

Surface Mount 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 3 to 25%
- 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. Custom integrated assembly with LNA in greatly simplifying system integration. They 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 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

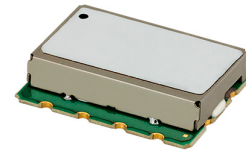
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Surface Mount Bandpass Filter

50 Ω 5725 to 5875 MHz

CBP-5800AG+



CASE STYLE: RZ2511

Features

- Fast roll-off
- Low passband IL
- Miniature shielded package

Applications

- Industrial scientific and Medical applications
- Test and Measurement
- WIFI
- WLAN
- Harmonic rejection

Electrical Specifications at 25°C

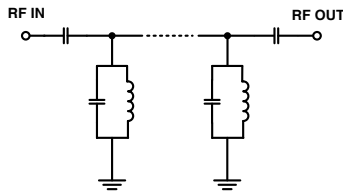
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	-	-	-	5800	-	MHz
	Insertion Loss	F1-F2	5725-5875	-	3	4.0	dB
	VSWR	F1-F2	5725-5875	-	1.92	2.32	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC-5100	20	30	-	dB
	VSWR	DC-F3	DC-5100	-	20	-	:1
Stop Band, Upper	Insertion Loss	F4-F5	6250-7300	20	30	-	dB
		F5-F6	7300-18000	-	10	-	dB
	VSWR	F4-F6	6250-18000	-	20.0	-	:1

Maximum Ratings

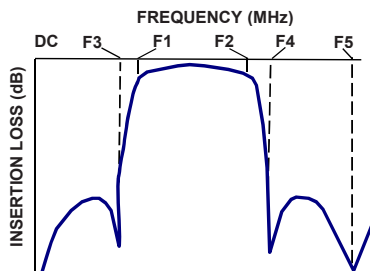
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1W Max.

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

Functional Schematic



Typical Frequency Response

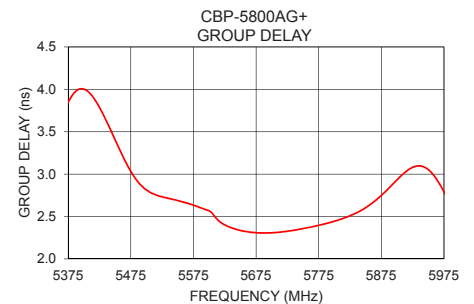
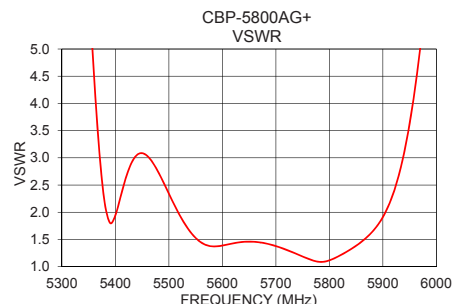
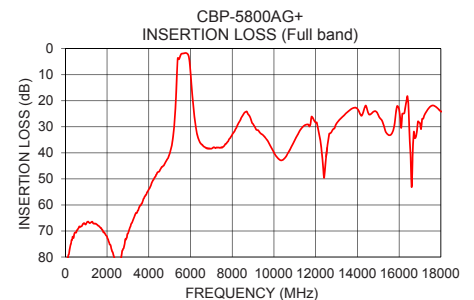
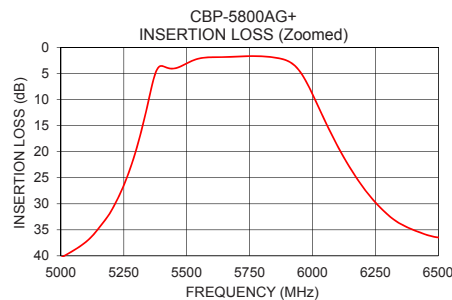


+RoHS Compliant

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)	Frequency (MHz)	Group Delay (ns)
10	88.88	974.33	5725	2.33
2500	84.50	54.46	5730	2.33
5100	37.30	20.86	5740	2.34
5210	30.49	17.62	5750	2.36
5300	19.48	12.88	5760	2.37
5350	9.80	6.16	5770	2.39
5400	3.53	1.95	5780	2.40
5725	1.68	1.29	5790	2.42
5800	1.69	1.12	5800	2.44
5875	2.15	1.59	5810	2.47
5925	3.29	2.51	5815	2.48
6000	8.96	7.96	5820	2.49
6120	20.71	18.83	5825	2.51
6250	29.73	22.40	5830	2.52
6260	30.26	22.51	5835	2.54
7300	37.98	12.39	5840	2.56
7500	37.97	10.15	5845	2.58
10000	39.86	17.80	5850	2.60
16400	18.29	3.58	5855	2.63
18000	24.10	3.51	5875	2.75



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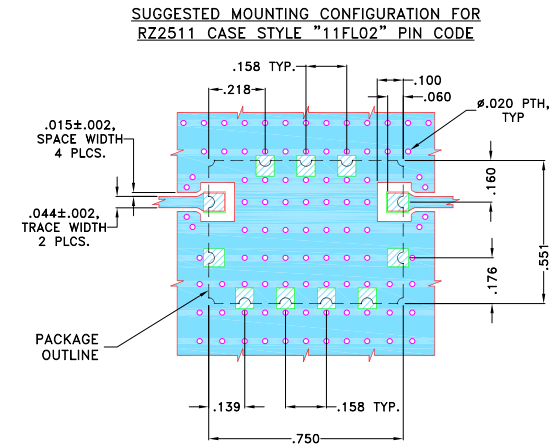
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Page 2 of 3

Pad Connections

INPUT	1
OUTPUT	8
GROUND	2,3,4,5,6,7,9,10,11

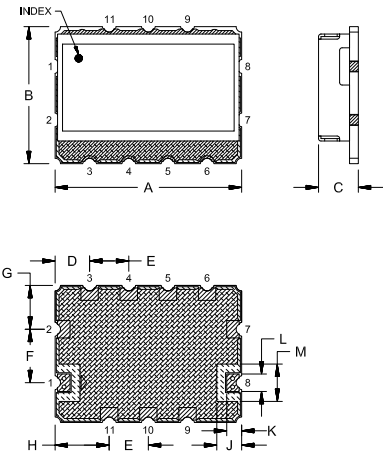
Demo Board MCL P/N: TB-984+
Suggested PCB Layout (PL-581)



- NOTES:
- 1. TRACE WIDTH IS SHOWN FOR ROGERS (R04350B) WITH DIELECTRIC THICKNESS .023"±.002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

-  DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
-  DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F	G	H	J	K	L
.750	.551	.175	.139	.158	.215	.176	.218	.100	.060	.070
19.05	14.00	4.45	3.52	4.00	5.46	4.48	5.52	2.54	1.52	1.78
M	N	P	Q	R	S	T	U	V	Wt.	
.150	.238	.215	.159	.431	.630	.790	.080	.591	grams	
3.81	6.03	5.46	4.03	10.95	16.00	20.07	2.03	15.02	grams	2.0

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