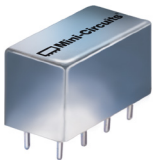
Plug-In

Low Pass Filter

PBLP-200+
PBLP-200

50Ω Flat Time Delay DC to 120 MHz



CASE STYLE: A01

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.

Pin Connections

INPUT	1
OUTPUT	8
GROUND	2,3,4,5,6,7
CASE GROUND	2,3,4,5,6,7

Features

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

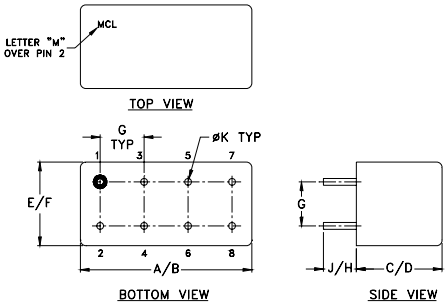
Applications

- linear modulation techniques
- voice transmission applications
- digital communications

+RoHS Compliant

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

Outline Drawing



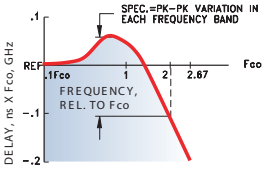
Outline Dimensions (inch / mm)

A	B	C	D	E	F
.770	.800	.385	.400	.370	.400
19.56	20.32	9.78	10.16	9.40	10.16
G	H	J	K		wt
.200	.20	.14	.031		grams
5.08	5.08	3.56	0.79		5.2

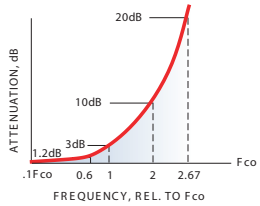
Low Pass Filter Electrical Specifications

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 X	VSWR (:1) DC-0.6fco X	GROUP DELAY VARIATION (nsec) DC-fco X	GROUP DELAY VARIATION (nsec) DC-2fco X	GROUP DELAY VARIATION (nsec) DC-2.67fco X
DC-120	200	400-534	534	1.6:1	1.9:1	0.4	1.3	1.6

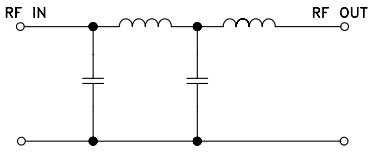
TYPICAL GROUP DELAY



TYPICAL FREQUENCY RESPONSE INSERTION LOSS



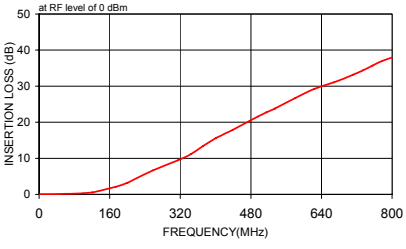
electrical schematic



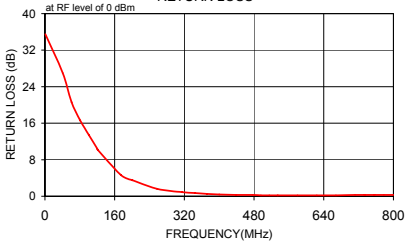
Typical Performance Data

Frequency (MHz)	Insertion Loss (dB) x̄	Insertion Loss (dB) σ	Return Loss (dB)	Frequency (MHz)	Group Delay (nsec)
1.0	0.04	0.1	35.5	1.0	1.829
41.0	0.10	0.1	27.0	21.0	1.915
61.0	0.16	0.1	20.6	41.0	2.140
81.0	0.22	0.1	16.6	61.0	2.006
101.0	0.33	0.1	13.4	81.0	2.109
120.0	0.52	0.1	10.4	101.0	2.087
121.0	0.53	0.1	10.2	120.0	2.170
174.0	2.10	0.1	4.7	121.0	2.113
200.0	3.22	0.1	3.5	148.0	2.521
201.0	3.26	0.1	3.5	174.0	2.169
258.0	6.65	0.2	1.6	200.0	1.964
315.0	9.45	0.2	0.9	201.0	2.367
344.0	11.17	0.3	0.7	230.0	1.912
372.0	13.45	0.4	0.5	258.0	1.485
400.0	15.58	0.5	0.4	287.0	1.356
401.0	15.65	0.5	0.4	315.0	2.048
439.0	17.90	0.7	0.3	344.0	2.142
477.0	20.36	0.8	0.3	372.0	1.206
496.0	21.60	0.8	0.2	400.0	0.894
515.0	22.72	0.9	0.2	401.0	1.205
534.0	23.75	0.9	0.2	420.0	1.143
535.0	23.81	0.9	0.2	439.0	0.984
580.0	26.67	1.0	0.2	458.0	1.412
624.0	29.26	1.0	0.2	477.0	0.888
668.0	31.05	1.1	0.2	496.0	0.903
712.0	33.19	1.2	0.3	515.0	1.244
734.0	34.36	1.2	0.3	534.0	1.282
756.0	35.72	1.2	0.3	535.0	0.796
778.0	37.00	1.2	0.3	558.0	1.491
800.0	37.94	1.1	0.3	580.0	0.941

