



THIN FILM COAXIAL

Bandpass Filter

ZABF-6R5G-S+

50Ω 6100 to 6900 MHz SMA Male/Female

KEY FEATURES

- Low Passband Insertion Loss, 2 dB Typ.
- High Rejection, 52 dB Typ.
- Small Size

APPLICATIONS

- Wireless Telecommunication
- C-Band

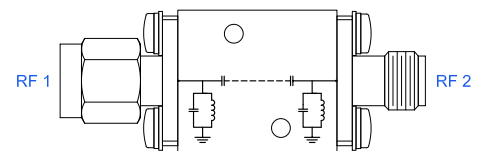
PRODUCT OVERVIEW

Mini-Circuits' Connectorized Thin-Film filters offer low insertion loss and high rejection realized via Thin-Film on Alumina substrate, using a sputtering process that can guarantee an enhanced Q and repeatable performance. Low pass, high pass, and bandpass connectorized thin-film designs can be realized with this technology up to 40 GHz in a small form factor helping customers achieve their SWaP objectives. Using our high quality thin-film manufacturing process we can guarantee repeatability on large batches of filters.



Generic photo used for illustration purposes only

FUNCTIONAL DIAGRAM



ELECTRICAL SPECIFICATIONS¹ AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency ²	—	—	—	6500	—	MHz
	Insertion Loss	F1-F2	6100 - 6900	—	2.0	3.5	dB
	Return Loss	F1-F2	6100 - 6900	—	10	—	dB
Stopband, Lower	Rejection	DC-F3	DC - 4600	40	48	—	dB
		F3-F4	4600 - 5100	20	30	—	
Stopband, Upper	Rejection	F5-F6	7900 - 8800	40	50	—	dB
		F6-F7	8800 - 10500	45	52	—	
		F7-F8	10500 - 13000	—	47	—	

1. 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.

2. Typical variation $\pm 3\%$

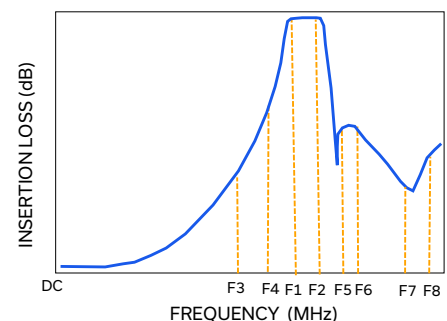
ABSOLUTE MAXIMUM RATINGS³

Parameter	Ratings
Operating Temperature	-55°C to +125°C
Storage Temperature	-55°C to +125°C
Input Power ⁴	1W at 25°C

