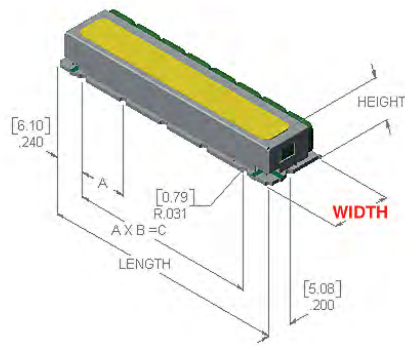


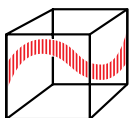
# ■ Surface Mount/Leadless – S12

$$\text{Width (Inches)} = \frac{2951}{f_0 \text{ (MHz)} \times \sqrt{\text{dielectric constant}}}$$



Res. Profile	Sections	Height		Length		A		B	C	
		Inches	mm	Inches	mm	Inches	mm		Inches	mm
3 mm	2	0.170	4.32	0.330	8.38	**	**	1	**	**
3 mm	3	0.170	4.32	0.450	11.43	**	**	1	**	**
3 mm	4	0.170	4.32	0.570	14.48	**	**	1	**	**
3 mm	5	0.170	4.32	0.690	17.53	0.210	5.33	1	0.210	5.33
3 mm	6	0.170	4.32	0.810	20.57	0.330	8.38	1	0.330	8.38
3 mm	7	0.170	4.32	0.930	23.62	0.450	11.43	1	0.450	11.43
3 mm	8	0.170	4.32	1.050	26.67	0.285	7.24	2	0.570	14.48
4 mm	2	0.210	5.33	0.410	10.41	**	**	1	**	**
4 mm	3	0.210	5.33	0.570	14.48	**	**	1	**	**
4 mm	4	0.210	5.33	0.730	18.54	0.250	6.35	1	0.250	6.35
4 mm	5	0.210	5.33	0.890	22.61	0.410	10.41	1	0.410	10.41
4 mm	6	0.210	5.33	1.050	26.67	0.285	7.24	2	0.570	14.48
4 mm	7	0.210	5.33	1.210	30.73	0.365	9.27	2	0.730	18.54
4 mm	8	0.210	5.33	1.370	34.80	0.445	11.30	2	0.890	22.61
5 mm	2	0.250	6.35	0.490	12.45	**	**	1	**	**
5 mm	3	0.250	6.35	0.690	17.53	0.210	5.33	1	0.210	5.33
5 mm	4	0.250	6.35	0.890	22.61	0.410	10.41	1	0.410	10.41
5 mm	5	0.250	6.35	1.090	27.69	0.305	7.75	2	0.610	15.49
5 mm	6	0.250	6.35	1.290	32.77	0.405	10.29	2	0.810	20.57
5 mm	7	0.250	6.35	1.490	37.85	0.337	8.55	3	1.010	25.65
5 mm	8	0.250	6.35	1.690	42.93	0.403	10.24	3	1.210	30.73
6 mm	2	0.290	7.37	0.570	14.48	**	**	1	**	**
6 mm	3	0.290	7.37	0.810	20.57	0.330	8.38	1	0.330	8.38
6 mm	4	0.290	7.37	1.050	26.67	0.285	7.24	2	0.570	14.48
6 mm	5	0.290	7.37	1.290	32.77	0.405	10.29	2	0.810	20.57
6 mm	6	0.290	7.37	1.530	38.86	0.350	8.89	3	1.050	26.67
6 mm	7	0.290	7.37	1.770	44.96	0.430	10.92	3	1.290	2.77
6 mm	8	0.290	7.37	2.010	51.05	0.383	9.72	4	1.530	38.86
8 mm	2	0.370	9.40	0.730	18.54	0.250	6.35	1	0.250	6.35
8 mm	3	0.370	9.40	1.050	26.67	0.285	7.24	2	0.570	14.48
8 mm	4	0.370	9.40	1.370	34.80	0.445	11.30	2	0.890	22.61
8 mm	5	0.370	9.40	1.690	42.93	0.403	10.24	3	1.210	30.73
8 mm	6	0.370	9.40	2.010	51.05	0.383	9.72	4	1.530	38.86
8 mm	7	0.370	9.40	2.330	59.18	0.463	11.75	4	1.850	46.99
8 mm	8	0.370	9.40	2.650	67.31	0.434	11.02	5	2.170	55.12
10 mm	2	0.450	11.43	0.890	22.61	0.410	10.41	1	0.410	10.41
10 mm	3	0.450	11.43	1.290	32.77	0.405	10.29	2	0.810	20.57
10 mm	4	0.450	11.43	1.690	42.93	0.403	10.24	3	1.210	30.73
10 mm	5	0.450	11.43	2.090	53.09	0.403	10.22	4	1.610	40.89
10 mm	6	0.450	11.43	2.490	63.25	0.402	10.21	5	2.010	51.05
10 mm	7	0.450	11.43	2.890	73.41	0.482	12.24	5	2.410	61.21
10 mm	8	0.450	11.43	3.290	83.57	0.468	11.90	6	2.810	71.37
12 mm	2	0.530	13.46	1.050	26.67	0.285	7.24	2	0.570	14.48
12 mm	3	0.530	13.46	1.530	38.86	0.350	8.89	3	1.050	26.67
12 mm	4	0.530	13.46	2.010	51.05	0.383	9.72	4	1.530	38.86
12 mm	5	0.530	13.46	2.490	63.25	0.402	10.21	5	2.010	51.05
12 mm	6	0.530	13.46	2.970	75.44	0.498	12.65	5	2.490	63.25
12 mm	7	0.530	13.46	3.450	87.63	0.495	12.57	6	2.970	75.44
12 mm	8	0.530	13.46	3.930	99.82	0.493	12.52	7	3.450	87.63
18 mm	2	0.770	19.56	1.530	38.86	0.350	8.89	3	1.050	26.67
18 mm	3	0.770	19.56	2.250	57.15	0.443	11.24	4	1.770	44.96
18 mm	4	0.770	19.56	2.970	75.44	0.498	12.65	5	2.490	63.25
18 mm	5	0.770	19.56	3.690	93.73	0.459	11.65	7	3.210	81.53
18 mm	6	0.770	19.56	4.410	112.01	0.491	12.48	8	3.930	99.82
18 mm	7	0.770	19.56	5.130	130.30	0.465	11.81	10	4.650	118.11
18 mm	8	0.770	19.56	5.850	148.59	0.488	12.40	11	5.370	136.40

