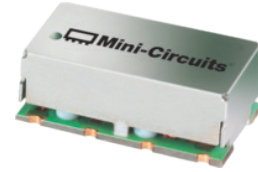


# Surface Mount Bandpass Filter

## SXBP-693+

50Ω      663 to 723 MHz



Generic photo used for illustration purposes only  
CASE STYLE: HF1139

### The Big Deal

- Low insertion loss, 1.4dB typ.
- Good VSWR, 1.3:1 typ.
- Flat group delay response, 1.5ns typ.
- Miniature shielded package
- Wide-band rejection, upto 5 GHz

### Product Overview

The SXBP-693+ is a 50Ω bandpass filter in a shielded package fabricated using SMT technology. This bandpass filter covers from 663 to 723 MHz. This filter has high Q capacitors and inductors to achieve a low insertion loss. In addition, roll-off is very sharper to reject adjacent channel resulting in higher selectivity. This filter has sharper cut-off and well suited for IF signal processing applications.

### Key Features

Feature	Advantages
Low insertion loss, 1.4 dB typ.	Can be used in telecommunication and broadband wireless application.
Good broad band rejection	This enables the filter to attenuate spurious signals and reject harmonics for broad frequency band.
Shielded package	The small surface mount package enables the SXBP-693+ to be used in compact designs.

#### Notes

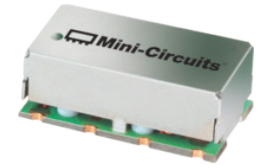
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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](http://www.minicircuits.com/MCLStore/terms.jsp)



# Bandpass Filter

## SXBP-693+

50Ω 663 to 723 MHz



Generic photo used for illustration purposes only  
CASE STYLE: HF1139

### Features

- Low insertion loss, 1.4dB typ.
- Flat group delay response, 1.5ns typ.
- Miniature shielded package

### Applications

- IF signal processing
- Military hi-rel systems
- Harmonic rejection
- Transmitters / Receivers
- Telecommunications and Broadband wireless

### Electrical Specifications at 25°C

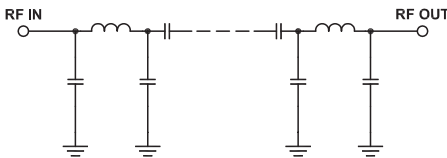
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center frequency	-	-	-	693	-	MHz
	Insertion Loss	F1-F2	663 - 723	-	1.4	2.2	dB
	VSWR	F1-F2	663 - 723	-	1.3	1.67	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 420	40	46	-	dB
		F3-F4	420 - 565	20	27	-	dB
Stop Band, Upper	Insertion Loss	F5-F6	800 - 850	20	29	-	dB
		F6-F7	850 - 2000	40	48	-	dB
		F7-F8	2000 - 5000	30	38	-	dB

### Maximum Ratings

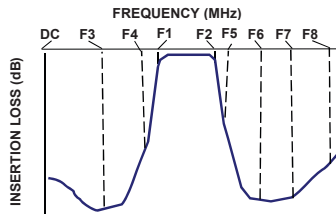
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	6 W max.

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

### Functional Schematic



### Typical Frequency Response

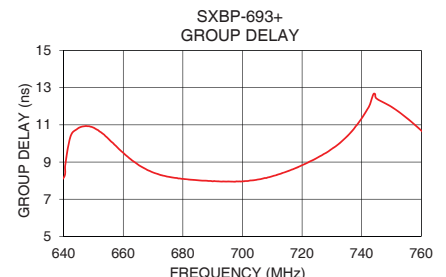
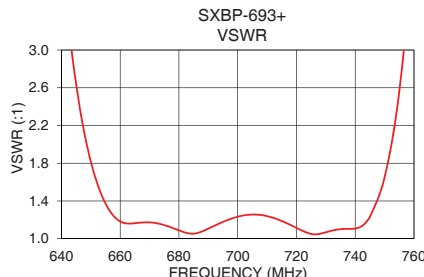
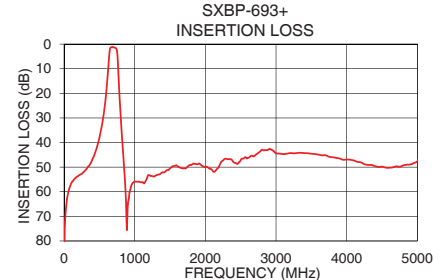
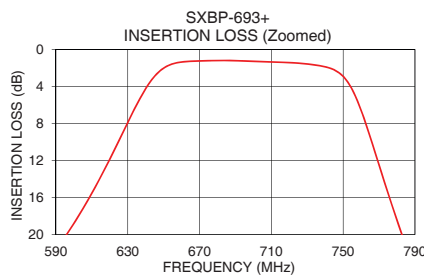


### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	97.88	355.91	663	9.08
50	61.65	552.19	666	8.76
100	56.72	510.48	669	8.51
420	45.63	140.66	672	8.34
565	27.65	84.10	675	8.21
595	20.28	50.09	678	8.14
644	3.12	2.87	681	8.08
663	1.31	1.16	684	8.04
680	1.21	1.09	687	8.00
693	1.24	1.15	690	7.96
710	1.36	1.24	693	7.95
723	1.46	1.07	696	7.95
750	2.91	1.65	699	7.96
785	21.24	21.99	702	7.98
800	28.78	33.34	705	8.06
850	50.16	63.33	708	8.14
800	28.78	33.34	711	8.28
1000	55.88	119.60	715	8.50
2000	49.91	1189.85	720	8.83
5000	47.57	272.03	723	9.06

### +RoHS Compliant

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



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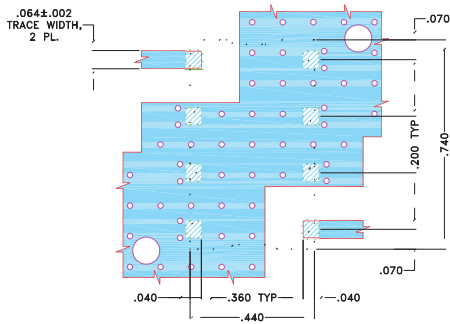


## Pad Connections

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

**Demo Board MCL P/N: TB-SXBP-693+**  
**Suggested PCB Layout (PL-449)**

SUGGESTED MOUNTING CONFIGURATION FOR  
 HF1139 CASE STYLE "08FL01" PIN CODE

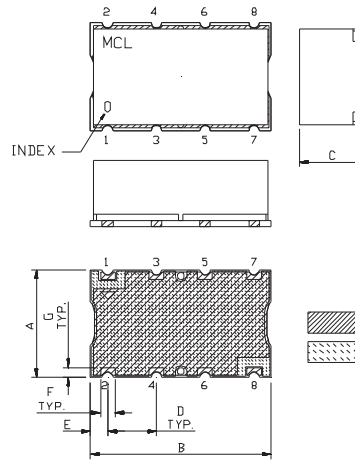


**NOTES:**

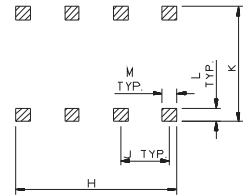
- TRACE WIDTH IS SHOWN FOR ROGERS WITH DIELECTRIC THICKNESS .030±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

## Outline Drawing



## PCB Land Pattern



## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.44	.74	.27	.200	.07	.060	.040
11.18	18.80	6.86	5.08	1.78	1.52	1.02
H	J	K	L	M	wt	
.660	.200	.470	.055	.060	grams	
16.76	5.08	11.94	1.40	1.52	3.0	

*Note: Please refer to case style drawing for details*

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