Surface Mount

Bandpass Filter

BPF-A1140+

50Ω 840 to 1440 MHz

CASE STYLE: HQ1157

The Big Deal

- Wide bandwidth
- Better rejection
- Miniature shielded package

Product Overview

The BPF-A1140+ is a 50Ω bandpass filter fabricated using SMT technology. This bandpass filter covers from 840-1440 MHz. This filter is built with high Q capacitors and air-coil inductors for superior performance. This filter is developed for square kilometer array telescope systems for radio astronomy. It has repeatable performance across lots and consistent performance across temperature.

Key Features

Feature	Advantages
Low insertion loss	Can be used in high performance applications such as radio astronomy.
Good rejection	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.

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Features

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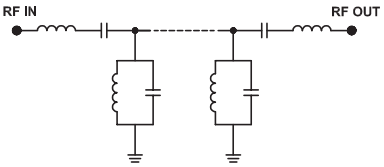
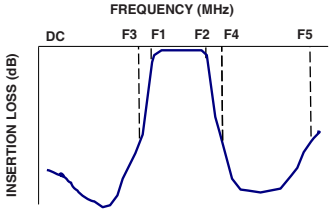
Applications

- Radio telescope Applications
- Radio astronomy
- Defense systems
- Space operation / space research
- Wireless medical telemetry

Functional Schematic



Typical Frequency Response



+RoHS Compliant

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

Electrical Specifications at 25°C

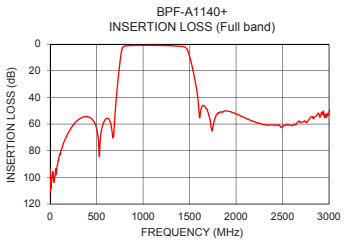
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	—	1140	—	MHz
	Insertion Loss	F1-F2	840-1440	—	2.5	4.0	dB
	VSWR	F1-F2	840-1440	—	1.5	1.9	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-711	20	30	—	dB
	VSWR	DC-F3	DC-711	—	10	—	:1
Stop Band, Upper	Insertion Loss	F4-F5	1577-3000	20	30	—	dB
	VSWR	F4-F5	1577-3000	—	7.0	—	:1

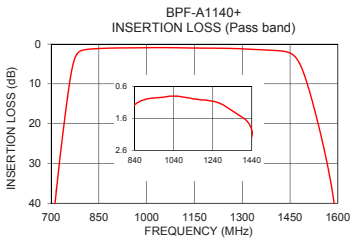
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1 W

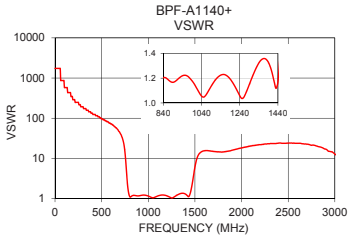
Permanent damage may occur if any of these limits are exceeded.

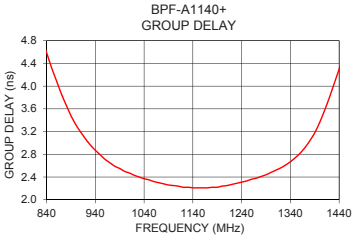
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	93.74	1737.18	840	4.59
316	56.11	173.72	890	3.48
711	41.31	37.77	910	3.19
736	23.17	24.14	930	2.96
756	10.87	9.96	950	2.79
771	4.46	3.35	970	2.65
786	2.08	1.54	1000	2.50
840	1.17	1.20	1030	2.40
990	0.93	1.18	1090	2.26
1140	0.99	1.22	1110	2.24
1300	1.20	1.19	1140	2.21
1440	1.97	1.17	1160	2.21
1477	4.47	2.83	1200	2.24
1502	9.50	6.42	1240	2.31
1542	21.30	12.71	1290	2.44
1577	34.42	14.87	1330	2.61
1752	61.83	14.62	1370	2.92
1977	51.62	17.75	1400	3.36
2500	62.22	23.81	1420	3.80
3000	51.17	12.89	1440	4.30









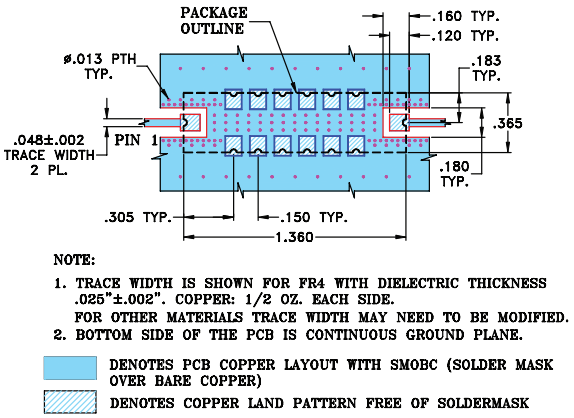
Notes

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	8
GROUND	2,3,4,5,6,7,9,10,11,12,13,14

Demo Board MCL P/N: TB-363+
Suggested PCB Layout (PL-227)



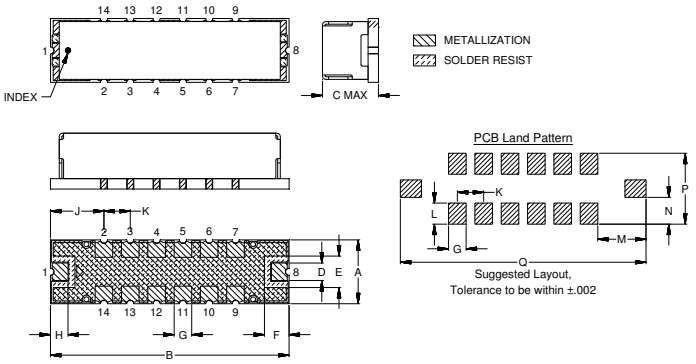
NOTE:

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

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H
.365	**1.360**	**.35**	**.100**	**.180**	**.140**	**.100**	**.100**
9.27	34.54	8.89	2.54	4.57	3.56	2.54	2.54

J	K	L	M	N	P	Q	Wt.
.305	**.150**	**.120**	**.275**	**.152**	**.405**	**1.400**	grams
7.75	3.81	3.05	6.99	3.86	10.29	35.56	4.0