For other resonator profiles and connectors, please contact factory.



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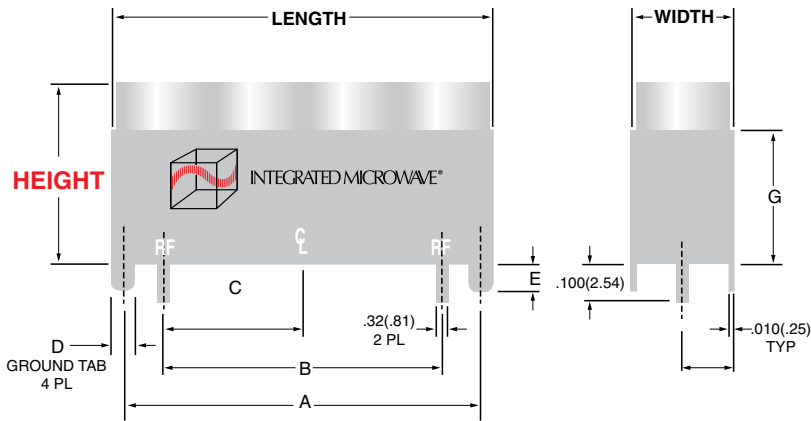


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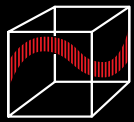
## Vertical PC Mount – P08

# Package Styles



$$\text{Height (Inches)} = \frac{2951}{f_O \text{ (MHz)} \times \sqrt{\text{dielectric constant}}}$$

