



COAXIAL

Bandpass Filter

VBFZ-3590-S+

Mini-Circuits

50Ω 3000 to 4300 MHz

THE BIG DEAL

- Good Rejection, 25dB up to 14GHz
- Low Insertion Loss
- Excellent power handling, 7W
- Temperature stable LTCC internal structure
- Rugged stainless steel unibody
- Protected by US Patent 6,943,646



Generic photo used for illustration purposes only

Model No.	VBFZ-3590-S+
Case Style	FF1145
Connectors	SMA

APPLICATIONS

- Harmonic rejection
- Transmitters/Receivers
- Lab use
- Test instrumentation

+RoHS Compliant

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

PRODUCT OVERVIEW

VBFZ-3590-S+ is a 50Ω bandpass filter built in rugged unibody construction. Covering a passband of 3000 to 4300 MHz, this model offers good matching within the passband and good rejection in the stopband. It can handle a high power of 7W with a wide operating temperature range from -55°C to 100°C.

KEY FEATURES

Feature	Advantages
7W power handling	Supports a wide range of system power requirements.
Wide stop band rejection	Ensures the harmonics are suppressed effectively.
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test and measurement applications.

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VBFZ-3590-S+
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ELECTRICAL SPECIFICATIONS AT 25°C

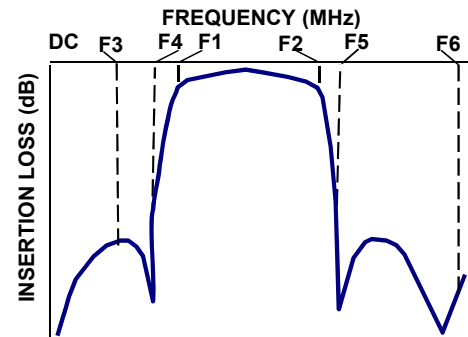
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency	—	—	—	3590	—	MHz
	Insertion Loss	F1-F2	3000 - 4300	—	—	2.4	dB
	Return Loss	F1-F2	3000 - 4300	9	18	—	dB
Stop Band, Lower	Insertion Loss	F3	2200	—	25	—	dB
		F4	2250	20	—	—	
Stop Band, Upper	Insertion Loss	F5	5950	20	—	—	dB
		F5-F6	5950 - 14000	—	25	—	

MAXIMUM RATINGS

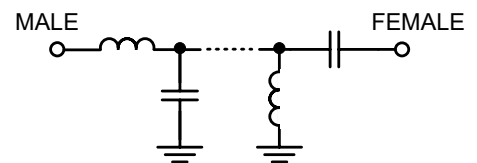
Parameter	Ratings
Operating temperature	-55°C to +100°C
Storage temperature	-55°C to +100°C
RF Power Input*	7W at 25°C

*Passband rating, derate linearly to 3W at 100°C ambient
 Permanent damage may occur if any of these limits are exceeded.

TYPICAL FREQUENCY RESPONSE



FUNCTIONAL SCHEMATIC





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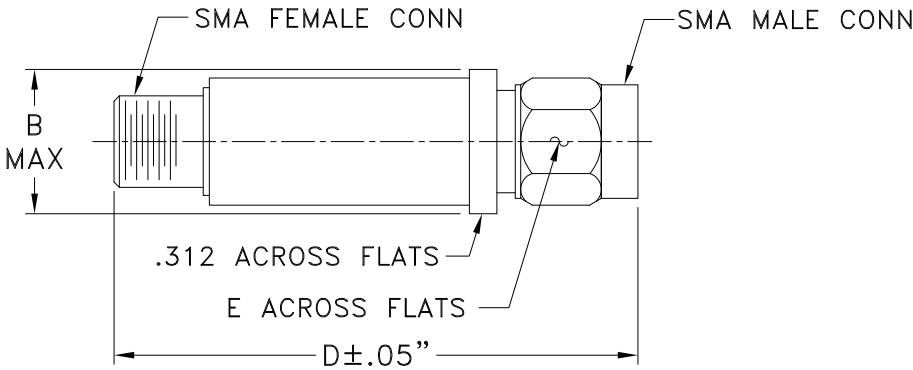
Bandpass Filter

