Surface Mount

Bandpass Filter

BPF-V300+

50Ω 230 to 370 MHz

CASE STYLE: KV1974

The Big Deal

- Wide bandwidth
- Very low insertion loss, 1.1 dB typical
- Excellent rejection, 50 dB until 10th Harmonic
- Shielded package

Product Overview

The BPF-V300+ is a 50Ω bandpass filter fabricated using SMT technology. This bandpass filter covers from 230-370 MHz. This filter is built with high Q capacitors and wire welded inductors for high reliability. This filter has fast roll-off and developed for surveillance receiver in aircraft systems. It has repeatable performance across lots and consistent performance across temperature.

Key Features

Feature	Advantages
Low insertion loss	Very low insertion loss enables the filter to be used in high performance applications.
Excellent rejection out to 10th harmonic	This enables the filter to attenuate spurious signals and reject harmonics for broad frequency band.
Shielded case	Reduced interference with and from the surrounding components.

Surface Mount

Bandpass Filter

BPF-V300+

50Ω 230 to 370 MHz

CASE STYLE: KV1974

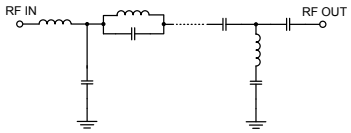
Features

- Wide bandwidth
- Very low insertion loss
- Excellent rejection
- Miniature shielded package

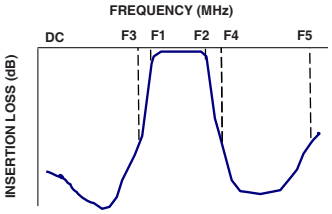
Applications

- Civil aircraft communication radio
- Defence Applications
- Surveillance receiver
- Emergency Locator Transponders (ELT)

Functional Schematic



Typical Frequency Response



Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	300	—	MHz
	Insertion Loss	F1-F2	230-370	—	1.1	2.0	dB
	VSWR	F1-F2	230-370	—	1.2	1.5	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-170	25	37	—	dB
	VSWR	DC-F3	DC-170	—	20	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	440-3000	25	38	—	dB
	VSWR	F4-F5	440-3000	—	20	—	:1

Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5 W

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

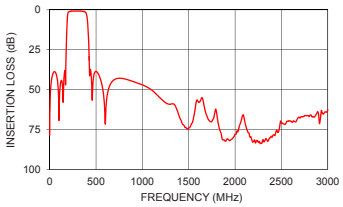
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	68.59	476.18	230	7.29
10	49.51	550.36	240	6.43
100	69.41	44.87	250	5.92
170	44.78	23.43	260	5.54
176	29.58	18.88	270	5.28
180	20.58	14.92	280	5.10
186	10.62	7.85	290	4.99
194	3.01	2.14	295	4.96
230	0.88	1.16	300	4.96
300	0.77	1.17	305	4.97
370	1.10	1.11	310	5.01
395	2.44	1.78	315	5.06
400	3.60	2.34	320	5.13
412	10.51	4.68	330	5.31
420	20.14	6.85	335	5.43
426	31.66	8.90	340	5.57
440	37.47	14.49	345	5.74
1000	47.06	126.08	350	5.94
2000	78.14	49.43	360	6.45
3000	62.75	63.48	370	7.41

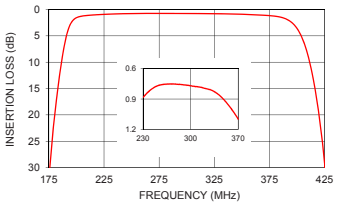
+RoHS Compliant

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

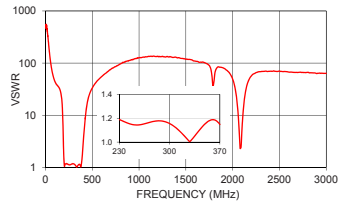
BPF-V300+
INSERTION LOSS (Full band)



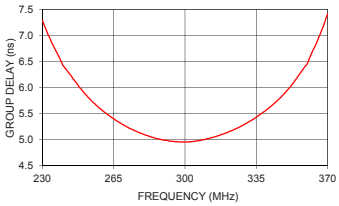
BPF-V300+
INSERTION LOSS (Pass band)



BPF-V300+
VSWR



BPF-V300+
GROUP DELAY



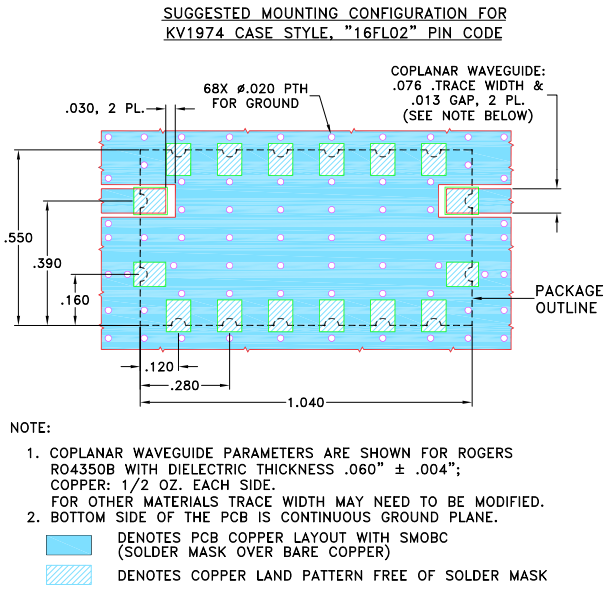
Notes

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.
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

Pad Connections

INPUT	1
OUTPUT	10
GROUND	2,3,4,5,6,7,8,9,11,12,13,14,15,16

Demo Board MCL P/N: TB-953+
Suggested PCB Layout (PL-507)



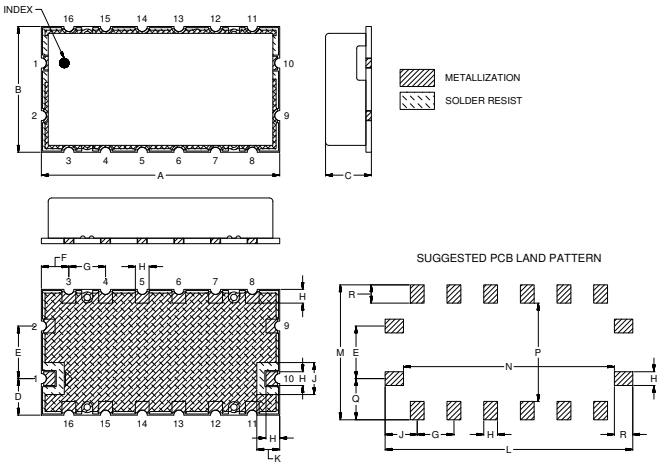
NOTE:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .060" ± .004"; 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 SOLDER MASK

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
1.040	**.550**	**.200**	**.160**	**.230**	**.120**	**.160**	**.060**	**.140**
26.42	13.97	5.08	4.06	5.84	3.05	4.06	1.52	3.56

K	L	M	N	P	Q	R	Wt.
.100	**1.080**	**.590**	**.920**	**.430**	**.180**	**.080**	grams
2.54	27.43	14.99	23.37	10.92	4.57	2.03	2