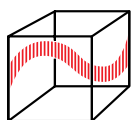
Res. Profile	Sections	Length		Width	
		Inches	mm	Inches	mm
3 mm	2	0.260	6.60	0.150	3.81
3 mm	3	0.380	9.65	0.150	3.81
3 mm	4	0.500	12.70	0.150	3.81
3 mm	5	0.620	15.75	0.150	3.81
3 mm	6	0.740	18.80	0.150	3.81
3 mm	7	0.860	21.84	0.150	3.81
3 mm	8	0.980	24.89	0.150	3.81
4 mm	2	0.340	8.64	0.190	4.83
4 mm	3	0.500	12.70	0.190	4.83
4 mm	4	0.660	16.76	0.190	4.83
4 mm	5	0.820	20.83	0.190	4.83
4 mm	6	0.980	24.89	0.190	4.83
4 mm	7	1.140	28.96	0.190	4.83
4 mm	8	1.300	33.02	0.190	4.83
5 mm	2	0.420	10.67	0.230	5.84
5 mm	3	0.620	15.75	0.230	5.84
5 mm	4	0.820	20.83	0.230	5.84
5 mm	5	1.020	25.91	0.230	5.84
5 mm	6	1.220	30.99	0.230	5.84
5 mm	7	1.420	36.07	0.230	5.84
5 mm	8	1.620	41.15	0.230	5.84
6 mm	2	0.500	12.70	0.270	6.86
6 mm	3	0.740	18.80	0.270	6.86
6 mm	4	0.980	24.89	0.270	6.86
6 mm	5	1.220	30.99	0.270	6.86
6 mm	6	1.460	37.08	0.270	6.86
6 mm	7	1.700	43.18	0.270	6.86
6 mm	8	1.940	49.28	0.270	6.86
8 mm	2	0.660	16.76	0.350	8.89
8 mm	3	0.980	24.89	0.350	8.89
8 mm	4	1.300	33.02	0.350	8.89
8 mm	5	1.620	41.15	0.350	8.89
8 mm	6	1.940	49.28	0.350	8.89
8 mm	7	2.260	57.40	0.350	8.89
8 mm	8	2.580	65.53	0.350	8.89
10 mm	2	0.820	20.83	0.430	10.92
10 mm	3	1.220	30.99	0.430	10.92
10 mm	4	1.620	41.15	0.430	10.92
10 mm	5	2.020	51.31	0.430	10.92
10 mm	6	2.420	61.47	0.430	10.92
10 mm	7	2.820	71.63	0.430	10.92
10 mm	8	3.220	81.79	0.430	10.92
12 mm	2	0.980	24.89	0.510	12.95
12 mm	3	1.460	37.08	0.510	12.95
12 mm	4	1.940	49.28	0.510	12.95
12 mm	5	2.420	61.47	0.510	12.95
12 mm	6	2.900	73.66	0.510	12.95
12 mm	7	3.380	85.85	0.510	12.95
12 mm	8	3.860	98.04	0.510	12.95



