

## Custom Crystal and LC Filters

Filtronetics, Inc. manufactures low pass, high pass, band pass and band reject type filters, as well as phase match, linear phase and anti-alias type filters. Our frequency range in crystal filters is from 5 KHz to 500 MHz and with LC filters up to 700 MHz. The following is a listing of custom filters that we have previously produced and is **simply to show capability**. Consult factory for your custom filter requirements.

Crystal Band Pass Filters (1 MHz to 500 MHz)

MODEL	Fo MHz	3 dB BW	STOP BAND	RIPPLE dB	IL dB
FN-201	1.0	1 KHz	50 dB BW 6 KHz	0.50	4.5
FN-2304	10.0	480 Hz	40 dB BW 1.9 KHz	0.50	4.5
FN-105	10.7	2.3 KHz	60 dB BW 4.6 KHz	0.25	4.0
FN-845-2	10.7	50 KHz	60 dB BW 150 KHz	0.75	6.0
FN-845-3	10.7	100 KHz	60 dB BW 300 KHz	1.00	7.0
FN-1687	21.4	50 KHz	60 dB BW 100 KHz	1.00	4.0
FN-1688	21.4	100 KHz	60 dB BW 200 KHz	1.00	4.0
FN-1681	21.4	200 KHz	60 dB BW 340 KHz	2.00	6.0
FN-1814	21.4	400 KHz	60 dB BW 740 KHz	1.20	6.0
FN-2516	45.0	40 KHz	60 dB BW 85 KHz	0.00	7.5
FN-1870	46.5	200 KHz	60 dB BW 500 KHz	1.00	7.0
FN-1195	60.0	100 KHz	40 dB BW 390 KHz	1.00	6.0
FN-1775	70.0	7 KHz	60 dB BW 30 KHz	1.00	5.0
FN-1404	70.0	25 KHz	60 dB BW 85 KHz	0.00	5.0
FN-1371	70.0	50 KHz	60 dB BW 250 KHz	1.00	5.0
FN-2523	70.0	100 KHz	50 dB BW 400 KHz	1.00	6.5
FN-2091	70.0	200 KHz	60 dB BW 340 KHz	1.00	10.0
FN-1406	70.0	500 KHz	55 dB BW 2 MHz	0.50	10.0
FN-1457	70.0	1.1 MHz	50 dB BW 2 MHz	1.00	10.0
FN-1210	70.25	130 KHz	50 dB BW 650 KHz	1.00	6.0
FN-1094	72.5	65 KHz	60 dB BW 340 KHz	1.00	5.0
FN-1781	80.0	6.5 KHz	60 dB BW 38 KHz	0.00	4.0
FN-1368	109.0	30 KHz	60 dB BW 150 KHz	0.50	4.5
FN-1190	140.0	50 KHz	50 dB BW 250 KHz	0.50	5.0
FN-2196	140.0	225 KHz	50 dB BW 600 KHz	0.50	7.0
FN-2197	140.0	500 KHz	50 DB BW 1.5 MHz	0.50	7.0
FN-2037	140.4	40 KHz	60 dB BW 150 KHz	0.50	5.0
FN-2038	140.4	150 KHz	60 dB BW 425 KHz	0.50	5.0
FN-1801	148.275	40 KHz	60 dB BW 300 KHz	0.75	5.0
FN-2068	150.0	220 KHz	60 dB BW 950 KHz	0.60	4.0
FN-2102	159.03	6 KHz	55 dB BW 30 KHz	0.00	11.0
FN-1825	200.0	25 KHz	40 dB BW 80 KHz	0.00	5.0
FN-2231	467.03	100 KHz	30 dB BW 800 KHz	0.00	7.0

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Low Frequency Crystal Band and Pass Filters (5 KHz to 999 KHz)

MODEL	Fo KHz	3 dB BW	STOP BAND	RIPPLE dB	IL dB
FN-130	5	10.0 Hz	60 dB BW 50 Hz	0.00	6
FN-1568	41	300.0 Hz	60 dB BW 1 KHz	0.25	2
FN-154	50	10.0 Hz	60 dB BW 50 Hz	0.10	4
FN-920M	80	10.0 Hz	60 dB BW 60 Hz	0.10	4
FN-171	80	200.0 Hz	60 dB BW 800 Hz	0.25	3
FN-140M	250	25.0 Hz	60 dB Bw 70 Hz	0.00	6
FN-141M	250	250.0 Hz	60 dBBW 700 Hz	0.20	4
FN-134	455	100.0 Hz	60 dB BW 400 Hz	0.00	3
FN-497	455	250.0 Hz	60 dB BW 550 Hz	1.50	4
FN-493	455	400.0 Hz	60 dB BW 900 Hz	1.00	2
FN-499	455	1.0 KHz	60 dB BW 2.5 KHz	3.00	2
FN-353	455	2.3 KHz	60 dB BW 4.6 KHz	0.20	4
FN-160	455	3.1 KHz	60 dB BW 6.2 KHz	0.20	4
FN-860	455	6.0 KHz	60 dB BW 19 KHz	0.60	6
FN-104	495.75	500.0 Hz	60 dB BW 1.5 KHz	0.20	3
FN-152	500	100.0 Hz	60 dB BW 400 Hz	0.20	3
FN-721	500	3.1 KHz	60 dB BW 6.2 KHz	0.20	4

