



Mini-Circuits

LUMPED LC SURFACE MOUNT

Bandpass Filter

BPF-A90+

50Ω

74 to 106 MHz

KEY FEATURES

- Low Insertion Loss, 2.0 dB Typ.
- High Rejection, 64 dB Typ.
- Wide Stopband Rejection, Up to 2000 MHz
- Miniature Shielded Package



Generic photo used for illustration purposes only

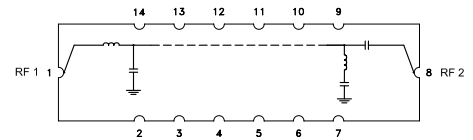
APPLICATIONS

- VHF Radio Transmission

PRODUCT OVERVIEW

Mini-Circuits' Model-BPF-A90+ is a Lumped LC filter that offer a good insertion loss and high rejection. This bandpass filter covers from 74 to 106MHz. This filter has high Q capacitors and inductors to achieve a low insertion loss. It has repeatable performance across production lots.

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS^{1,2,3} AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	Fc	—	—	90	—	MHz
	Insertion Loss	F1-F2	74 - 106	—	2.0	3.5	dB
	Return Loss	F1-F2	74 - 106	12	15	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 40	55	64	—	dB
		F3-F4	40 - 64	20	29	—	
Stopband, Upper	Rejection	F5-F6	118 - 200	20	30	—	dB
		F6-F7	200 - 500	40	50	—	
		F7-F8	500 - 2000	50	55	—	

1. Tested in Evaluation Board P/N TB-BPF-A90+.

2. This filter is bi-directional RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

3. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.

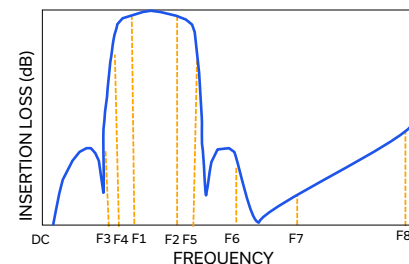
ABSOLUTE MAXIMUM RATINGS⁴

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power ⁵	1 W at +25°C

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

5. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 0.5 W at +85°C.

TYPICAL FREQUENCY RESPONSE AT +25°C



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REV. OR
ECO-026012
BPF-A90+
EDU5077
URJ
250626

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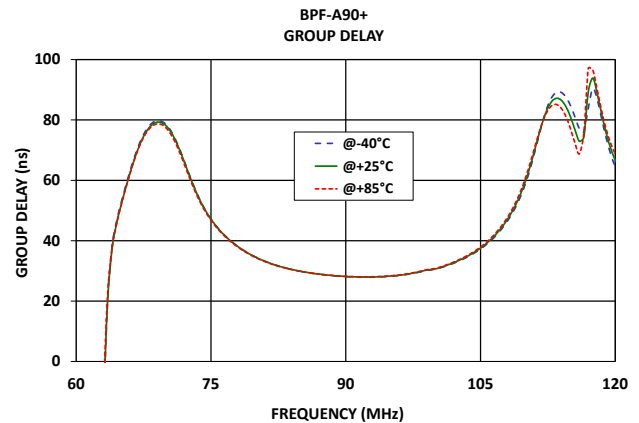
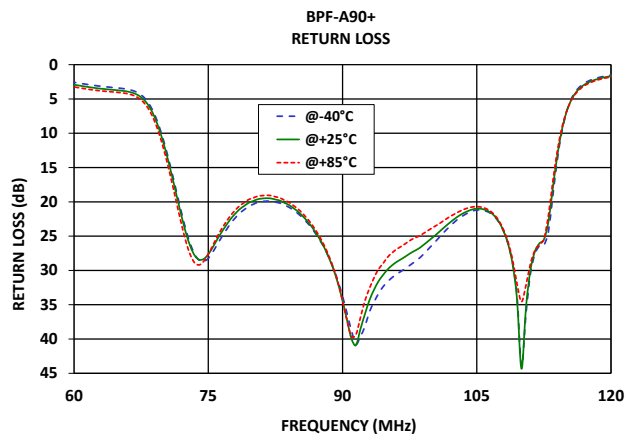
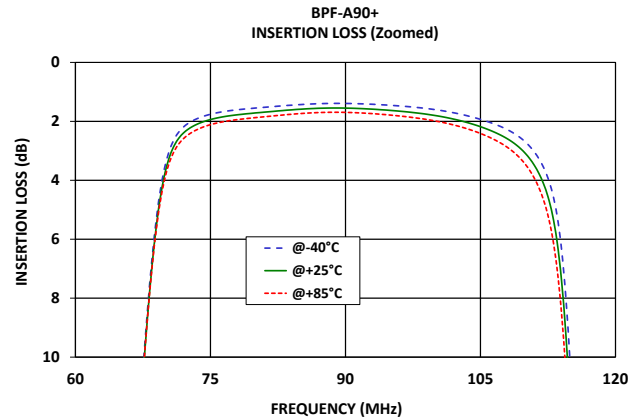
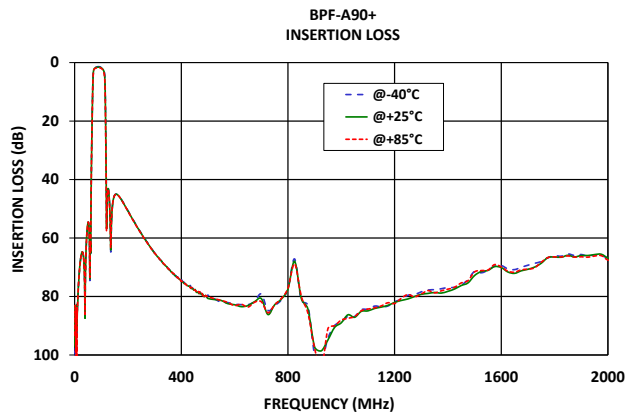
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TYPICAL PERFORMANCE GRAPHS





