Coaxial

Low Pass Filter

BBLP-156+
BBLP-156

50Ω Flat Time Delay DC to 94 MHz

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 BBLP models available with wide selection of cut-off frequencies

Applications

- linear modulation techniques
- voice transmission applications
- digital communications

CASE STYLE: FF55

Connectors	Model	Price	Qty.
BNC	BBLP-156(+)	Contact Sales Dept.	

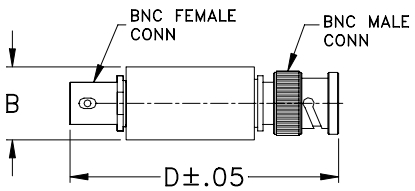
+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

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 x̄	VSWR (:1) DC-0.6fco x̄	GROUP DELAY VARIATION (nsec) DC-fco x̄	GROUP DELAY VARIATION (nsec) DC-2fco x̄	GROUP DELAY VARIATION (nsec) DC-2.67fco x̄
DC-94	156	312-416	416	1.3:1	1.1:1	0.3	1.1	1.5

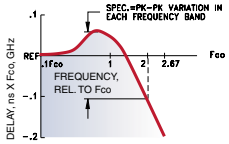
Outline Drawing



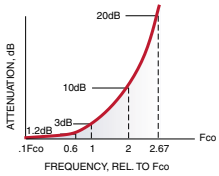
Outline Dimensions (inch / mm)

B	D	wt
.54	2.59	grams
13.72	65.79	40.0

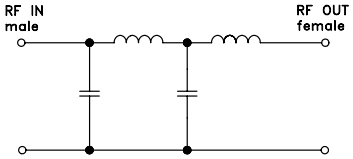
TYPICAL GROUP DELAY



TYPICAL FREQUENCY RESPONSE INSERTION LOSS



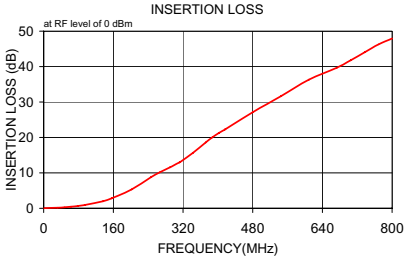
Electrical Schematic



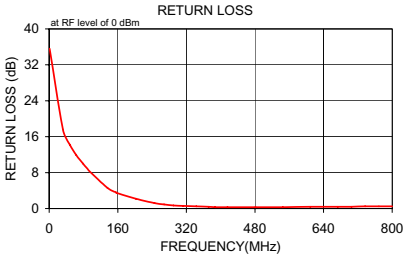
Typical Performance Data

Frequency (MHz)	Insertion Loss (dB) x̄	Insertion Loss (dB) σ	Return Loss (dB)	Frequency (MHz)	Group Delay (nsec)
1.0	0.05	0.1	35.6	1.0	2.185
32.0	0.17	0.1	17.6	17.0	2.540
48.0	0.30	0.1	14.2	32.0	2.534
63.0	0.46	0.1	11.9	48.0	2.358
79.0	0.68	0.1	10.0	63.0	2.382
94.0	0.92	0.1	8.3	79.0	2.619
95.0	0.93	0.1	8.2	94.0	2.595
136.0	1.98	0.1	4.6	95.0	2.467
156.0	2.79	0.2	3.6	116.0	2.682
157.0	2.85	0.2	3.5	136.0	2.392
202.0	5.33	0.2	2.2	156.0	2.383
246.0	8.75	0.3	1.2	157.0	2.835
268.0	10.25	0.3	0.9	180.0	2.501
290.0	11.57	0.3	0.7	202.0	2.433
312.0	12.97	0.3	0.6	224.0	1.923
313.0	13.03	0.3	0.6	246.0	1.878
343.0	15.67	0.3	0.5	268.0	1.392
372.0	18.60	0.3	0.4	290.0	1.756
387.0	20.01	0.3	0.3	312.0	2.001
402.0	21.23	0.3	0.3	313.0	2.235
416.0	22.25	0.3	0.3	328.0	1.944
417.0	22.32	0.3	0.3	343.0	1.740
481.0	27.17	0.5	0.3	358.0	1.360
545.0	31.67	0.7	0.3	372.0	0.911
609.0	36.32	1.0	0.4	387.0	0.786
673.0	39.65	1.2	0.4	402.0	1.170
705.0	41.78	1.2	0.4	416.0	0.978
737.0	44.07	1.6	0.5	417.0	1.269
769.0	46.28	1.6	0.5	449.0	1.042
800.0	47.95	1.8	0.5	481.0	0.864

