

Suspended Substrate Stripline Filters and Multiplexers

50Ω DC to 40 GHz

The Big Deal

- Low insertion loss
- Ultra-wide passband width
- Fast roll-off with wide stopband
- Good power handling and temperature stability
- Passband up to 40 GHz
- Stopband up to 40 GHz



Product Overview

Mini-Circuits' Suspended Substrate Stripline filters offer low insertion loss by implementing printed circuit board suspended between two parallel ground planes, providing high Q. Low insertion loss combined with wide stopband makes them an excellent choice for wideband instruments and systems like ECM, ECCM, ELINT and ultra-broadband receivers.

Low pass, high pass, band pass, band stop, diplexer and multiplexer designs can be realized with this technology. Advanced filter design and construction can achieve stopband width greater than 6x the center frequency, and temperature stability will be better than other printed circuit realizations because the fields are mainly in the air rather than in a dielectric. The inside walls of the housing hold the circuit and prevent movement that could be caused by vibration or mechanical shock, making these designs excellent candidates for harsh operating environments.

Suspended substrate stripline filters can be realized in small form factors with high-quality, precise machining for applications where size is critical. Excellent repeatability across units is achieved through precise tuning and process control.

Key Features

Feature	Advantages
Low insertion loss	Low signal loss results in better SNR in receiver front end and better power delivery to antenna in transmitters
Fast roll-off	Higher selectivity results in better adjacent channel rejection and dynamic range
Wide stopband	Wide, spur-free stop band results in better receiver sensitivity
High power handling	Well suited for transmitter applications
Excellent temperature stability	Ensures minimal variation in electrical performance across temperature

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



Suspended substrate stripline Band Pass Filter

ZBSS-7975-S+

50Ω 7825 to 8125 MHz



Generic photo used for illustration purposes only
CASE STYLE: QD2229

Connectors Model
SMA-F ZBSS-7975-S+

Features

- Sharp roll-off
- High rejection of 50 dB typ.
- Stop band up to 15 GHz
- Narrow bandwidth
- Connectorized package and small size

Applications

- Fixed Satellite
- Mobile communications
- C-band applications

Electrical Specifications at 25°C

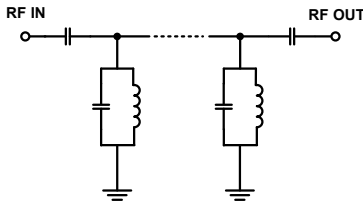
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	F _c	7975	-	2.0	-	dB
	Insertion Loss	F1-F2	7825-8125	-	2.5	3.5	dB
	VSWR	F1-F2	7825-8125	-	2.1	-	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-6900	40	50	-	dB
	VSWR	DC-F3	DC-6900	-	20	-	:1
Stop Band, Upper	Insertion Loss	F4-F5	9350-15000	40	50	-	dB
	VSWR	F4-F5	9350-15000	-	20	-	:1

Maximum Ratings

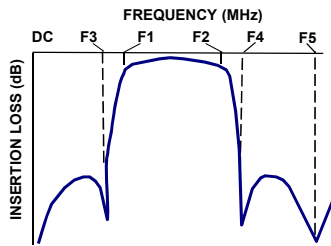
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	3W max.