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

4. Power rating applies only to signals within the passband.

TYPICAL FREQUENCY RESPONSE





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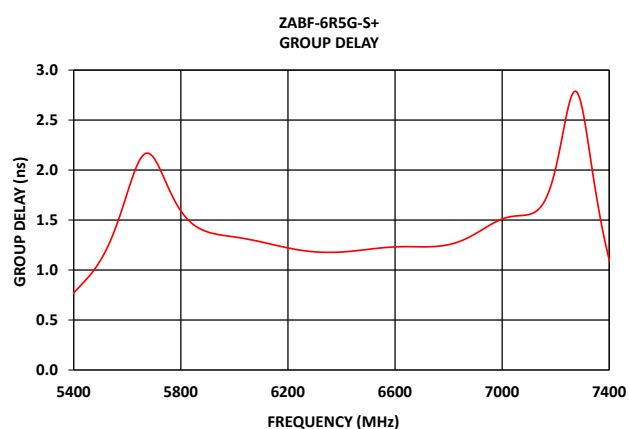
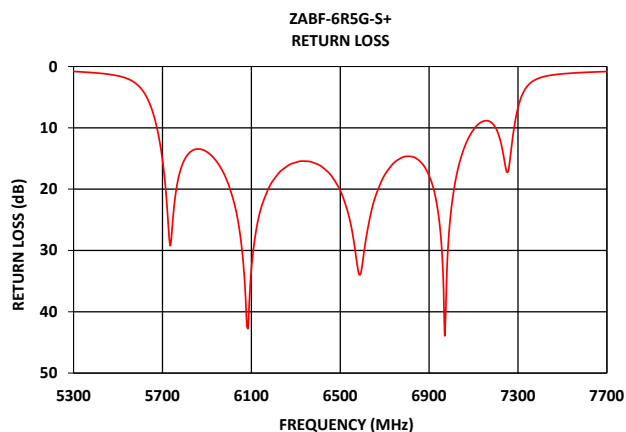
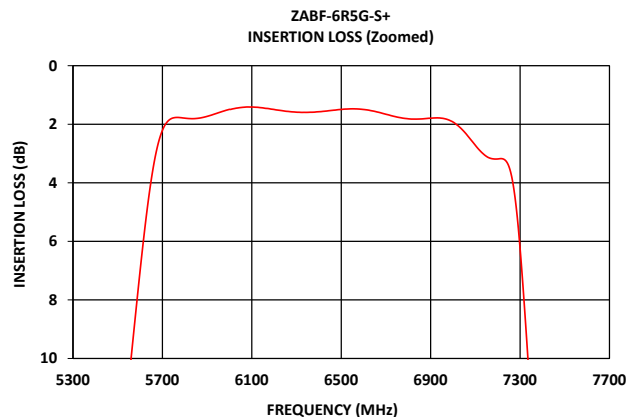
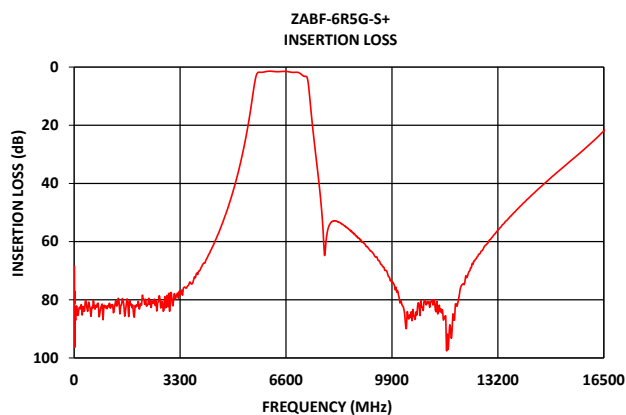
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Mini-Circuits

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TYPICAL PERFORMANCE GRAPHS AT +25°C





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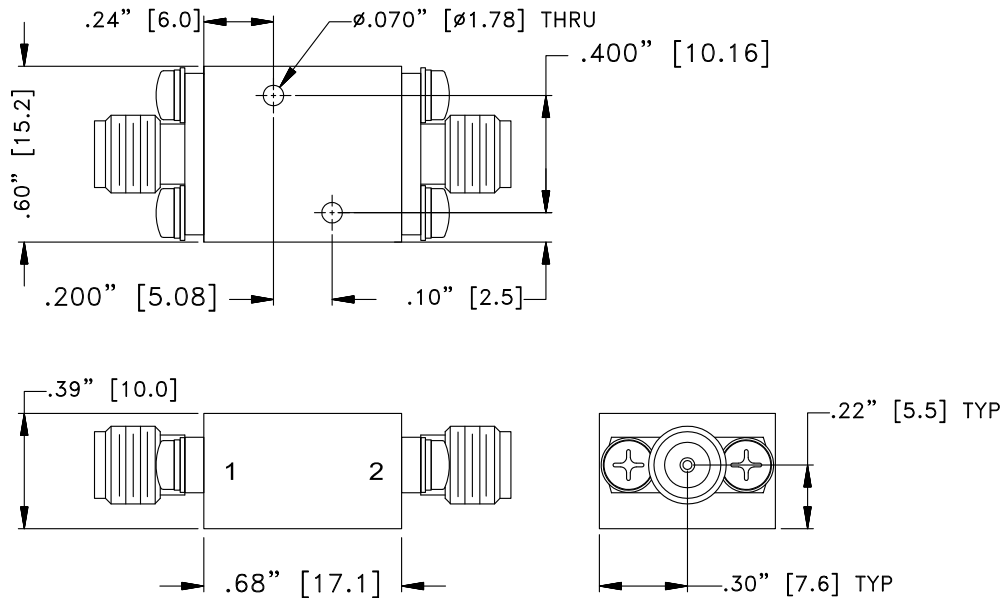
50Ω 6100 to 6900 MHz SMA Male/Female