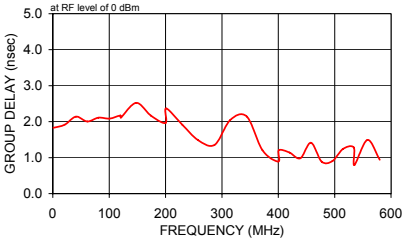
INSERTION LOSS



RETURN LOSS



GROUP DELAY



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.
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Plug-In Low Pass Filter (Flat Time Delay) PBLP-200

Typical Performance Data

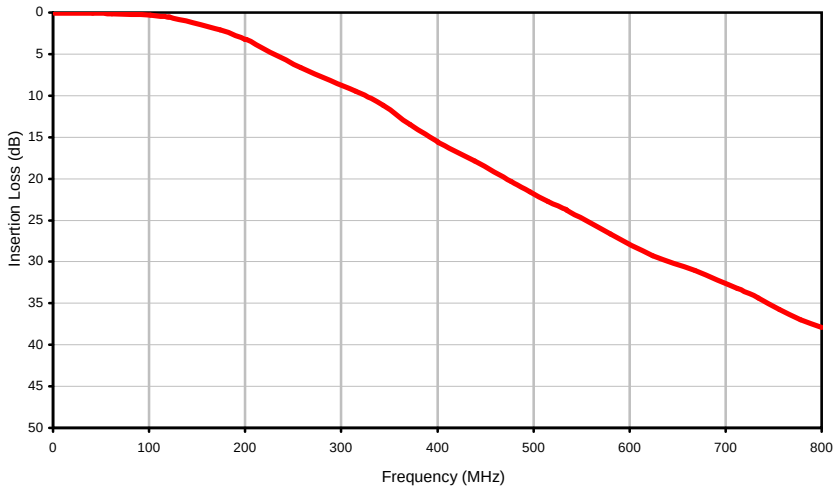
FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
1	0.04	35.50
41	0.10	27.00
61	0.16	20.60
81	0.22	16.60
101	0.33	13.40
120	0.52	10.40
121	0.53	10.20
174	2.10	4.70
200	3.22	3.50
201	3.26	3.50
258	6.65	1.60
315	9.45	0.90
344	11.17	0.70
372	13.45	0.50
400	15.58	0.40
401	15.65	0.40
439	17.90	0.30
477	20.36	0.30
496	21.60	0.20
515	22.72	0.20
534	23.75	0.20
535	23.81	0.20
580	26.67	0.20
624	29.26	0.20
668	31.05	0.20
712	33.19	0.30
734	34.36	0.30
756	35.72	0.30
778	37.00	0.30
800	37.94	0.30

FREQUENCY (MHz)	GROUP DELAY (nsec)
1	1.829
21	1.915
41	2.140
61	2.006
81	2.109
101	2.087
120	2.170
121	2.113
148	2.521
174	2.169
200	1.964
201	2.367
230	1.912
258	1.485
287	1.356
315	2.048
344	2.142
372	1.206
400	0.894
401	1.205
420	1.143
439	0.984
458	1.412
477	0.888
496	0.903
515	1.244
534	1.282
535	0.796
558	1.491
580	0.941

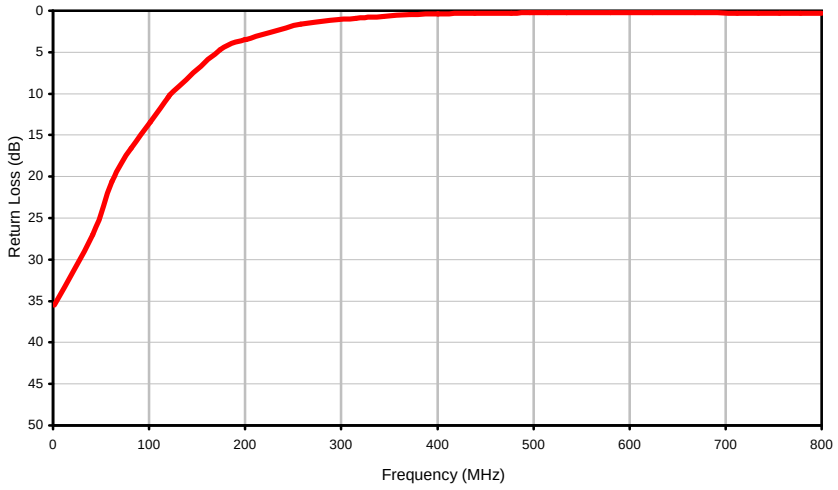
Plug-In Low Pass Filter (Flat Time Delay) PBLP-200