# Ceramic Products

A		B		C		D		E		F		G	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
0.200	5.08	0.120	3.05	0.060	1.52	0.060	1.52	0.070	1.78	0.070	1.78	0.275	6.99
0.320	8.13	0.240	6.10	0.120	3.05	0.060	1.52	0.070	1.78	0.070	1.78	0.275	6.99
0.440	11.18	0.360	9.14	0.180	4.57	0.060	1.52	0.070	1.78	0.070	1.78	0.275	6.99
0.560	14.22	0.480	12.19	0.240	6.10	0.060	1.52	0.070	1.78	0.070	1.78	0.275	6.99
0.680	17.27	0.600	15.24	0.300	7.62	0.060	1.52	0.070	1.78	0.070	1.78	0.275	6.99
0.800	20.32	0.720	18.29	0.360	9.14	0.060	1.52	0.070	1.78	0.070	1.78	0.275	6.99
0.920	23.37	0.840	21.34	0.420	10.67	0.060	1.52	0.070	1.78	0.070	1.78	0.275	6.99
0.280	7.11	0.160	4.06	0.080	2.03	0.060	1.52	0.070	1.78	0.090	2.29	0.275	6.99
0.440	11.18	0.320	8.13	0.160	4.06	0.060	1.52	0.070	1.78	0.090	2.29	0.275	6.99
0.600	15.24	0.480	12.19	0.240	6.10	0.060	1.52	0.070	1.78	0.090	2.29	0.275	6.99
0.760	19.30	0.640	16.26	0.320	8.13	0.060	1.52	0.070	1.78	0.090	2.29	0.275	6.99
0.920	23.37	0.800	20.32	0.400	10.16	0.060	1.52	0.070	1.78	0.090	2.29	0.275	6.99
1.080	27.43	0.960	24.38	0.480	12.19	0.060	1.52	0.070	1.78	0.090	2.29	0.275	6.99
1.240	31.50	1.120	28.45	0.560	14.22	0.060	1.52	0.070	1.78	0.090	2.29	0.275	6.99
0.330	8.38	0.200	5.08	0.100	2.54	0.090	2.29	0.095	2.41	0.110	2.79	0.350	8.89
0.530	13.46	0.400	10.16	0.200	5.08	0.090	2.29	0.095	2.41	0.110	2.79	0.350	8.89
0.730	18.54	0.600	15.24	0.300	7.62	0.090	2.29	0.095	2.41	0.110	2.79	0.350	8.89
0.930	23.62	0.800	20.32	0.400	10.16	0.090	2.29	0.095	2.41	0.110	2.79	0.350	8.89
1.130	28.70	1.000	25.40	0.500	12.70	0.090	2.29	0.095	2.41	0.110	2.79	0.350	8.89
1.330	33.78	1.200	30.48	0.600	15.24	0.090	2.29	0.095	2.41	0.110	2.79	0.350	8.89
1.530	38.86	1.400	35.56	0.700	17.78	0.090	2.29	0.095	2.41	0.110	2.79	0.350	8.89
0.410	10.41	0.240	6.10	0.120	3.05	0.090	2.29	0.110	2.79	0.130	3.30	0.385	9.78
0.650	16.51	0.480	12.19	0.240	6.10	0.090	2.29	0.110	2.79	0.130	3.30	0.385	9.78
0.890	22.61	0.720	18.29	0.360	9.14	0.090	2.29	0.110	2.79	0.130	3.30	0.385	9.78
1.130	28.70	0.960	24.38	0.480	12.19	0.090	2.29	0.110	2.79	0.130	3.30	0.385	9.78
1.370	34.80	1.200	30.48	0.600	15.24	0.090	2.29	0.110	2.79	0.130	3.30	0.385	9.78
1.610	40.89	1.440	36.58	0.720	18.29	0.090	2.29	0.110	2.79	0.130	3.30	0.385	9.78
1.850	46.99	1.680	42.67	0.840	21.34	0.090	2.29	0.110	2.79	0.130	3.30	0.385	9.78
0.570	14.48	0.320	8.13	0.160	4.06	0.090	2.29	0.110	2.79	0.170	4.32	0.375	9.53
0.890	22.61	0.640	16.26	0.320	8.13	0.090	2.29	0.110	2.79	0.170	4.32	0.375	9.53
1.210	30.73	0.960	24.38	0.480	12.19	0.090	2.29	0.110	2.79	0.170	4.32	0.375	9.53
1.530	38.86	1.280	32.51	0.640	16.26	0.090	2.29	0.110	2.79	0.170	4.32	0.375	9.53
1.850	46.99	1.600	40.64	0.800	20.32	0.090	2.29	0.110	2.79	0.170	4.32	0.375	9.53
2.170	55.12	1.920	48.77	0.960	24.38	0.090	2.29	0.110	2.79	0.170	4.32	0.375	9.53
2.490	63.25	2.240	56.90	1.120	28.45	0.090	2.29	0.110	2.79	0.170	4.32	0.375	9.53
0.730	18.54	0.400	10.16	0.200	5.08	0.090	2.29	0.110	2.79	0.210	5.33	0.375	9.53
1.130	28.70	0.800	20.32	0.400	10.16	0.090	2.29	0.110	2.79	0.210	5.33	0.375	9.53
1.530	38.86	1.200	30.48	0.600	15.24	0.090	2.29	0.110	2.79	0.210	5.33	0.375	9.53
1.930	49.02	1.600	40.64	0.800	20.32	0.090	2.29	0.110	2.79	0.210	5.33	0.375	9.53
2.330	59.18	2.000	50.80	1.000	25.40	0.090	2.29	0.110	2.79	0.210	5.33	0.375	9.53
2.730	69.34	2.400	60.96	1.200	30.48	0.090	2.29	0.110	2.79	0.210	5.33	0.375	9.53
3.130	79.50	2.800	71.12	1.400	35.56	0.090	2.29	0.110	2.79	0.210	5.33	0.375	9.53
0.890	22.61	0.480	12.19	0.240	6.10	0.090	2.29	0.110	2.79	0.250	6.35	0.375	9.53
1.370	34.80	0.960	24.38	0.480	12.19	0.090	2.29	0.110	2.79	0.250	6.35	0.375	9.53
1.850	46.99	1.440	36.58	0.720	18.29	0.090	2.29	0.110	2.79	0.250	6.35	0.375	9.53
2.330	59.18	1.920	48.77	0.960	24.38	0.090	2.29	0.110	2.79	0.250	6.35	0.375	9.53
2.810	71.37	2.400	60.96	1.200	30.48	0.090	2.29	0.110	2.79	0.250	6.35	0.375	9.53
3.290	83.57	2.880	73.15	1.440	36.58	0.090	2.29	0.110	2.79	0.250	6.35	0.375	9.53
3.770	95.76	3.360	85.34	1.680	42.67	0.090	2.29	0.110	2.79	0.250	6.35	0.375	9.53