CONNECTOR DESCRIPTION

Function	Connector
RF1 ⁵	SMA Male
RF2 ⁵	SMA Female

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

CASE STYLE DRAWING



Unit weight: 24grams

Dimensions are in inches (mm). Tolerances: 2 Pl.±.050"; 3 Pl.±.015"

PRODUCT MARKING*: ZABF-6R5G-S+

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





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Mini-Circuits

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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

Performance Data & Graphs	Data
	Graphs
	S-Parameter (S2P Files) Data Set (.zip file)
Case Style	UK3042
RoHS Status	Compliant
Environmental Ratings	ENV144

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



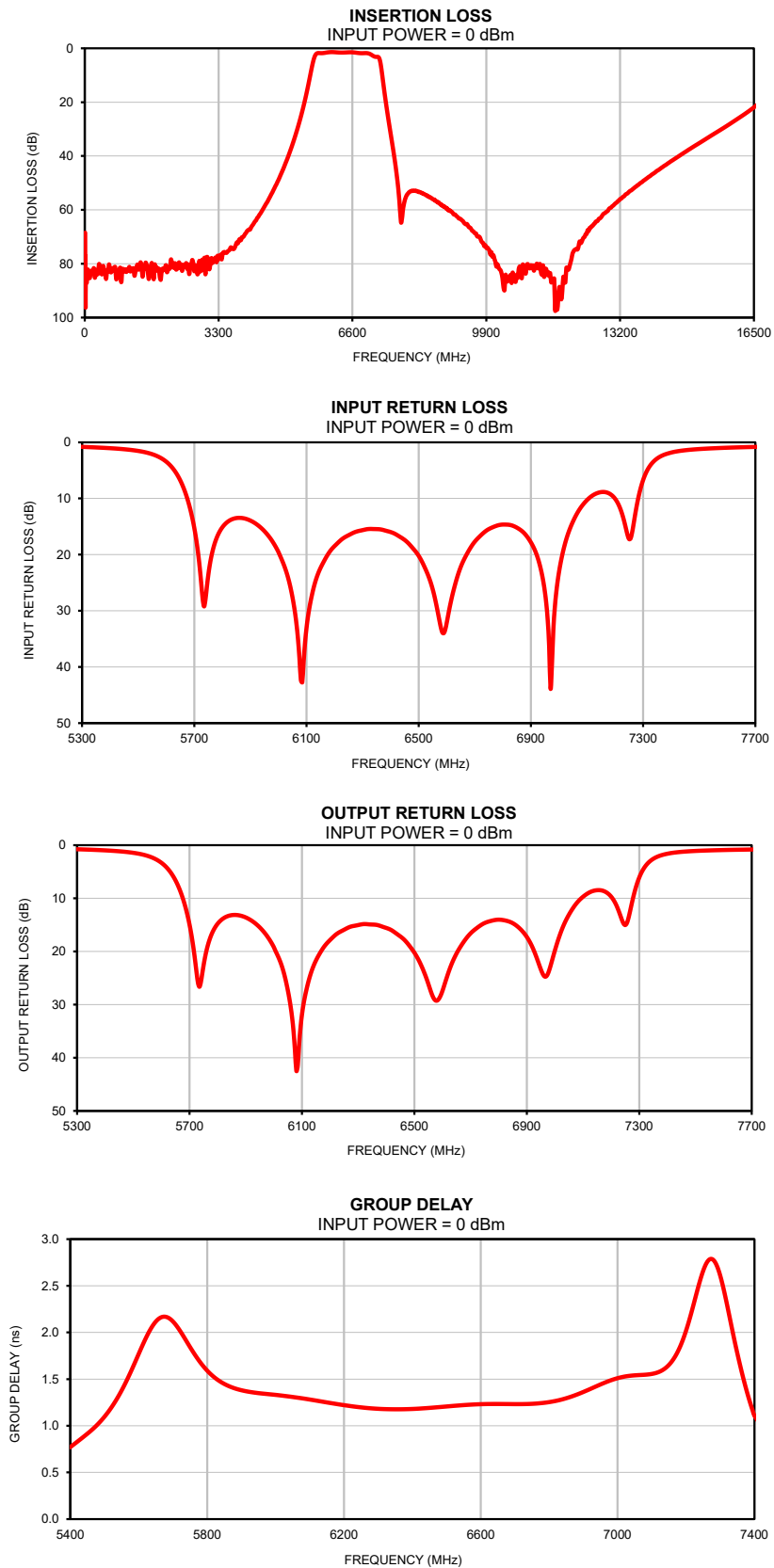
Coaxial Thin-Film Bandpass Filter

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Typical Performance Data

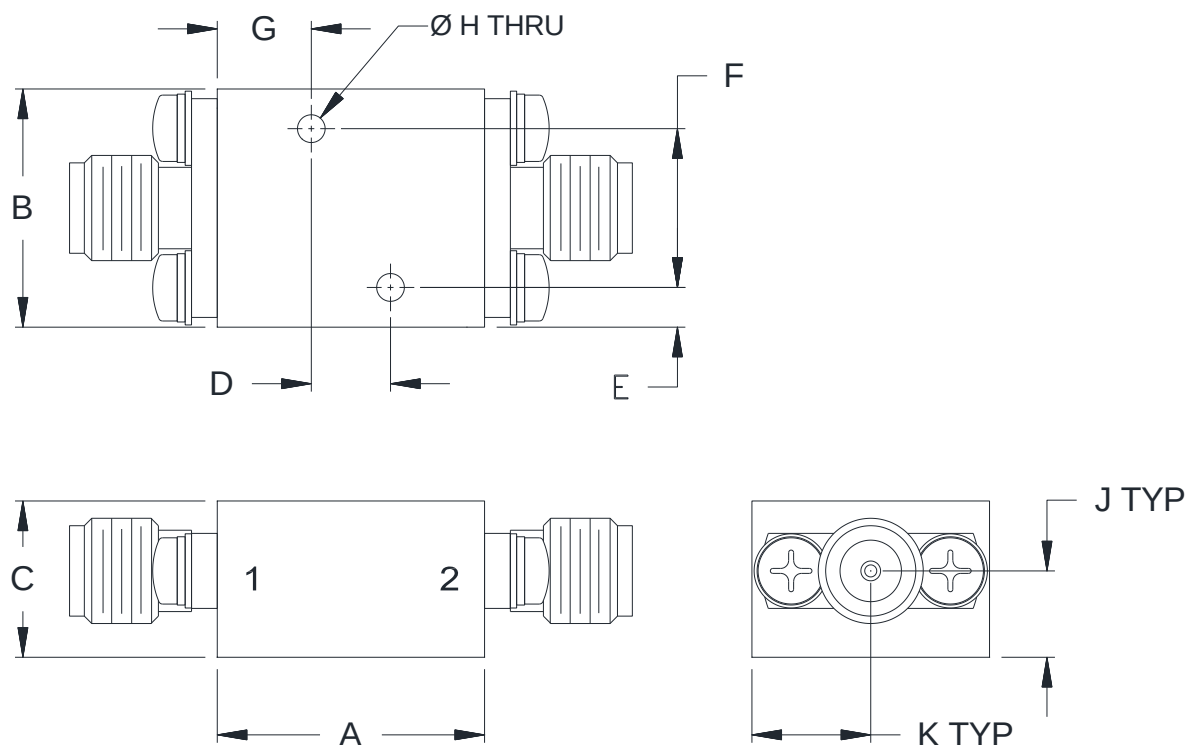
FREQ.	Insertion Loss	Input Return Loss	Output Return Loss	FREQ.	Group Delay
(MHz)	(dB)	(dB)	(dB)	(MHz)	(ns)
10	68.49	0.09	0.08	6100	1.28
20	96.33	0.11	0.11	6120	1.27
25	86.19	0.12	0.12	6140	1.26
100	85.18	0.19	0.20	6160	1.24
200	83.11	0.25	0.27	6180	1.23
400	82.86	0.32	0.34	6190	1.23