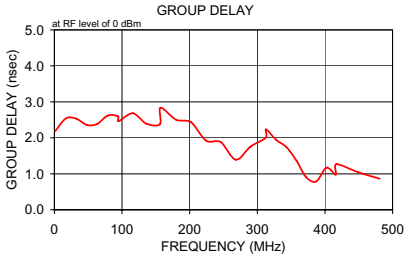
INSERTION LOSS



RETURN LOSS



GROUP DELAY



Coaxial Low Pass Filter (Flat Time Delay) BBLP-156

Typical Performance Data

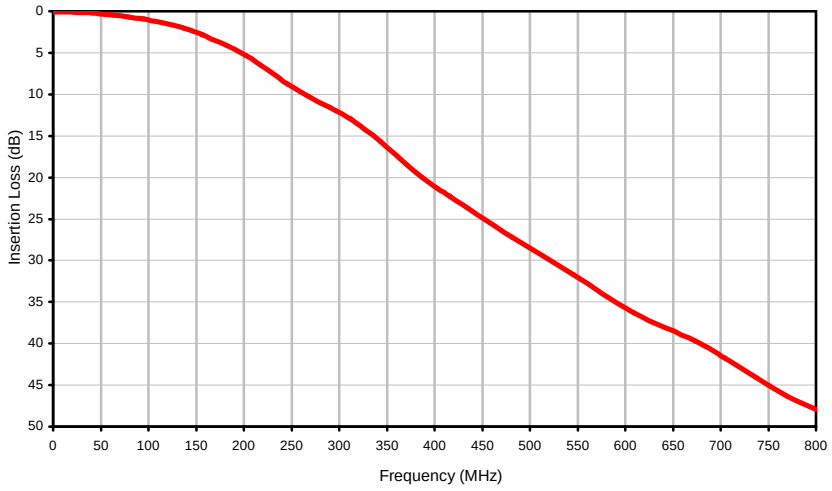
FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
1.0	0.05	35.60
32.0	0.17	17.60
48.0	0.30	14.20
63.0	0.46	11.90
79.0	0.68	10.00
94.0	0.92	8.30
95.0	0.93	8.20
136.0	1.98	4.60
156.0	2.79	3.60
157.0	2.85	3.50
202.0	5.33	2.20
246.0	8.75	1.20
268.0	10.25	0.90
290.0	11.57	0.70
312.0	12.97	0.60
313.0	13.03	0.60
343.0	15.67	0.50
372.0	18.60	0.40
387.0	20.01	0.30
402.0	21.23	0.30
416.0	22.25	0.30
417.0	22.32	0.30
481.0	27.17	0.30
545.0	31.67	0.30
609.0	36.32	0.40
673.0	39.65	0.40
705.0	41.78	0.40
737.0	44.07	0.50
769.0	46.28	0.50
800.0	47.95	0.50

FREQUENCY (MHz)	GROUP DELAY (nsec)
1.0	2.185
17.0	2.540
32.0	2.534
48.0	2.358
63.0	2.382
79.0	2.619
94.0	2.595
95.0	2.467
116.0	2.682
136.0	2.392
156.0	2.383
157.0	2.835
180.0	2.501
202.0	2.433
224.0	1.923
246.0	1.878
268.0	1.392
290.0	1.756
312.0	2.001
313.0	2.235
328.0	1.944
343.0	1.740
358.0	1.360
372.0	0.911
387.0	0.786
402.0	1.170
416.0	0.978
417.0	1.269
449.0	1.042
481.0	0.864

