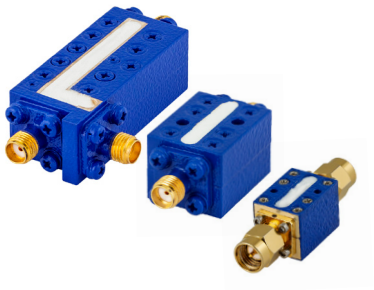
Suspended Substrate Stripline Filters and Multiplexers

50Ω DC to 26 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 26 GHz
- Stopband up to 26.5 GHz can extend 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

Suspended substrate stripline

High Pass Filter

ZHSS-8G+

50Ω 8000 to 24000 MHz

CASE STYLE: RP2464

Connectors	Model
SMA-M	ZHSS-8G-S+

Features

- Wider passband
- Low insertion loss
- Sharp rejection
- Connectorized package

Applications

- Test and measurements
- Satellite communications
- Transmitter / Receiver

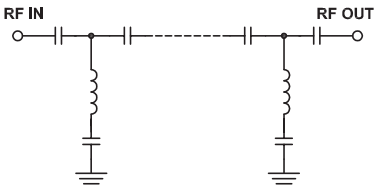
Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Stop Band	Rejection Loss	DC-F1	DC-4000	60	85	-	dB
		F1-F2	4000-5300	40	50	-	dB
		F2-F3	5300-5800	20	30	-	dB
	VSWR	DC-F3	DC-5800	-	20	-	:1
Pass Band	Insertion Loss	F4-F5	8000-24000	-	1	2	dB
	VSWR	F4-F5	8000-24000	-	2	-	:1

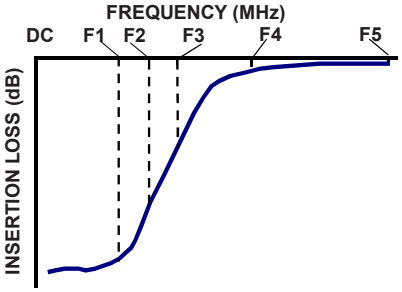
Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	3 W @ 25°C

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

Functional Schematic



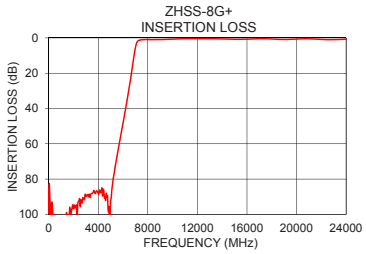
Typical Frequency Response

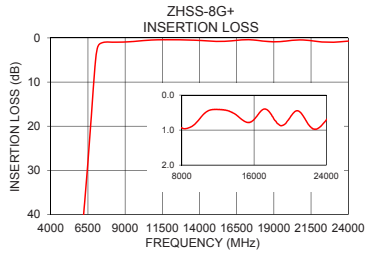


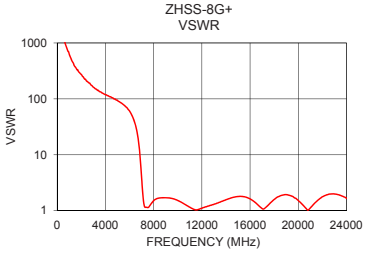
+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

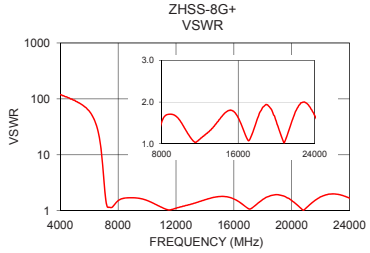
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	99.20	19157.23
100	90.65	6188.96
1000	101.93	629.55
2500	91.16	205.38
4000	88.11	119.10
5300	76.20	85.04
5800	55.95	68.97
6000	48.29	60.82
6450	30.19	36.74
6650	21.37	23.94
6900	9.62	8.08
7050	3.93	2.80
7500	1.04	1.14
8000	0.94	1.51
9000	0.91	1.71
10000	0.67	1.53
12500	0.42	1.21
15000	0.76	1.80
20000	0.64	1.53
24000	0.71	1.68









Notes
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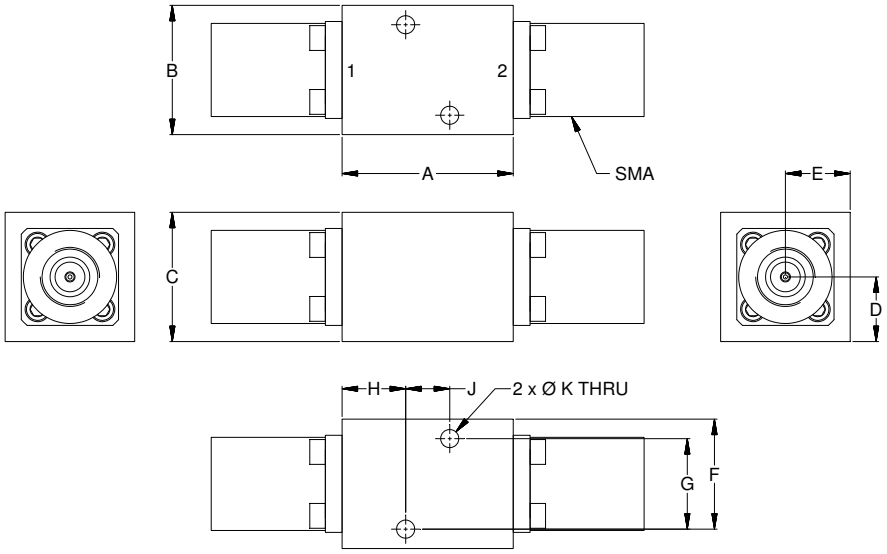
Coaxial Connections

PORT - 1	SMA-Male
PORT - 2	SMA-Male

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	Wt.
Max	**Max**	**Max**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	grams
.70	**.50**	**.50**	**.25**	**.25**	**.43**	**.350**	**.25**	**.170**	**.065**	30
17.78	12.70	12.70	6.35	6.35	10.92	8.89	6.35	4.32	1.65	

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