Crystal Notch Filters (up to 160 MHz)

MODEL	Notch Fo MHz	3 dB BW	NOTCH BW	RIPPLE dB	IL dB
FN-1774	70.0	70 KHz	60 dB BW 15 KHz	0.5	1
FN-1805	70.5	80 KHz	35 dB BW 22 KHz	1.0	1
FN-1804	120.0	55 KHz	30 dB BW 16 KHz	0.3	2
FN-2257	140.0	60 KHz	60 dB BW 6.5 KHz	1.0	3
FN-2476	150.0	80 KHz	80 dB BW 6 KHz	1.0	3

Constant Group Delay Band Pass Crystal Filters (up to 160 MHz)

MODEL	Fo MHz	3 dB BW	STOP BAND	IL dB	GROUP DELAY Variation over 3 dB
FN-1784	10.7	30 KHz	50 dB BW 180 KHz	5.0	2μsec
FN-2193	21.4	100 KHz	60 dB BW 400 KHz	7.5	2μsec
FN-1785	70.0	35 KHz	60 dB BW 325 KHz	5.0	2μsec
FN-2513	100.0	150 KHz	30 dB BW 750 KHz	5.5	2μsec

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## Custom Crystal and LC Filters

### LC Band Pass Filters (100 Hz to 700 MHz)

MODEL	Fo	3 dB BW	STOP BAND	RIPPLE dB	IL dB
FN-352M	100 Hz	10 Hz	60 dB BW 60 Hz	0.0	5.0
FN-172	80 KHz	2.3 KHz	60 dB BW 4.9 KHz	0.2	6.0
FN-129	100 KHz	15 KHz	60 dB BW 63 KHz	0.2	1.0
FN-159	250 KHz	3.5 KHz	60 dB BW 12.5 KHz	0.3	6.0
FN-450M	455 KHz	8 KHz	60 dB BW 36 KHz	0.5	8.0
FN-539	455 KHz	16 KHz	60 dB BW 32 KHz	1.0	6.0
FN-931	1.36 MHz	100 KHz	60 dB BW 900 KHz	0.2	3.0
FN-2400	1.75 MHz	125 KHz	50 dB BW 600 KHz	0.0	3.0
FN-732-2	1.79 MHz	430 KHz	60 dB BW 540 KHz	0.5	7.0
FN-302	4.13 MHz	76 KHz	60 dB BW 130 KHz	0.0	10.0
FN-620	5 MHz	2 MHz	60 dB BW 6 MHz	0.2	1.0
FN-384	10.7 MHz	200 KHz	60 dB BW 1 MHz	0.0	8.0
FN-363	10.7 MHz	300 KHz	70 dB BW 1.5 MHz	0.0	9.0
FN-2367	15 MHz	600 KHz	50 dB BW 6 MHz	0.0	3.5
FN-2135	21.4 MHz	500 KHz	60 dB BW 2 MHz	0.0	9.0
FN-2138	21.4 MHz	5 MHz	60 dB BW 20 MHz	0.5	2.0
FN-2418	70.0 MHz	2 MHz	40 dB BW 20 MHz	0.0	7.7
FN-2162M	109 MHz	3 MHz	80 dB BW 110 MHz	0.0	4.0
FN-2136	160 MHz	10 MHz	60 dB BW 32 MHz	0.5	4.5
FN-2555M	256.5 MHz	22 MHz	50 dB BW 95 MHz	0.5	4.0
FN-2225 (Tunable)	340-385 MHz	8 MHz	30 dB BW 40 MHz	0.5	5.0
FN-2213M	639 MHz	10 MHz	80 dB BW 200 MHz	0.0	6.5

