

NORMALIZED FILTER DESIGN TABLES

Bessel filter		Normalized parameters		$(f_c 1/\sqrt{2})$	
order	stage	<i>pole.r</i>	\pm <i>pole.i</i>	<i>Q</i>	ω
2	1	-1.101601330592	0.636009824757	0.577350269190	1.272019649514
3	1	-1.047409161009	0.999264436281	0.691046625825	1.447617133147
	2	-1.322675799910	0.000000000000	0.500000000000	1.322675799910
4	1	-0.995208764350	1.257105739455	0.805538281842	1.603357516217
	2	-1.370067830551	0.410249717494	0.521934581669	1.430171559994
5	1	-0.957676548563	1.471124320730	0.916477373948	1.755377776637
	2	-1.380877325860	0.717909587627	0.563535620851	1.556347122297
	3	-1.502316271447	0.000000000000	0.500000000000	1.502316271447
6	1	-0.930656522947	1.661863268943	1.023313953827	1.904707612303
	2	-1.381858097597	0.971471890712	0.611194546878	1.689168267620
	3	-1.571490403616	0.320896374223	0.510317824749	1.603919128774
7	1	-0.909867780623	1.836451353036	1.126257541983	2.049490900269
	2	-1.378903216795	1.191566777801	0.660821389297	1.822417478858
	3	-1.612038766226	0.589244506931	0.532355697900	1.716356044871
	4	-1.684368179273	0.000000000000	0.500000000000	1.684368179273
8	1	-0.892869718847	1.998325843641	1.225669425408	2.188726230527
	2	-1.373841217637	1.388356575878	0.710852074442	1.953195759022
	3	-1.636939418127	0.822795625140	0.559609164796	1.832092601199
	4	-1.757408400402	0.272867575102	0.505991069397	1.778465911775
9	1	-0.878399276161	2.149800524313	1.321911584736	2.322332358363
	2	-1.367588309793	1.567733712237	0.760611004410	2.080405435863
	3	-1.652396484579	1.031389566984	0.589406099687	1.947865134226
	4	-1.807170534962	0.512383730575	0.519708624045	1.878404224280
	5	-1.856600501228	0.000000000000	0.500000000000	1.856600501228
10	1	-0.865756901708	2.292604830982	1.415308869163	2.450626843055
	2	-1.360692278385	1.733505742661	0.809790964841	2.203752625931
	3	-1.661810241362	1.221100218579	0.620470155556	2.062207317927
	4	-1.842196244525	0.727257597757	0.537552151325	1.980553108815
	5	-1.927619691372	0.241623470972	0.503912727276	1.942704191659
11	1	-0.854512581352	2.428059466915	1.506143196270	2.574036621061
	2	-1.353486677388	1.888296844760	0.858254347396	2.323271650022
	3	-1.667193642245	1.395962903646	0.652129790267	2.174453280505
	4	-1.867361238887	0.923115582952	0.557757625272	2.083069940253
	5	-1.980160645304	0.459598743827	0.513291150483	2.032797871540
	6	-2.016701473450	0.000000000000	0.500000000000	2.016701473450
12	1	-0.844378872850	2.557188969203	1.594656935072	2.692989250838
	2	-1.346174680291	2.033998508278	0.905947107024	2.439126114315
	3	-1.669803588853	1.558802700841	0.684008068145	2.284318253986
	4	-1.885649619732	1.103814881215	0.579367238623	2.184967226387
	5	-2.019945933075	0.658996500717	0.525936202038	2.124725384727
	6	-2.084644506932	0.219161535190	0.502755558194	2.096133225438

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Bessel filter		Normalized parameters		$(f_c 1/\sqrt{2})$	
order	stage	$pole.r$	$\pm pole.i$	Q	ω
13	0	-0.835152010450	2.680802796891	1.681058427355	2.807878650579
	1	-1.338880324083	2.172022947107	0.952858075620	2.551525858183
	2	-1.670458562623	1.711678286388	0.715884117225	2.391709506929
	3	-1.898986117480	1.272119436514	0.601821815954	2.285702547389
	4	-2.050580876084	0.843383108577	0.540638359668	2.217245362425
	5	-2.137648294624	0.420416306757	0.509578259936	2.178598196661
14	6	-2.166082705679	0.000000000000	0.500000000000	2.166082705679
	0	-0.826681332432	2.799552212173	1.765527434931	2.919057144708
	1	-1.331679197368	2.303455344616	0.998998442994	2.660690889477
	2	-1.669710160709	1.856138743599	0.747625068254	2.496634345727
	3	-1.908664575142	1.430079731903	0.624777082461	2.384979769306
	4	-2.074451584640	1.015367089591	0.556680772746	2.309614622321
15	5	-2.179709520652	0.607029827030	0.519027293287	2.262657465310
	6	-2.230930742276	0.202000270076	0.502045428588	2.240057161312
	0	-0.818851830333	2.913969926528	1.848219887851	3.026836476050
	1	-1.324616760062	2.429149773985	1.044390911139	2.766835409902
	2	-1.667940800778	1.993380808327	0.779150095948	2.599152469923
	3	-1.915584346592	1.579260355569	0.648012471436	2.482645093359
16	4	-2.093199721556	1.176916176093	0.573614182931	2.401378095984
	5	-2.213527487343	0.781429977851	0.530242036934	2.347410647396
	6	-2.283426562342	0.389828935985	0.507234085577	2.316463568663
	7	-2.306370056629	0.000000000000	0.500000000000	2.306370056629
	0	-0.811573467248	3.024498076022	1.929271840701	3.131491674043
	1	-1.317719437283	2.549792073296	1.089063769176	2.870160994167
17	2	-1.665421929285	2.124349593000	0.810410302885	2.699350180288
	3	-1.920388094899	1.720883332924	0.671382379592	2.578629457787
	4	-2.107990834574	1.329552505847	0.591144659445	2.492255048034
	5	-2.240993222668	0.945474046670	0.542678366010	2.432277080632
	6	-2.326479062650	0.565736690970	0.514570953726	2.394277100182
	7	-2.368346681746	0.188332956714	0.501578400309	2.375823080013
18	0	-0.804774289290	3.131508336846	2.008802712504	3.233265550560
	1	-1.311001474618	2.665942486492	1.133047589354	2.970854120911
	2	-1.662350062300	2.249805563480	0.841376937650	2.797326009441
	3	-1.923545830451	1.855922126666	0.694788532447	2.672915169266
	4	-2.119674269636	1.474478470847	0.609073281948	2.582073928134
	5	-2.263471407100	1.100616054013	0.555976705181	2.516874750382
	6	-2.362155898461	0.731464742561	0.523423632644	2.472816442489
	7	-2.419906915510	0.365086729057	0.505658278861	2.447291931803
8	-2.438927222316	0.000000000000	0.500000000000	2.438927222316	