1.7 MHz Low Pass Filter



EF510

Description

The EF510 Low Pass Filter employs a 5th order elliptic filter design. The design reduces group delay variation while preserving a practical 5th order rejection skirt. Uniquely, the EF510 is designed to terminate into DAQ, lab equipment, oscilloscope, or any modern voltage signal transfer systems that have high impedance inputs. For $V_{transfer}$ systems, this architecture provides the highest signal-to-noise ratio capabilities.

Specifications

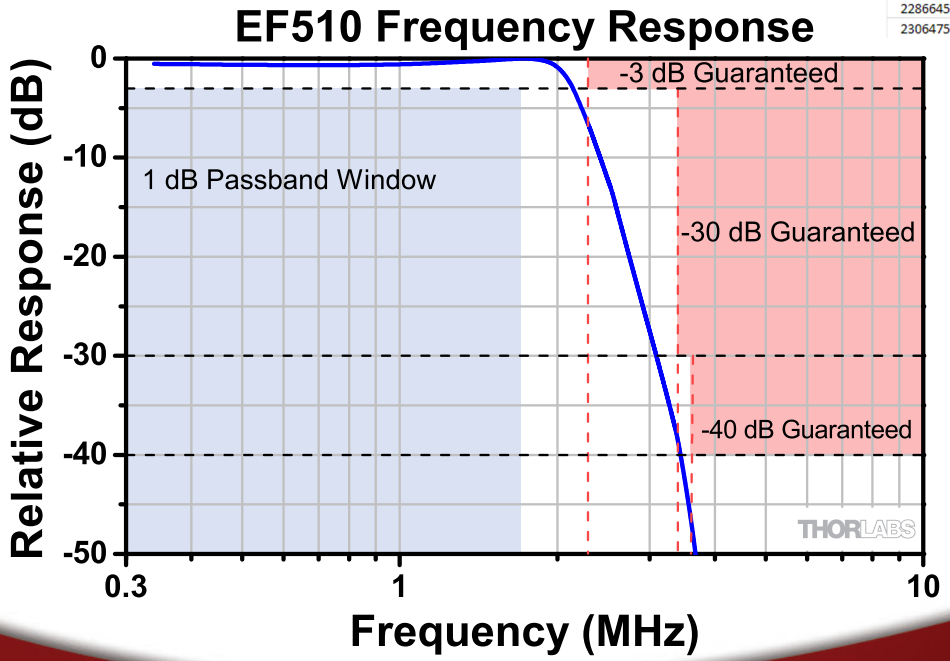
EF510	
	Value[a]
Passband (1 dB Window)	0 to 1.7 MHz
3 dB Rejection	>2.3 MHz
30 dB Rejection	>3.4 MHz
40 dB Rejection[b]	>3.6 MHz
Source Impedance (BNC Female)	50 Ω (Typical)
Load Impedance[c] (BNC Male)	≥100 kΩ (Typical)
Input Voltage	±10 V (Max)
Storage Temperature	-20 to +70 °C

a. Values measured at 25 °C.
b. Rejection measured to 500 MHz.
c. This filter can be operated with termination resistances below 1 kΩ, however, the passband will narrow at smaller termination resistances and the performance is not guaranteed.

