# Surface Mount **Coaxial-Ceramic Resonator Filters and Multiplexers**

DC to 6 GHz 50Ω

### The Big Deal

- Low insertion loss with excellent power handling
- · Passbands up to 6 GHz
- Fractional bandwidth from <1 to 25%</li>
- Low profile designs with min. height of 0.120"
- 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 as high as 20 GHz.

All our coaxial-ceramic resonator filters are built with rugged construction, qualified to withstand multiple demanding reflow cycles. 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 environ- mental 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.			

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

A. Performance and quality attributes and contained in this specification document are internet of the minimum processing stated in this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established tests performance criteria and measurement instructions.
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# Surface Mount **Bandpass Filter**

50Ω 1087 to 1093 MHz

#### **Features**

- · Excellent roll-off
- · Excellent rejection
- · Good passband IL
- · Cavity filter standard specs in compact profile

#### **Applications**

- Traffic Alert and Collision Avoidance System (TCAS)
- Military IFF

#### **Functional Schematic**



#### **Typical Frequency Response**



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

#### Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Тур.	Max.	Unit
Pass Band	Center Frequency	-	-	-	1090	-	MHz
	Insertion Loss	F1-F2	1087 - 1093	-	1.9	2.5	dB
	VSWR	F1-F2	1087 - 1093	-	1.5	1.92	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 1000	70	80	-	dB
		F3-F4	1000 - 1068	20	30	-	dB
Stop Band, Upper	Insertion Loss	F5-F6	1112 - 1170	20	30	-	dB
		F6-F7	1170 - 1800	60	67	-	dB
		F7-F8	1800 - 2000	-	40	-	dB

Maximum Ratings					
Operating Temperature	-40°C to 85°C				
Storage Temperature	-55°C to 100°C				
RF Power Input	10 W max. at 25°C				

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

#### Typical Performance Data at 25°C Frequency Insertion Loss VSWR Frequency Group Delay (MHz) (dB) (:1) (MHz) (ns) 1 98 78 356.16 1087.0 50 44 49.49 105.21 348.43 1088.5 10 100 102.26 429.02 1088.8 49.40 1000 95.69 245.63 1089.0 49.34 1068 34.50 48.27 1089.3 49.31 1074 21.32 22.24 1089.5 49.31 1080 3.81 1.89 1089.8 49.35 1087 1.76 1.06 1090.0 49.45 1088 1.71 1.08 1090.3 49.55 1090.5 1090 1.70 1.18 49.70 1.71 1090.8 1091 1.17 49.91 1093 1.80 1.09 1091.0 50.14 3.56 1091.3 50.42 1097 2.15 1104 20.77 29.27 1091.5 50.72 1112 35 59 84.98 1091.8 51.10 78.90 1170 337.23 1092.0 51.50 242.55 79.40 51.97 1500 1092.3 1800 71.14 219.56 1092 5 52 47 1900 68.08 218.91 1092.8 53.05 2000 194.57 1093.0 64.22 53.69



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### Mini-Circuits

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# CBP12-1090BE+



Generic photo used for illustration purposes only CASE STYLE: UP2912

# CBP12-1090BE+

#### **Pad Connections**

INPUT	1
OUTPUT	17
GROUND	2-16, 18-26



44.58

47.50

INDEX

**Outline Drawing** 

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

54.36 Note: Please refer to case style drawing for details

21.34

16.51

14.48

14.10

45.29

40

49.53

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