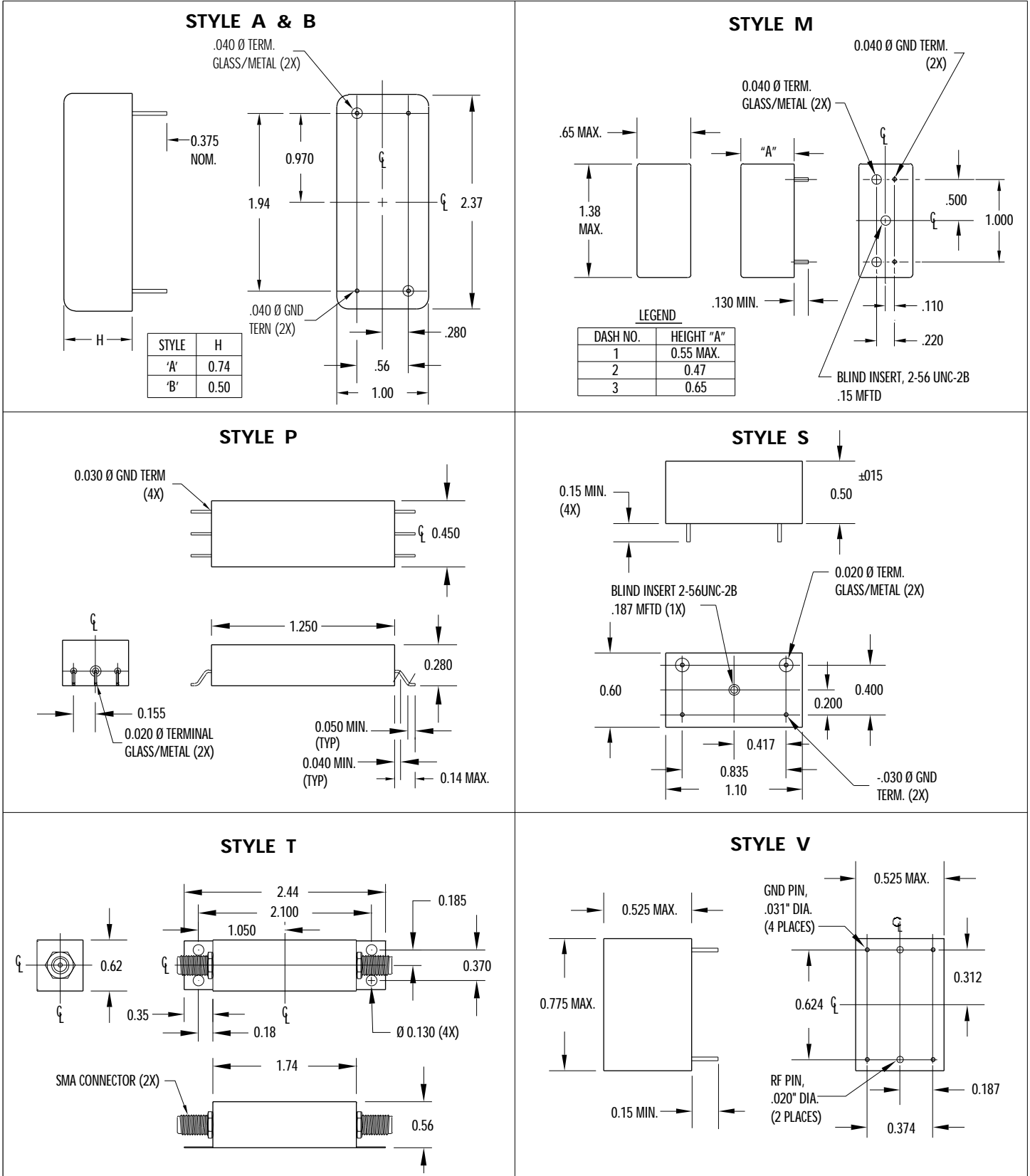
### LC Low Pass Filters (1.5 KHz to 700 MHz)

MODEL	CUT-OFF	REJECTION	RIPPLE dB	IL dB
FN-454	3.0 dB @ 1.5 KHz	1.9 KHz - 38 dB	0.3	0.5
FN-177	0.2 dB @ 75 KHz	146 KHz - 60 dB	0.2	1.0
FN-2288	3.0 dB @ 250 KHz	300 KHz - 70 dB	0.3	0.5
FN-595	1.0 dB @ 5.25 MHz	6.2 MHz - 30 dB	0.2	1.0
FN-750	3.0 dB @ 20.5 MHz	25 MHz - 40 dB	0.4	1.0
FN-1994 (200 watts)	0.2 dB @ 400 MHz	800 MHz - 40 dB	0.2	0.2
FN-2198	1.0 dB @ 500 MHz	670 MHz - 30 dB	0.2	1.0

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# TYPICAL OUTLINE DRAWINGS FOR CUSTOM CRYSTAL AND LC FILTERS



NOTE: WE ARE ABLE TO CUSTOMIZE ALMOST ANY REQUIRED PACKAGE, CONSULT FACTORY

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