VBFZ-3590-S+

COAXIAL CONNECTIONS

PORT 1	SMA-Male
PORT 2	SMA-Female

OUTLINE DRAWING



OUTLINE DIMENSIONS (Inches/mm)

B	D	E	wt.
.410	1.91	.312	grams
10.41	48.51	7.92	11.8

Note. Please refer to case style drawing for details



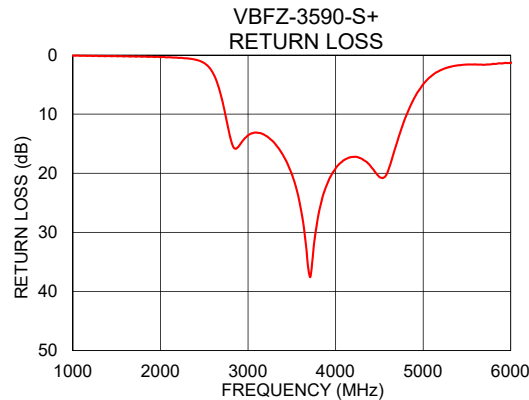
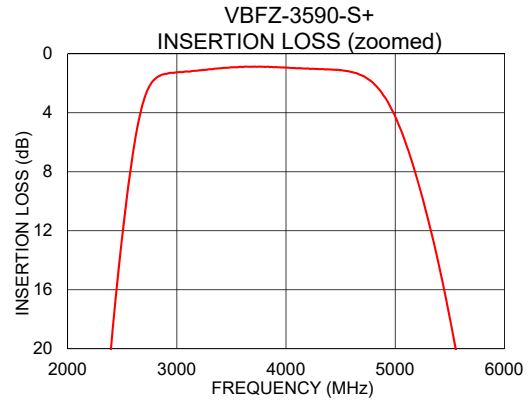
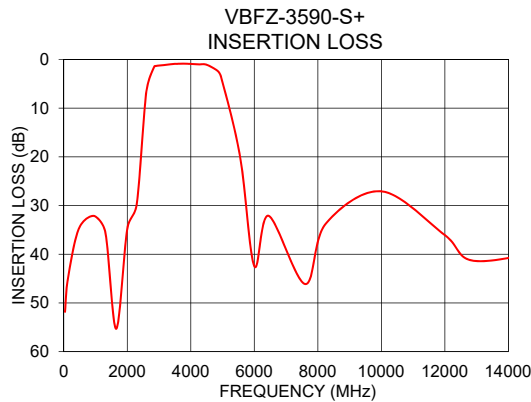
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Bandpass Filter

VBFZ-3590-S+

TYPICAL PERFORMANCE DATA AT 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)
50	51.58	0.01
1500	42.11	0.19
2200	43.33	0.47
2250	37.02	0.50
2500	12.37	1.37
3000	1.26	13.60
3590	0.89	25.04
4000	0.93	19.19
4300	1.03	17.57
4950	3.52	6.01
5580	21.01	1.59
5950	38.85	1.34
6000	42.45	1.32
10000	27.08	5.33
14000	31.63	2.05



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



Coaxial SMA Band Pass Filter

VBFZ-3590-S+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
50	51.58	0.01
1500	42.11	0.19
2200	43.33	0.47
2250	37.02	0.50
2350	24.16	0.66
2550	9.29	1.98
2650	4.57	4.79
2750	2.19	10.70
3000	1.26	13.60
3590	0.89	25.04
4300	1.03	17.57
4750	1.71	12.54
4900	2.90	7.24
5100	6.15	3.48
5300	11.21	2.03
5500	17.93	1.61
5700	24.54	1.65
5950	38.85	1.34
10000	27.08	5.33
14000	31.63	2.05