For other resonator profiles and connectors, please contact factory.

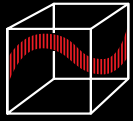


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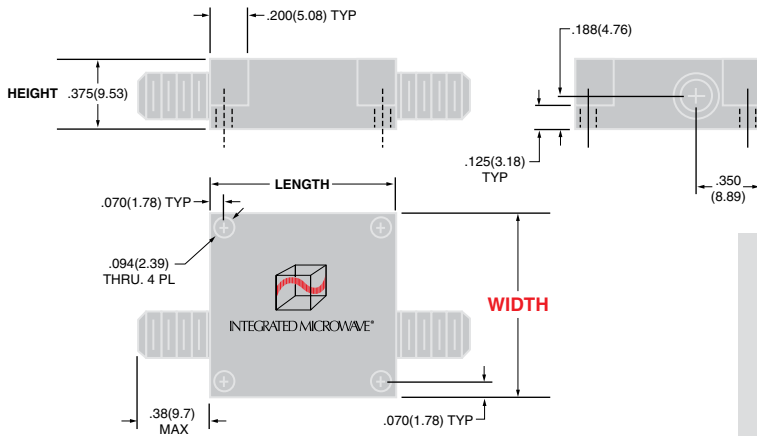
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# Ceramic Products

## Package Styles

### ■ Connectorized – A10 (Shown with SMA connectors)

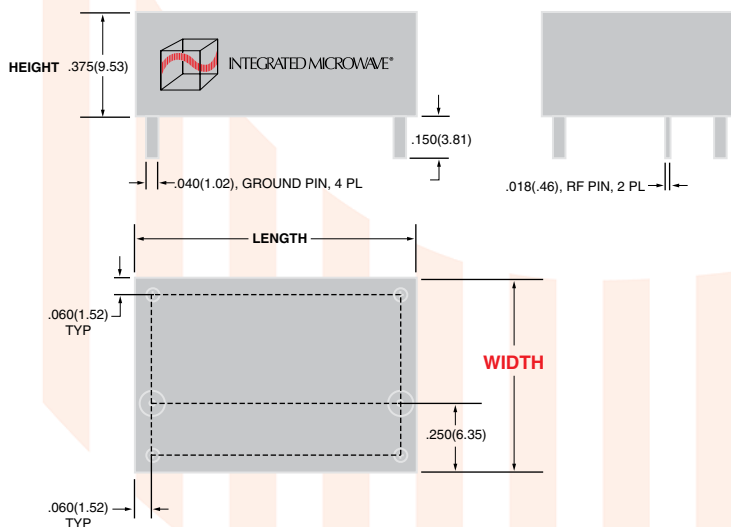


$$\text{Width (Inches)} = \frac{2951}{f_O \text{ (MHz)} \times \sqrt{\text{dielectric constant}}} + 0.275$$