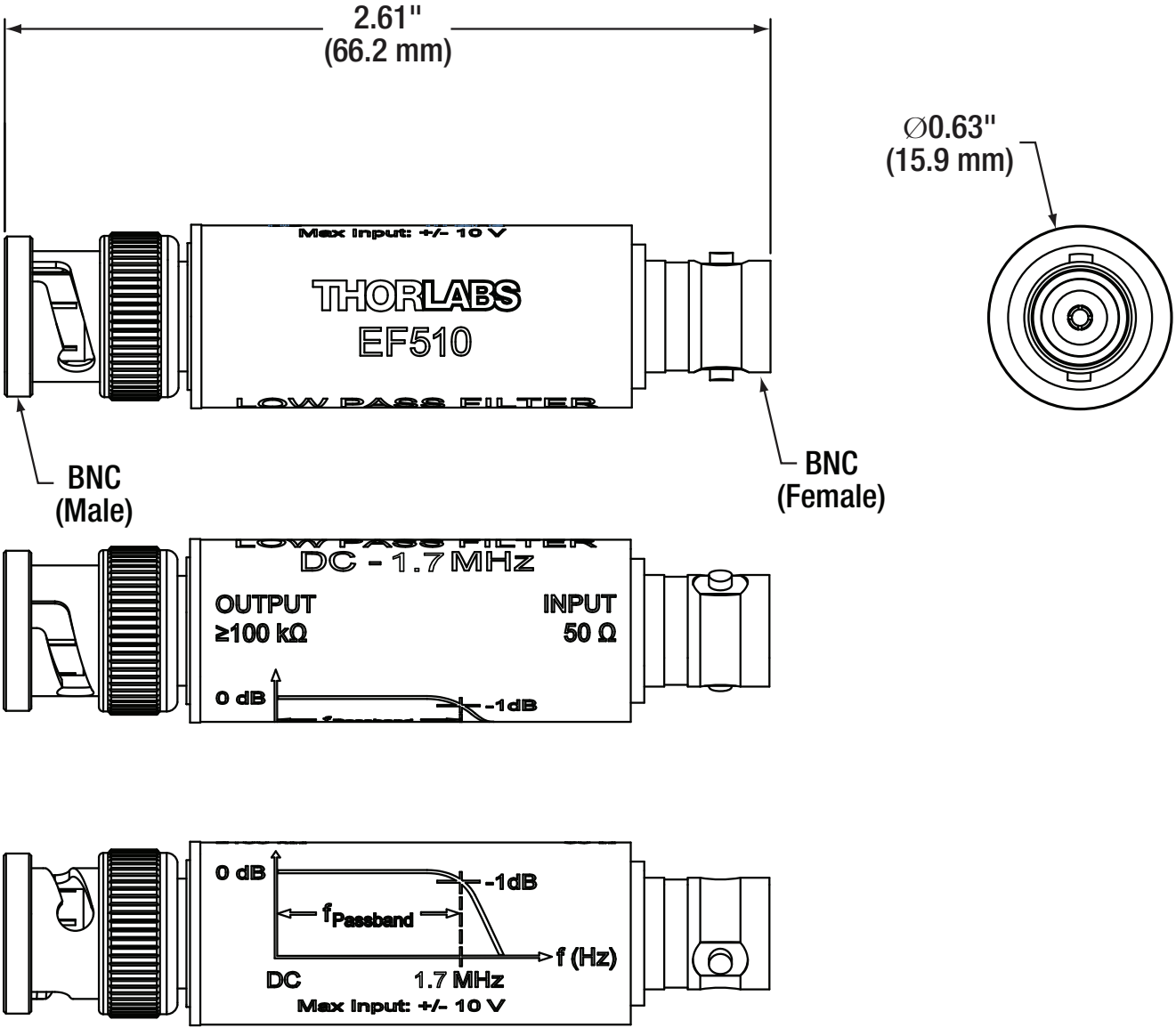
Sample Response Data

Frequency (Hz)	Rel. Resp. (dB)	Group Delay Variation (nS)
339194.5935	-0.543059	0
354159.5208	-0.551904	2.38
396231.4296	-0.574398	2.086
435711.3984	-0.593175	5.098
479125.0983	-0.615023	8.006
531433.4924	-0.637822	10.425
589452.6458	-0.65603	16.422
653806.0295	-0.670479	22.304
718950.3863	-0.675812	28.384
797441.6619	-0.66981	36.256
884502.208	-0.644906	47.498
981067.5731	-0.600012	59.539
1088175.444	-0.536263	69.8
1206976.797	-0.433493	83.415
1304514.532	-0.347201	92.013
1409934.448	-0.257009	101.497
1510771.98	-0.156417	116.102
1604903.49	-0.068668	137.952
1675710.232	-0.019	162.579
1690242.126	-0.012196	168.712
1704900.042	-0.006487	175.333
1749640.896	0	197.564
1858655.586	-0.091401	268.835
1957487.157	-0.471509	368.159
2026277.497	-1.085193	440.064
2097485.279	-2.106208	469.759
2152528.555	-3.171313	446.46
2286645.924	-6.469057	288.659
2306475.902	-7.003305	263.011

Frequency (Hz)	Rel. Resp. (dB)
2326477.846	-7.548089
2346653.25	-8.100012
2367003.616	-8.659394
2387530.462	-9.223304
2408235.319	-9.790324
2429119.729	-10.36017
2450185.252	-10.93215
2471433.456	-11.5047
2492865.926	-12.07754
2741251.746	-19.87179
3014386.398	-27.8813
3314735.82	-36.13596
3645011.655	-48.75301
4042955.13	-59.23494
4484344.009	-55.05368
4523232.602	-55.05264
4973921.438	-57.57842
5469516.306	-64.11342
6014491.582	-74.96584
6613767.465	-62.42445
7272754.394	-58.33766
7997401.897	-56.40111
8794252.307	-55.20483
9670499.824	-54.67625
10634055.47	-54.49622



Drawings


2.61"
(66.2 mm)
Ø0.63"
(15.9 mm)
Max Input: +/- 10 V
THORLABS
EF510
LOW PASS FILTER
BNC
(Male)
BNC
(Female)
DC - 1.7 MHz
OUTPUT
≥100 kΩ
INPUT
50 Ω
0 dB
-1dB
0 dB
-1dB
fPassband
f (Hz)
DC
1.7 MHz
Max Input: +/- 10 V