800	84.70	0.42	0.41	6200	1.22
900	86.88	0.44	0.42	6210	1.22
1000	82.14	0.46	0.42	6230	1.21
2000	80.53	0.48	0.42	6250	1.20
3000	77.64	0.34	0.33	6270	1.19
4600	54.19	0.24	0.30	6280	1.19
4800	48.08	0.32	0.37	6290	1.18
5100	36.66	0.53	0.54	6300	1.18
5405	20.82	1.06	0.99	6320	1.18
5550	10.75	2.11	2.01	6340	1.18
5670	3.03	9.22	9.08	6350	1.18
6100	1.41	33.13	31.84	6380	1.18
6200	1.50	18.48	17.83	6390	1.18
6300	1.59	15.64	15.03	6400	1.18
6500	1.49	20.21	20.24	6410	1.18
6600	1.50	32.11	27.38	6420	1.18
6700	1.66	17.69	16.58	6430	1.19
6800	1.81	14.64	14.02	6440	1.19
6900	1.79	17.82	17.28	6450	1.19
7000	1.92	23.14	19.78	6460	1.19
7150	3.10	8.86	8.47	6470	1.20
7350	11.74	2.88	2.56	6480	1.20
7430	20.69	1.54	1.36	6500	1.21
7530	30.55	1.11	1.02	6510	1.21
7600	37.20	0.96	0.91	6520	1.21
7700	48.04	0.82	0.82	6530	1.22
7800	64.80	0.72	0.75	6540	1.22
7900	55.97	0.66	0.70	6550	1.22
8000	53.41	0.61	0.66	6560	1.22
8100	52.86	0.57	0.63	6570	1.23
8200	53.10	0.53	0.61	6580	1.23
8300	53.66	0.50	0.59	6590	1.23
8400	54.42	0.49	0.56	6600	1.23
8500	55.20	0.47	0.55	6610	1.23
8600	56.13	0.46	0.53	6620	1.23
8700	57.17	0.45	0.52	6630	1.23
8800	58.07	0.44	0.50	6640	1.23
8900	59.30	0.44	0.49	6650	1.23
9000	60.18	0.44	0.47	6660	1.23
9100	61.73	0.44	0.46	6670	1.23
