Plug-In

Bandpass Filter

PIF-50+

50Ω Constant Impedance 41 to 58 MHz

Maximum Ratings

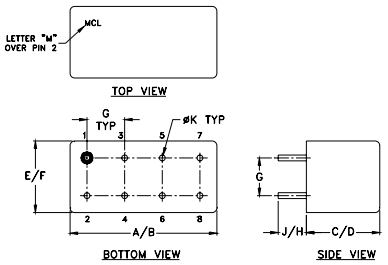
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5W max.

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

Pin Connections

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

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

Features

- low VSWR in pass & stopbands, 1.3:1 typ.
- shielded welded case, hermetically sealed
- custom designs available

Applications

- harmonic rejection
- lab use
- military/hi-rel applications

Generic photo used for illustration purposes only

CASE STYLE: A01

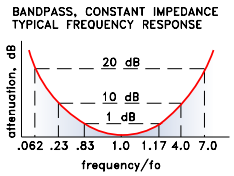
+RoHS Compliant

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

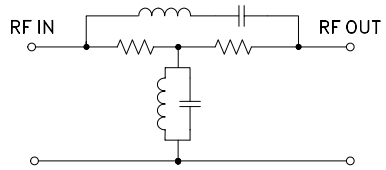
Bandpass Filter Electrical Specifications

MODEL NO.	CENTER FREQ. (MHz)	PASSBAND (MHz) (loss<1 dB)	STOPBANDS (loss > 10 dB) at MHz	STOPBANDS (loss > 20 dB) at MHz	VSWR, 1.3:1 Typ. TOTAL BAND (MHz)
PIF-50+	50	41-58	11.5 & 200	3.1 & 350	DC-440

typical frequency response

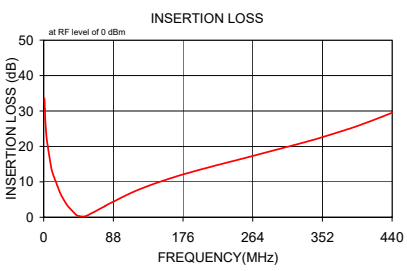


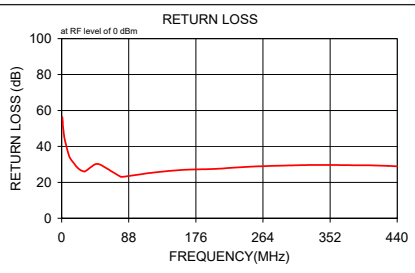
electrical schematic

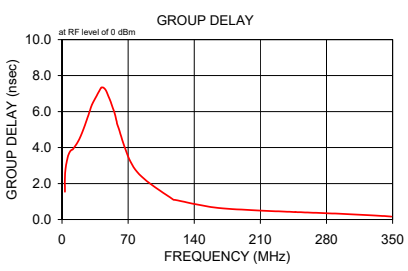


Typical Performance Data

Frequency (MHz)	Insertion Loss (dB) x̄	Insertion Loss (dB) σ	Return Loss (dB)	Frequency (MHz)	Group Delay (nsec)
1.0	33.62	0.2	56.3	3.1	1.540
1.4	30.60	0.2	53.5	3.2	2.572
1.8	28.39	0.2	51.1	5.9	3.434
2.3	26.60	0.2	49.3	8.7	3.800
2.7	25.16	0.2	47.6	11.4	3.893
3.1	23.91	0.2	46.4	11.6	3.910
4.0	21.72	0.3	43.9	18.2	4.448
9.0	14.63	0.2	35.6	24.4	5.257
11.5	12.44	0.2	33.2	31.1	6.290
20.0	7.25	0.2	28.5	32.2	6.428
23.7	5.61	0.2	27.1	41.0	7.293
27.3	4.18	0.2	26.3	41.7	7.342
31.0	2.95	0.2	26.2	43.9	7.325
41.0	0.70	0.1	29.3	46.2	7.197
45.5	0.28	0.1	30.2	48.7	6.905
50.0	0.21	0.1	30.0	51.3	6.571
53.0	0.34	0.1	29.3	53.1	6.309
77.0	3.12	0.1	23.2	55.9	5.874
80.0	3.52	0.1	23.1	57.9	5.441
120.0	7.84	0.1	25.4	58.9	5.242
160.0	10.99	0.2	27.0	77.6	2.769
200.0	13.61	0.2	27.5	117.5	1.114
250.0	16.51	0.2	28.8	119.5	1.093
316.7	20.38	0.4	29.6	160.3	0.679
350.0	22.46	0.4	29.7	200.7	0.525
390.0	25.29	0.6	29.5	246.9	0.414
402.5	26.25	0.7	29.5	251.2	0.408
415.0	27.29	0.8	29.3	298.5	0.306
427.5	28.35	0.9	29.2	342.8	0.185
440.0	29.49	1.0	28.9	348.7	0.163