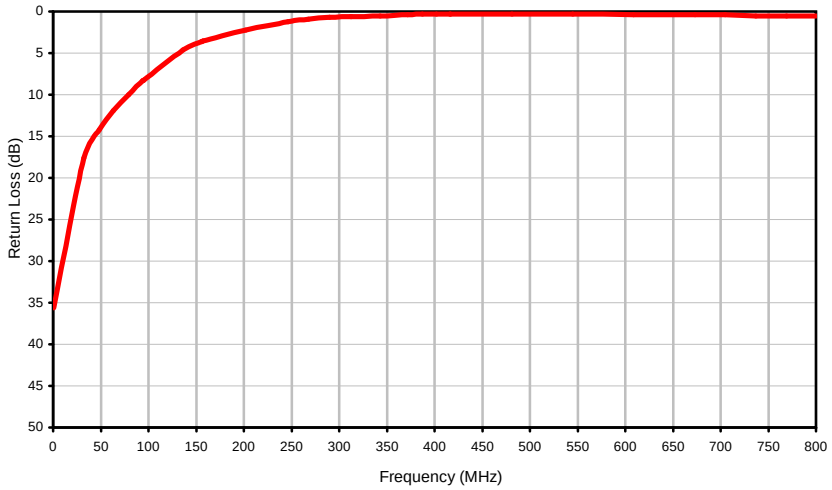
Coaxial Low Pass Filter (Flat Time Delay) BBLP-156

Typical Performance Curves

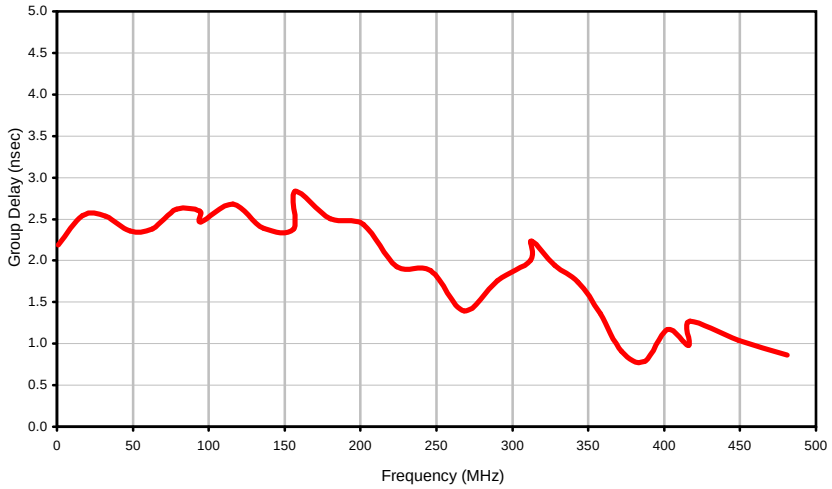
Insertion Loss



Return Loss



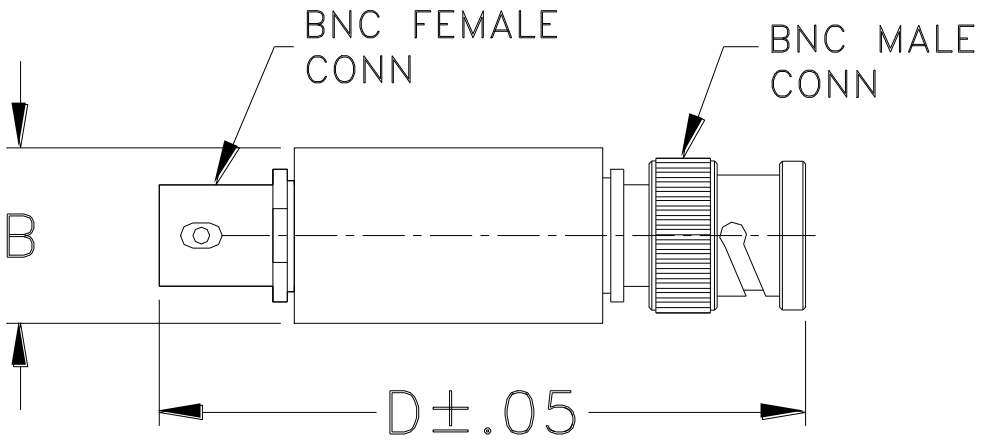
Group Delay



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 ENV28

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