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Page 1 of 1



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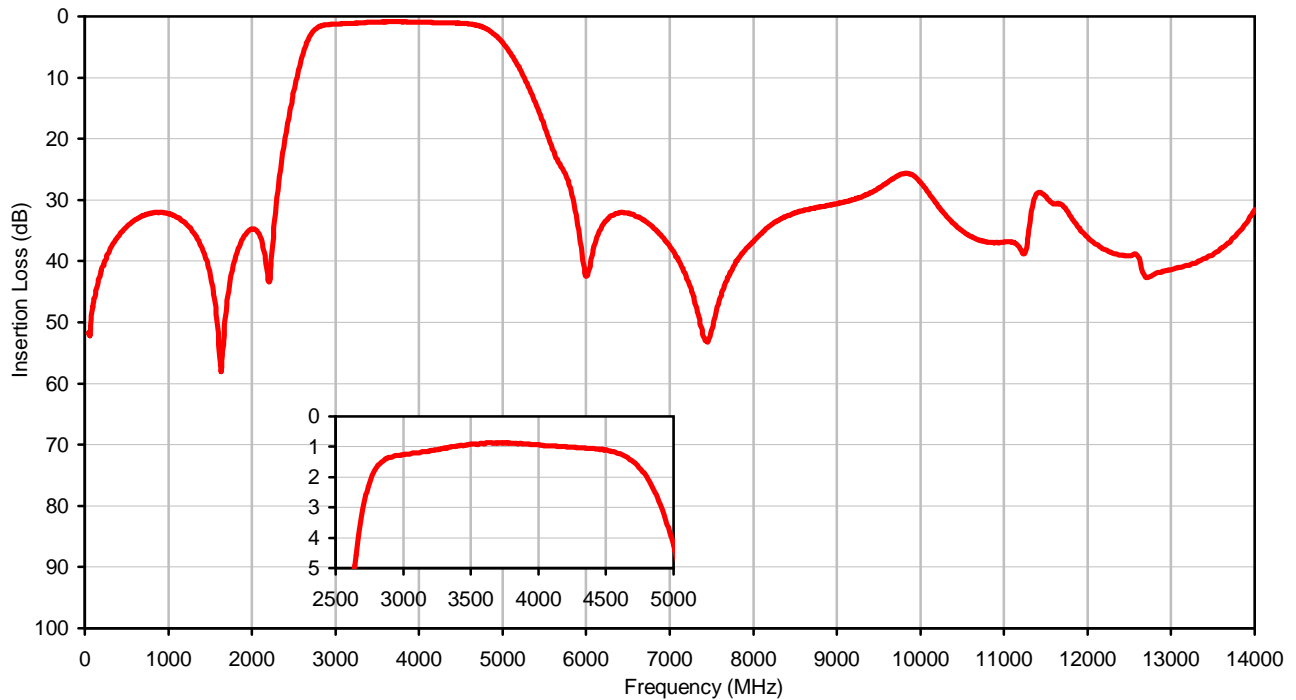


