# Surface Mount **Bandpass Filter**

# **BPF-A1140+**

 $50\Omega$ 840 to 1440 MHz

# The Big Deal

- Wide bandwidth
- Better rejection
- Miniature shielded package



Generic photo used for illustration purposes only CASE STYLE: HQ1157

# **Product Overview**

The BPF-A1140+ is a  $50\Omega$  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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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"); Puchasers 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

# **Bandpass Filter**

 $50\Omega$ 840 to 1440 MHz

# BPF-A1140+



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CASE STYLE: HQ1157

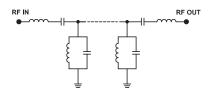
### **Features**

- · Wide bandwidth
- Better rejection
- · Miniature shielded package

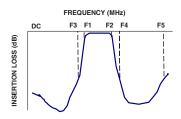
# **Applications**

- 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

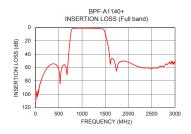
### Electrical Specifications at 25°C Frequency (MHz) **Parameter** Тур. Max. Unit Center Frequency 1140 MHz Pass Band 840-1440 2.5 4 0 Insertion Loss F1-F2 dB 840-1440 **VSWR** F1-F2 1.5 1.9 :1 DC-F3 DC-711 30 Insertion Loss 20 dB Stop Band, Lower DC-711 10 **VSWR** DC-F3 Insertion Loss 1577-3000 F4-F5 20 30 dB Stop Band, Upper 1577-3000 **VSWR** F4-F5 7.0 :1

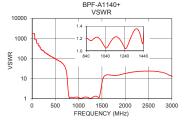
Maximum Ratings			
Operating Temperature	-40°C to 85°C		
Storage Temperature	-55°C to 100°C		
RF Power Input	1 W		

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

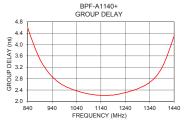
### Typical Performance Data at 25°C

	• • • • • • • • • • • • • • • • • • • •				
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
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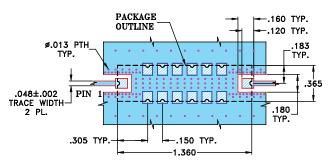
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### **Pad Connections**

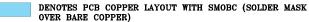
INPUT	1
OUTPUT	8
GROUND	2-7,9,-14

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



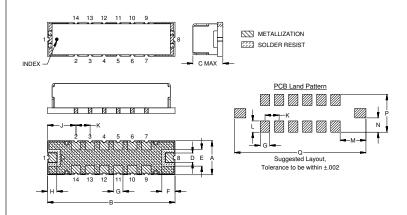
### NOTE:

- 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 COPPER LAND PATTERN FREE OF SOLDERMASK

### **Outline Drawing**



## Outline Dimensions (inch )

Н	G	F	Е	D	С	В	Α
.100	.100	.140	.180	.100	.35	1.360	.365
2.54	2.54	3.56	4.57	2.54	8.89	34.54	9.27
14/4	0	п	NI.			К	
VV t.	Q	Р	IN	IVI	L	r.	J
grams	1.400	.405	.152	.275	.120	.150	.305
4.0	35.56	10 29	3.86	6 99	3.05	3.81	7 75

Note: Please refer to case style drawing for details

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