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

Functional Schematic



Typical Frequency Response

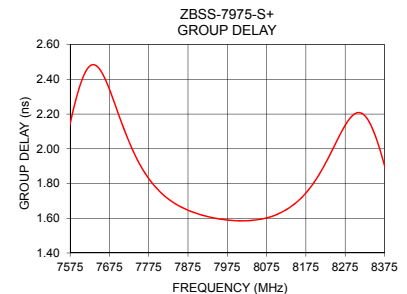
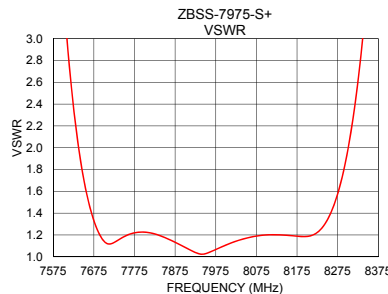
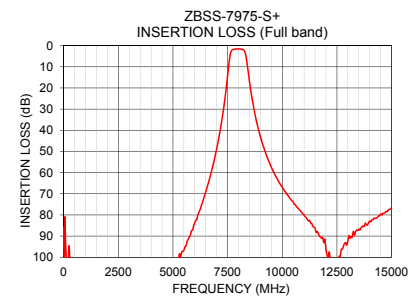
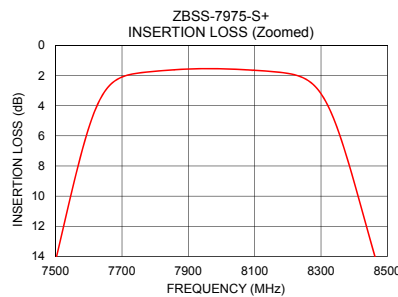


Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10	85.98	34324.80	7825	1.71
100	95.68	30921.64	7840	1.69
1000	120.56	832.33	7855	1.67
5000	106.04	118.10	7870	1.65
6900	53.51	79.75	7885	1.64
7300	30.91	35.71	7900	1.63
7430	20.66	20.47	7915	1.62
7500	14.28	12.22	7930	1.61
7650	2.99	1.71	7945	1.60
7825	1.67	1.21	7960	1.59
7975	1.54	1.07	7975	1.59
8125	1.69	1.20	7990	1.59
8300	3.21	1.98	8005	1.59
8500	16.90	14.38	8020	1.59
8550	20.50	18.96	8035	1.59
8720	30.77	36.32	8050	1.59
9000	43.05	72.80	8065	1.60
9350	53.79	120.35	8080	1.60
10000	66.92	136.81	8100	1.62
15000	76.52	57.51	8125	1.65

+RoHS Compliant

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



Notes

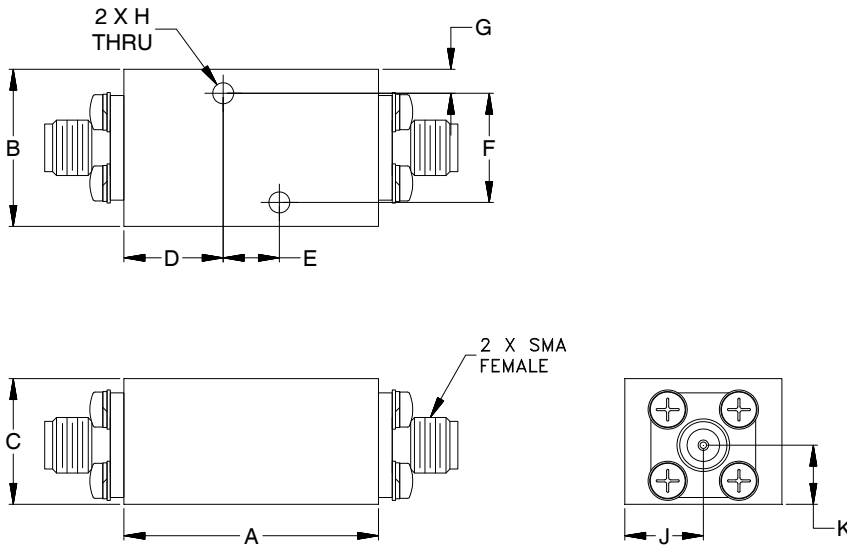
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Coaxial Connections

PORT - 1	SMA FEMALE
PORT - 2	SMA FEMALE

Outline Drawing



Outline Dimensions ($\frac{\text{inch}}{\text{mm}}$)

A	B	C	D	E	F
1.22	.75	.60	.47	.268	.521
30.86	19.05	15.24	12.03	6.81	13.23
G	H	J	K	Wt.	
.11	.100	.38	.28	grams	
2.91	2.54	9.53	7.18	70	

Note: Please refer to case style drawing for details

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