.90	0.5	11.1	23.2	82.720
26.0	4.97	2.3	5.2	23.6	86.828
27.0	10.74	4.2	2.4	24.8	98.805
28.0	19.34	5.7	1.4	25.3	100.146
29.0	33.39	7.4	1.1	26.2	95.668
30.0	30.79	2.4	0.9	26.6	87.074
63.3	36.27	0.7	0.3	28.0	25.106
80.0	41.42	0.5	0.3	29.0	49.929
100.0	47.07	1.7	0.3	30.0	64.699
325.0	54.13	8.6	0.3	47.0	3.795
550.0	53.01	7.0	0.3	63.1	1.797
775.0	50.30	4.1	0.3	79.0	1.341
1000.0	47.08	3.5	0.3	80.4	1.116



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RF/IF MICROWAVE COMPONENTS

REV. A
 M98898
 NBP-21.4
 070509

Coaxial Band Pass Filter (Elliptic Response)

NBP-21.4

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)	FREQUENCY (MHz)	GROUP DELAY (nsec)
0.5	71.63	0.10	3.0	1.719
1.0	60.77	0.10	3.1	6.056
1.5	57.59	0.10	7.3	11.010
2.0	54.26	0.10	11.4	16.139
2.5	51.03	0.10	15.6	142.895
3.0	48.32	0.10	16.1	85.576
4.0	44.25	0.10	16.4	67.524
7.8	33.81	0.10	17.3	80.808
11.7	27.91	0.20	17.9	138.773
15.5	34.76	0.40	18.8	137.539
16.0	30.17	0.60	19.2	129.275
16.8	14.18	1.20	19.5	118.671
17.9	5.30	4.80	19.8	107.675
19.2	1.05	21.10	20.5	90.324
20.2	0.95	16.70	21.3	80.937
21.4	0.86	20.40	21.6	78.721
22.2	0.85	22.90	22.4	78.107
25.3	1.90	11.10	23.2	82.720
26.0	4.97	5.20	23.6	86.828
27.0	10.74	2.40	24.8	98.805
28.0	19.34	1.40	25.3	100.146
29.0	33.39	1.10	26.2	95.668
30.0	30.79	0.90	26.6	87.074
63.3	36.27	0.30	28.0	25.106
80.0	41.42	0.30	29.0	49.929
100.0	47.07	0.30	30.0	64.699
325.0	54.13	0.30	47.0	3.795
550.0	53.01	0.30	63.1	1.797
775.0	50.30	0.30	79.0	1.341
1000.0	47.08	0.30	80.4	1.116

REV. X1
NBP-21.4
070603
Page 1 of 1



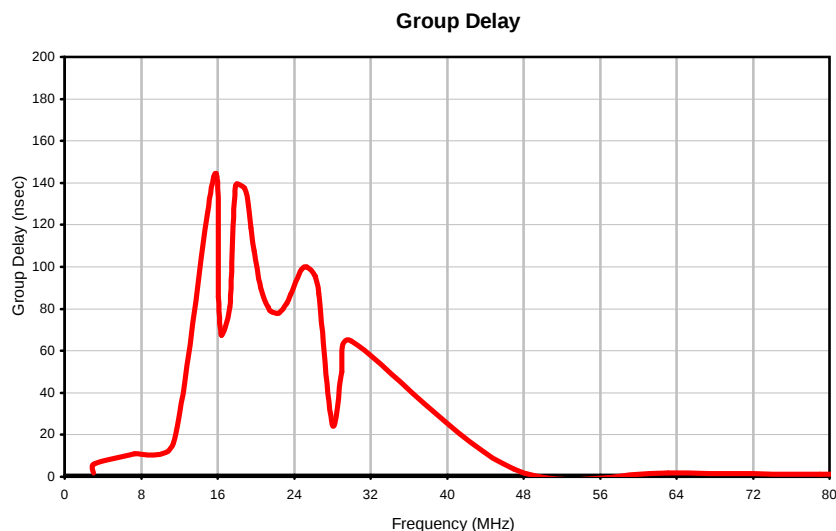
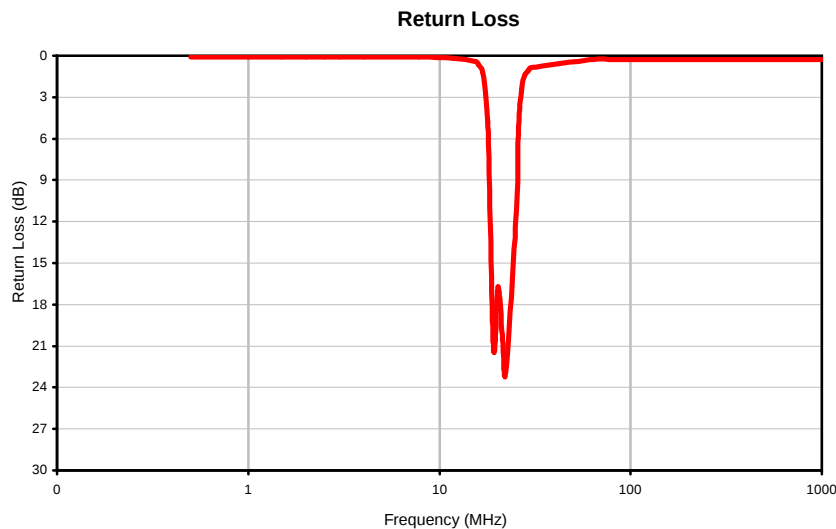
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Coaxial Band Pass Filter (Elliptic Response)

NBP-21.4

Typical Performance Curves



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REV. X1
NBP-21.4
070603
Page 1 of 1

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