Res. Profile	Sections	Height Inches	Height mm	Length Inches	Length mm
4 mm	2	0.375	9.53	0.75	19.05
4 mm	3	0.375	9.53	1.00	25.40
4 mm	4	0.375	9.53	1.00	25.40
4 mm	5	0.375	9.53	1.25	31.75
6 mm	2	0.375	9.53	1.00	25.40
6 mm	3	0.375	9.53	1.25	31.75
6 mm	4	0.375	9.53	1.50	38.10
6 mm	5	0.375	9.53	1.75	44.45

Tolerance: ±0.010 Inches/±0.25 mm

### ■ PC Mount – R10

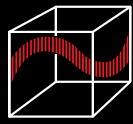


$$\text{Width (Inches)} = \frac{2951}{f_O \text{ (MHz)} \times \sqrt{\text{dielectric constant}}} + 0.275$$

Res. Profile	Sections	Height Inches	Height mm	Length Inches	Length mm
4 mm	2	0.375	9.53	0.75	19.05
4 mm	3	0.375	9.53	1.00	25.40
4 mm	4	0.375	9.53	1.25	31.75
4 mm	5	0.375	9.53	1.50	38.10
6 mm	2	0.375	9.53	1.00	25.40
6 mm	3	0.375	9.53	1.25	31.75
6 mm	4	0.375	9.53	1.50	38.10
6 mm	5	0.375	9.53	1.75	44.45

Tolerance: ±0.010 Inches/±0.25 mm

For other resonator profiles and connectors, please contact factory.



# Cavity Filters

Integrated Microwave offers a full range of cavity filters for unsurpassed performance in a wide spectrum of applications, including aerospace, military, industrial and commercial requirements.

## Comblines

High Q miniature, elliptic response, delay equalized.

- **Bandwidth:** .01% ~ 75%
- **Frequency Range:** 300 MHz ~ 20 GHz
- **Available Packaging:** Connectorized, SMT, Pin

## Interdigital

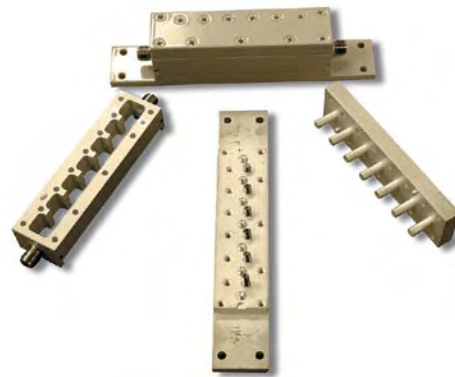
Wide band, high Q, symmetrical response.

- **Bandwidth:** 10% ~ 100%
- **Frequency Range:** 300 MHz ~ 20 GHz
- **Available Packaging:** Connectorized, SMT, Pin

## Cavity Bandpass/ Band Reject

Unsurpassed notch depth and selectivity

- **Bandwidth:** .05% ~ 75%
- **Frequency Range:** 500 MHz ~ 5 GHz
- **Available Packaging:** Connectorized, SMT, Pin



## Narrowband Filters for STL Receivers

Integrated Microwave offers narrowband cavity filters for Canadian and US STL bands (photo below). Ceramic filters are also available for STL applications in Mexico. These filters are designed for receiver preselector use, offering outstanding signal separation. Passband loss is typically 4 db

or less, while rejection is over 80 dbc. These filters allow virtually private band use in congested areas. Wideband filters cover 100% of the STL band, while narrowband versions can be less than 750 kHz wide. Narrowband filters come pretuned to your STL frequency and STL bandwidth.