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

Plug-In Band Pass Filter (Constant Impedance) PIF-50+

Typical Performance Data

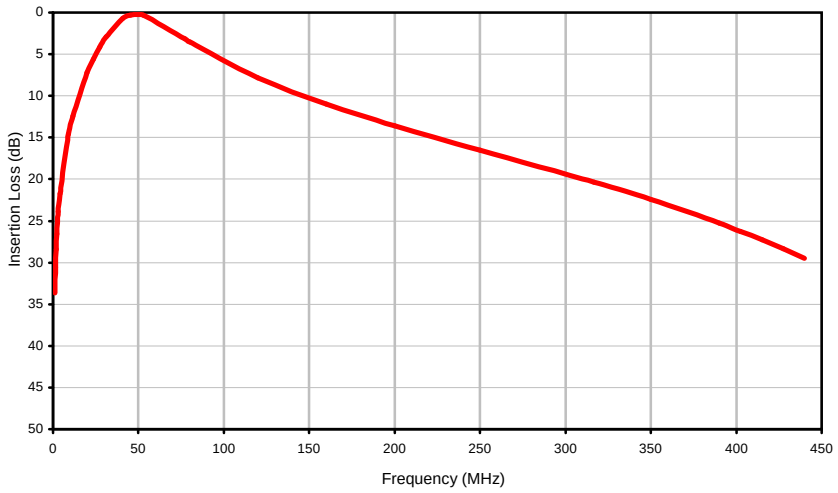
FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
1.0	33.62	56.30
1.4	30.60	53.50
1.8	28.39	51.10
2.3	26.60	49.30
2.7	25.16	47.60
3.1	23.91	46.40
4.0	21.72	43.90
9.0	14.63	35.60
11.5	12.44	33.20
20.0	7.25	28.50
23.7	5.61	27.10
27.3	4.18	26.30
31.0	2.95	26.20
41.0	0.70	29.30
45.5	0.28	30.20
50.0	0.21	30.00
53.0	0.34	29.30
77.0	3.12	23.20
80.0	3.52	23.10
120.0	7.84	25.40
160.0	10.99	27.00
200.0	13.61	27.50
250.0	16.51	28.80
316.7	20.38	29.60
350.0	22.46	29.70
390.0	25.29	29.50
402.5	26.25	29.50
415.0	27.29	29.30
427.5	28.35	29.20
440.0	29.49	28.90

FREQUENCY (MHz)	GROUP DELAY (nsec)
3.1	1.540
3.2	2.572
5.9	3.434
8.7	3.800
11.4	3.893
11.6	3.910
18.2	4.448
24.4	5.257
31.1	6.290
32.2	6.428
41.0	7.293
41.7	7.342
43.9	7.325
46.2	7.197
48.7	6.905
51.3	6.571
53.1	6.309
55.9	5.874
57.9	5.441
58.9	5.242
77.6	2.769
117.5	1.114
119.5	1.093
160.3	0.679
200.7	0.525
246.9	0.414
251.2	0.408
298.5	0.306
342.8	0.185
348.7	0.163