Typical Performance Curves

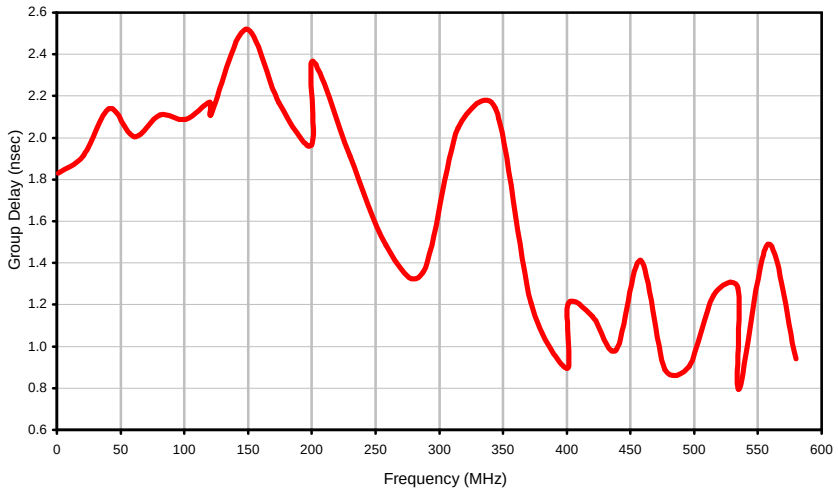
Insertion Loss



Return Loss



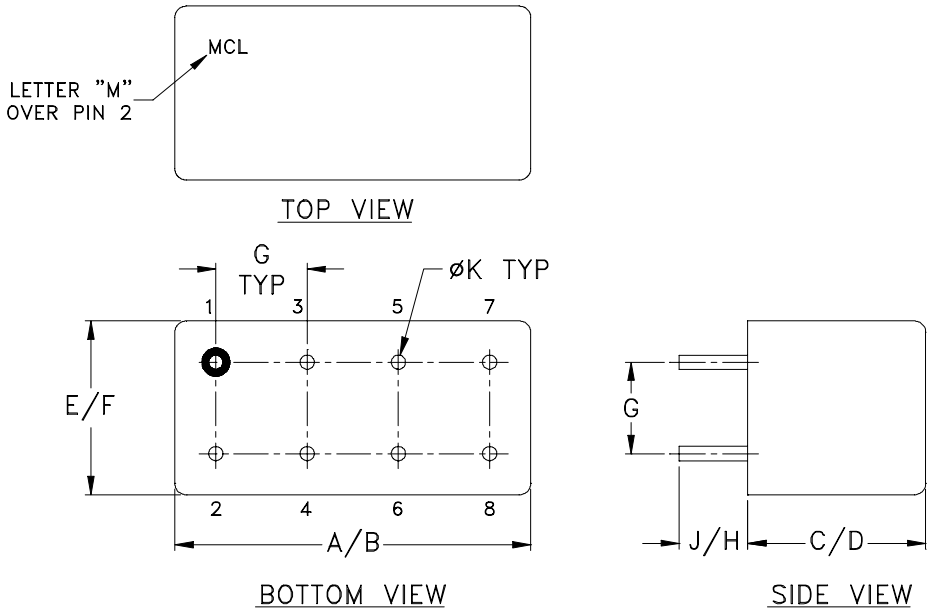
Group Delay



Case Style A

A01
A04
A05
A06

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	WT, GRAM
A01	.770 (19.56)	.800 (20.32)	.385 (9.78)	.400 (10.16)	.370 (9.40)	.400 (10.16)	.200 (5.08)	.20 (5.08)	.14 (3.56)	.031 (.79)	5.2
A04			.200 (5.08)	.210 (5.33)							3.7
A05			.240 (6.10)	.250 (6.35)							3.7
A06			.285 (7.24)	.310 (7.87)							5.2

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

Notes:

1. Header material: C.R.S.
   Pin material: #52 alloy.
   Cover material: Cupro-Nickel.
2. Pin finish: Electro Tin-Silver.
3. Insulated spacer available. Request P/N B14-045-01.
4. Tolerance on pin diameter +/-.005 inch.
5. Glass meniscus 0.015 inch max.
6. Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.

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Environmental Specifications ENV01

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
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Moisture Resistance	10 cycles, 24 hours per cycle	MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours
Solderability	10X Magnification	J-STD-002, 95% Coverage
Resistance to Solder Heat	260°C for 10 seconds	MIL-STD-202, Method 210, Condition B
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
Terminal Strength	4 1/2 Pound Pull	MIL-STD-202, Method 211, Condition A

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
Gross Leak	125°C Bubble Test	MIL-STD-202, Method 112, Condition D
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D