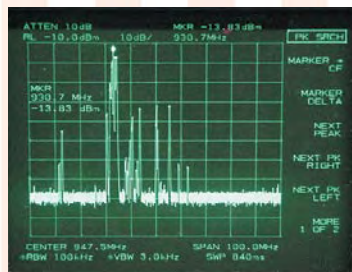


Fig. 1

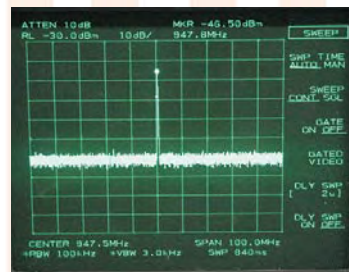
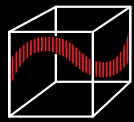


Fig. 2

Fig. 1 STL band from radio transmitter at congested site, shown center-screen.

Fig. 2 The same spectrum viewed through Integrated Microwave's 1 MHz bandwidth STL filter.



# Lumped Element Filters

Lumped element filters offer small size at low frequencies not achievable by ceramic, cavity or waveguide implementations. Integrated Microwave's advanced modeling and design can achieve virtually any filter response shape.

## ■ Elliptic

True elliptic, pseudo-elliptic and quasi-elliptic functions are regularly used to increase selectivity, allowing wider bandwidths and decreased passband loss. This is achieved by adding band-reject resonances to the stop-band of conventional filters, allowing exceptionally steep skirts in the 1 MHz to 20 GHz range.

## ■ Helical

The Q of helical filters can be dramatically increased for narrow band/low frequency, in some cases matching the size and performance of ceramic filters up to 1 GHz.

## ■ Gaussian and Bessel

Integrated Microwave has special expertise with lumped Gaussian, Gaussian elliptic, Bessel and Bessel elliptic, incorporating the low ringing and selectivity of Chebyshev.

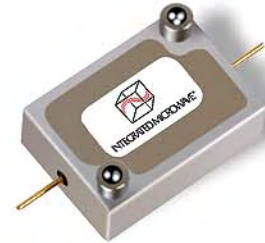
## ■ Conventional Chebyshev

Our advanced software and modeling can achieve virtually any response shape from lowpass to high-pass, and bandpass shapes in-between.

## ■ Packaging

IMC has numerous package styles for all our filters. We have shown just a few. Please contact us with your requirements.

## Bandpass Filters



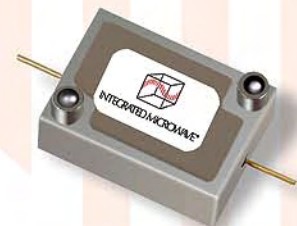
- **Bandwidth:** 1% ~ 200%
- **Frequency Range:** dc ~ 20 GHz
- **Available Packaging:** Connectorized, SMT, Pin

## Lowpass Filters

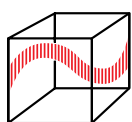


- **Frequency Range:** dc ~ 20 GHz
- **Available Packaging:** Connectorized, SMT, Pin

## Highpass Filters



- **Frequency Range:** dc ~ 20 GHz
- **Available Packaging:** Connectorized, SMT, Pin

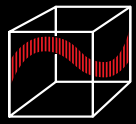


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# Specialty Products

## Linear Phase Filters

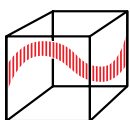
Integrated Microwave has the technology to model and produce filters that are capable of meeting both group delay and amplitude specifications simultaneously, without the use of separate equalizers. These filters can be designed to meet VSWR and attenuation specifications very nearly equal to more conventional Chebyshev or Butterworth designs, while maintaining a low group delay variation over a large percentage of the passband. Insertion loss variation over the passband will closely track the group delay variation.



## Multiplexers

Highly efficient, frequency selective dividers and combiners are typically a series of lowpass-highpass crossover junctions. The complexity usually ranges from one to four crossover junctions, in addition to close-up lowpass and highpass filters.

Multiplexers are available in narrow, moderate, and octave passbands. Typical multiplexers will have a 1:5:1 maximum passband VSWR and a 2:0:1 maximum crossover VSWR.



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