The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see

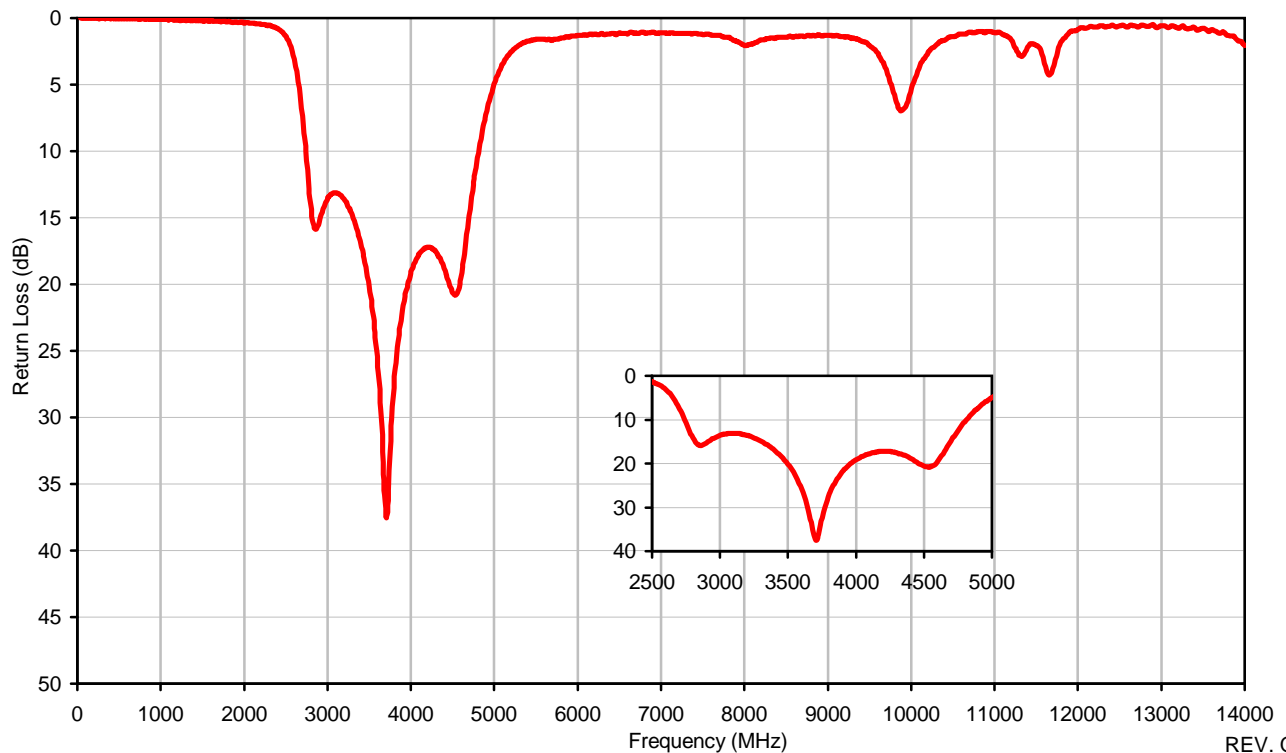


Typical Performance Curves

Insertion Loss



Return Loss



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Page 1 of 1



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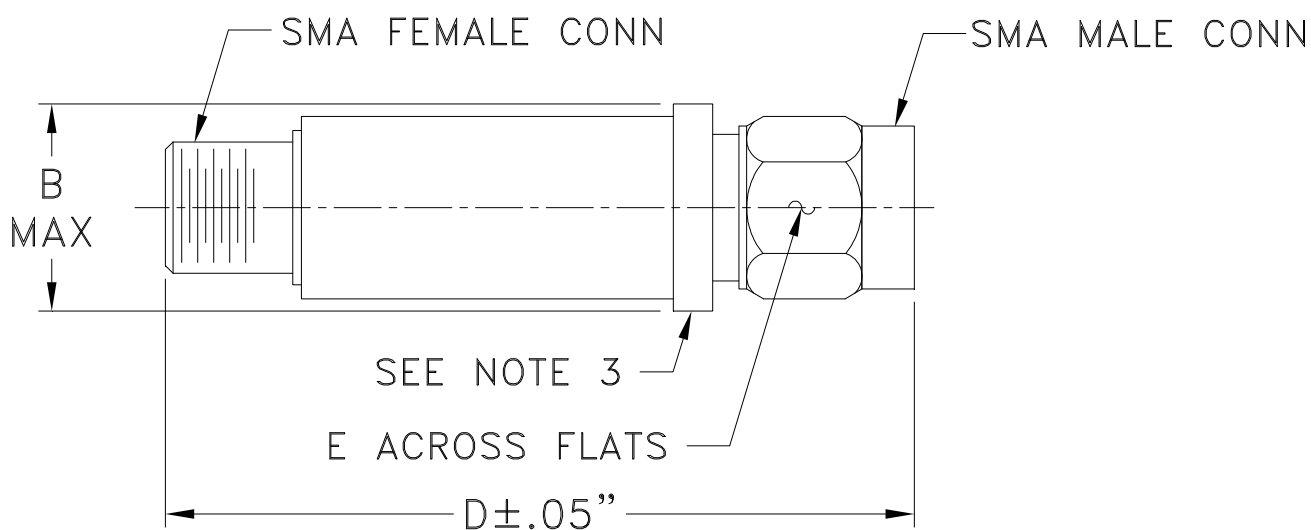


Case Style

FF

FF1145

Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF1145	--	.410 (10.41)	--	1.91 (48.51)	.312 (7.92)	11.8

Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030

Notes:

1. Case material: Stainless steel.
2. Case finish: Gold plated.
3. Round Flange may have .312 Across Flats in some models.

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ISO 9001 ISO 14001 CERTIFIED

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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	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I