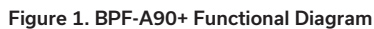
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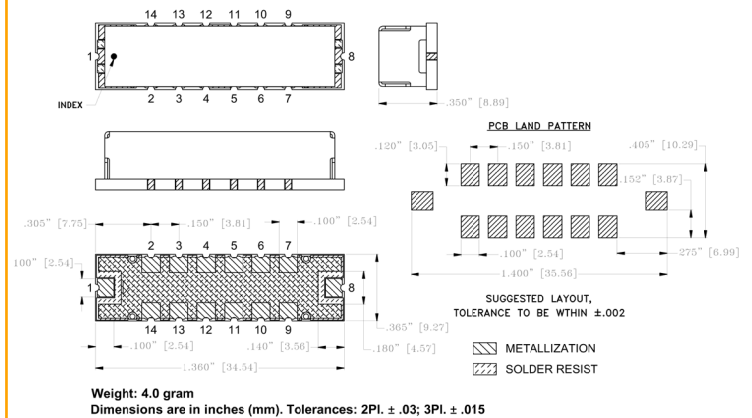
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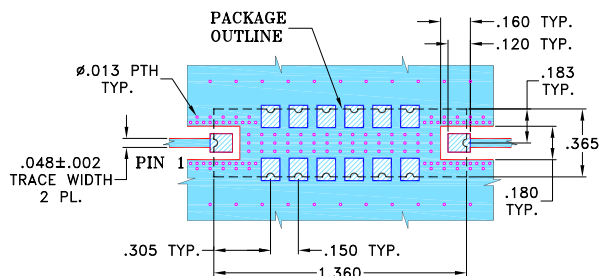
CASE STYLE DRAWING



Function	Pad Number	Description
RF1	1	Connects to RF Input Port
RF2	8	Connects to RF Output Port
GROUND	2-7,9-14	Connects to Ground on PCB, (See drawing PL-227)
NC	—	No connection, not used internally. See drawing PL-227 for connection to PCB



SUGGESTED MOUNTING CONFIGURATION
FOR HQ1157 CASE STYLE, rf PIN CONNECTION



1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .025"±.002". COPPER: 1/2 OZ. EACH SIDE.
FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.


-  DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Figure 2. Suggested PCB Layout PL-227

PRODUCT MARKING*: BPF-A90

*Marking may contain other features or characters for internal lot control.





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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD.

[CLICK HERE](#)

Performance Data and Graphs	Data
	Graphs
	S-Parameter (S2P Files) Data Set (.zip file) De-embedded to device pads
Case Style	HQ1157 Lead Finish: Gold over Nickel Plate
RoHS Status	Compliant
Tape and Reel	TR-F83
Suggested Layout for PCB Design	PL-227
Evaluation Board	TB-BPF-A90+
	Gerber File
Environmental Rating	ENV02T1

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-Circuits' 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/terms/viewterm.html

