

Coaxial-Ceramic Resonator Filters and Multiplexers

50Ω

DC to 6 GHz



The Big Deal

- Low insertion loss with excellent power handling
- Passbands up to 6 GHz
- Fractional bandwidth from <1 to 25%
- Excellent temperature stability
- Rugged construction to handle demanding environmental conditions

Product Overview

Mini-Circuits' *Coaxial-Ceramic Resonator filters* offer low insertion loss in very small form factors, using ceramic material with high dielectric constant and superior Q factor. Bandpass and bandstop filters, diplexer and multiplexer designs can be constructed using this technology. Low insertion loss combined with excellent power handling makes these filters well suited for transmitter and receiver signal chains. Advanced filter design and construction can achieve stopband width greater than 3x the center frequency

All our coaxial-ceramic resonator filters are built with rugged construction. 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 signal chain
Fast roll-off	Higher selectivity results in better adjacent channel rejection and dynamic range
Wide stop band	Wide spur-free stopband results in better receiver sensitivity
Excellent power handling	Well suited for transmitter applications
Rugged Construction	These filter assemblies have been qualified over a wide range of thermal, mechanical and environmental conditions including withstanding the stress of extensive solder reflow cycles
Small Size	Very well suited for high performance applications where size is a constraint.
Temperature stability	Very minimal change in electrical performance across temperature makes these filters suitable for a wide range of operating conditions.

Notes

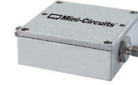
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
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Bandpass Filter

ZCBP6-505-S+

50Ω 490 to 520 MHz



Generic photo used for illustration purposes only
CASE STYLE: CC1764

Features

- Low insertion loss, 1.2dB typ.
- High rejection, 75dB typ.
- Connectorized package

Applications

- Broadcasting
- Land mobile service
- Public safety communication

Electrical Specifications at 25°C

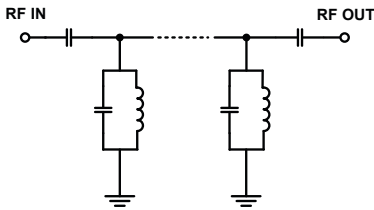
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	—	—	505	—	MHz	
	Insertion Loss	F1-F2	490 - 520	—	1.23	1.7	dB
	VSWR	F1-F2	490 - 520	—	1.22	1.67	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 400	65	79	—	dB
		F3-F4	400 - 466	20	28	—	dB
Stop Band, Upper	Insertion Loss	F5-F6	542 - 640	20	28	—	dB
		F6-F7	640 - 950	55	74	—	dB

Maximum Ratings

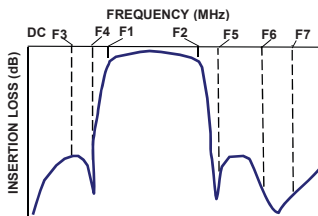
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input*	20 W at 25°C

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

Functional Schematic



Typical Frequency Response

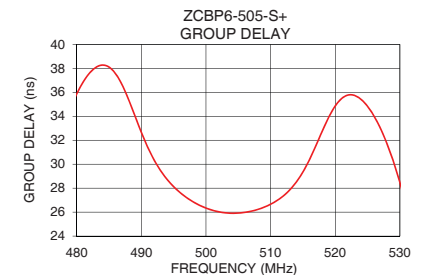
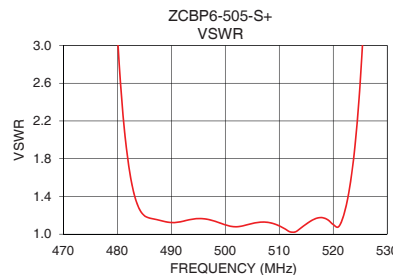
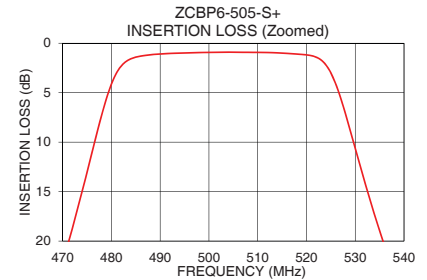
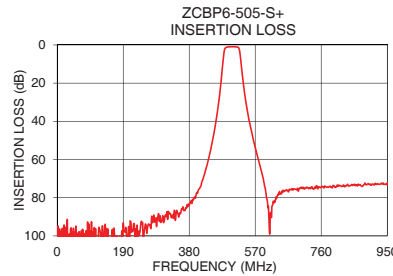


Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nSec)
0.5	95.51	1225.35	490	32.66
10.9	109.05	36418.82	491	31.40
100.6	101.07	2488.79	492	30.33
400.0	78.32	177.14	493	29.44
466.0	28.42	41.18	494	28.72
471.0	20.46	26.27	495	28.12
481.0	3.05	2.31	496	27.63
490.0	1.08	1.12	498	26.86
500.0	0.92	1.10	500	26.34
505.0	0.91	1.11	502	26.02
510.0	0.93	1.09	505	25.92
520.0	1.18	1.10	508	26.22
525.0	3.00	2.61	510	26.66
536.0	20.46	39.94	511	26.97
542.0	28.45	67.39	512	27.37
640.0	76.74	173.29	513	27.88
700.0	74.62	158.94	514	28.53
800.0	74.62	132.51	516	30.37
900.0	73.13	111.70	518	32.77
950.0	73.22	101.19	520	34.87

+RoHS Compliant

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



Notes

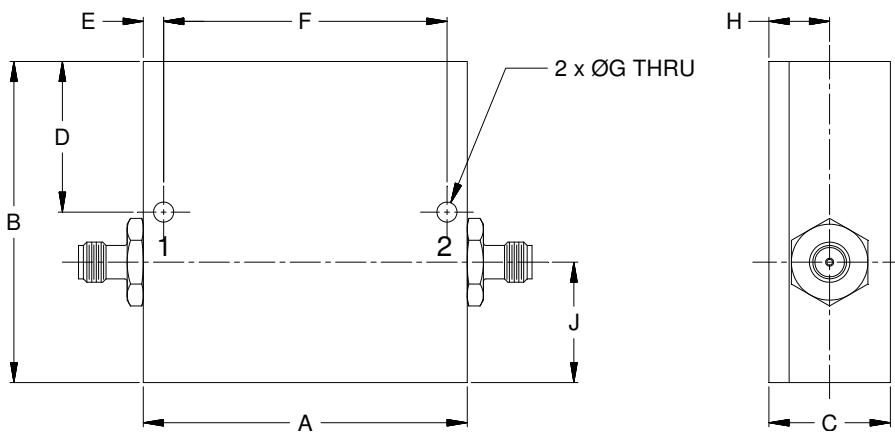
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Coaxial Connections

PORT - 1	SMA-FEMALE
PORT - 2	SMA-FEMALE

Outline Drawing



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

A	B	C	D	E
2.000	2.000	.750	.938	.125
50.80	50.80	19.05	23.83	3.18

F	G	H	J	Wt.
1.750	.125	.375	.750	grams
44.45	3.18	9.53	19.05	116

Note: Please refer to case style drawing for details

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