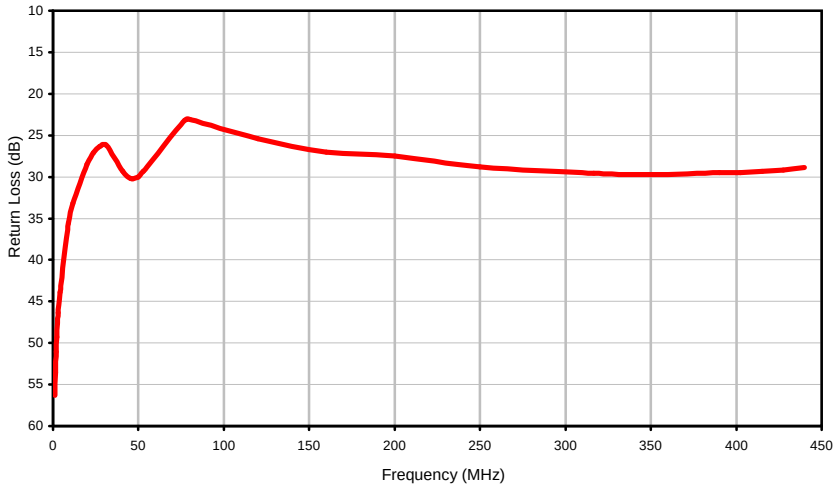
Plug-In Band Pass Filter (Constant Impedance) PIF-50+

Typical Performance Curves

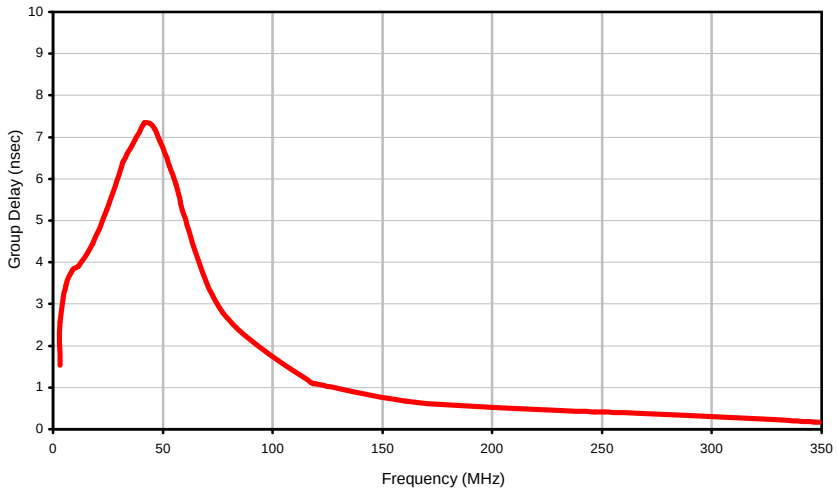
Insertion Loss



Return Loss



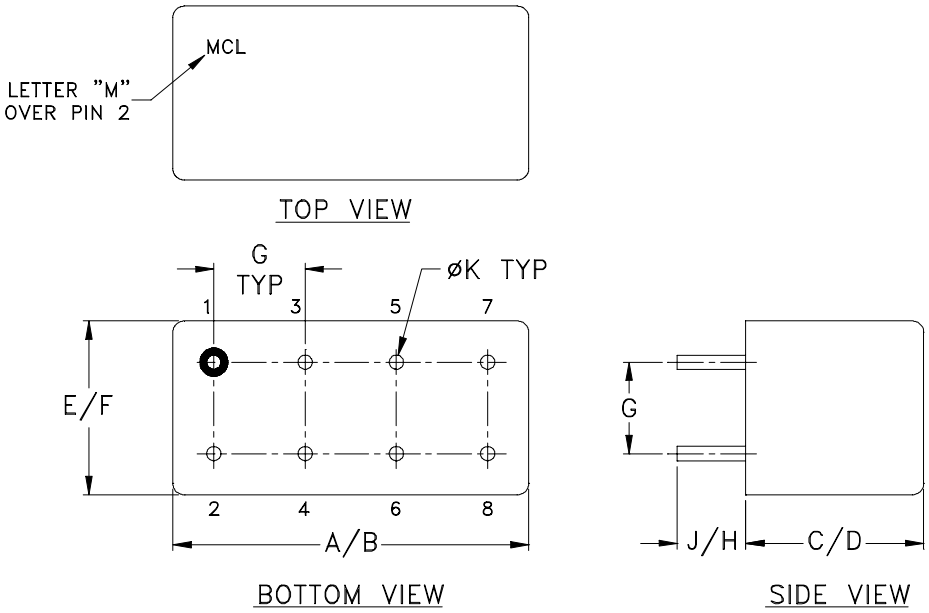
Group Delay



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.

Mini-Circuits®
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Mini-Circuits

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