9200	62.74	0.44	0.45	6680	1.23
9300	63.90	0.44	0.44	6690	1.23
9400	65.38	0.44	0.43	6700	1.23
9500	66.57	0.45	0.42	6720	1.23
9600	68.36	0.46	0.41	6740	1.23
10000	76.57	0.48	0.40	6750	1.24
10500	84.15	0.53	0.42	6780	1.24
11000	80.56	0.60	0.47	6790	1.25
11500	86.91	0.67	0.53	6800	1.25
11800	84.89	0.69	0.57	6850	1.30
12000	78.28	0.72	0.59	6870	1.32
12500	66.05	0.74	0.67	6880	1.33
12800	61.38	0.74	0.72	6890	1.35
13000	58.75	0.74	0.76	6900	1.36

Typical Performance Curves



Outline Dimensions

UK3042



CASE#	A	B	C	D	E	F
UK3042	.68 (17.1)	.60 (15.2)	.39 (10.0)	.200 (5.08)	.10 (2.5)	.400 (10.16)

CASE#	G	H	J	K	WT.GRAMS
UK3042	.24 (6.0)	.070 (1.78)	.22 (5.5)	.30 (7.6)	24

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .050$; 3 Pl. $\pm .015$

Notes:

- Case material: Brass alloy.
- Case Finish:
 - Case & Cover of the units –Gold plating.
- Refer to the individual model data sheet for the type of connectors available.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 40°C, 96 hours Units may require bake-out after humidity to restore full performance.	MIL-STD-202. method 103. Condition B
Thermal Shock	-40°C to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except -40°C and +100°C