240 kHz Low Pass Filter



EF504

Description

The EF504 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 EF504 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

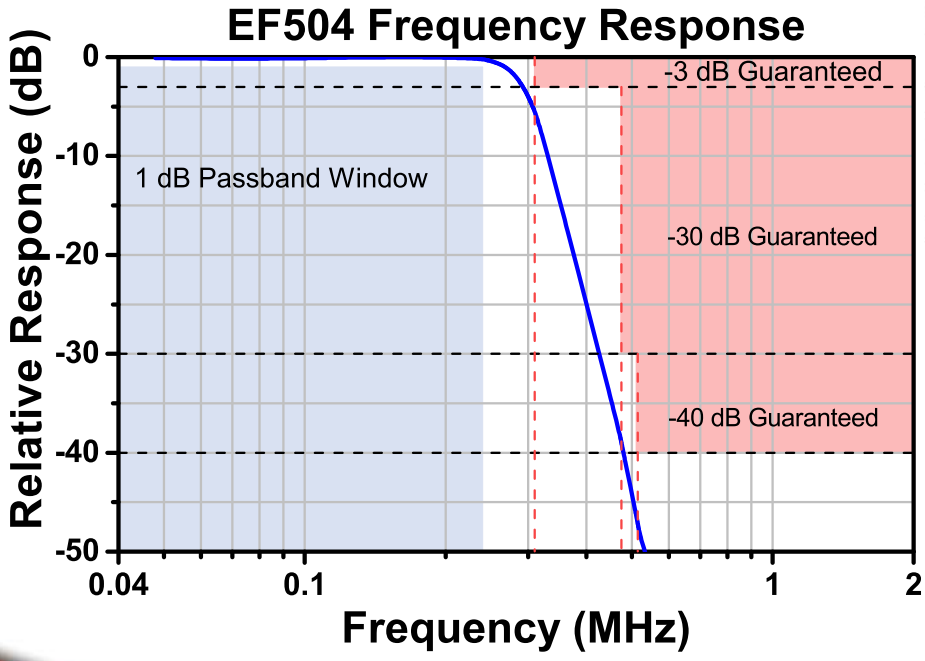
EF504	
	Value[a]
Passband (1 dB Window)	0 to 240 kHz
3 dB Rejection	> 310 kHz
30 dB Rejection	> 475 kHz
40 dB Rejection[b]	> 515 kHz
Source Impedance (BNC Female)	50 Ω (Typical)
Load Impedance[c] (BNC Male)	≥100 kΩ (Typical)
Input Voltage	±10 V (Max)
Storage Temperature	-20 to +70 °C

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.

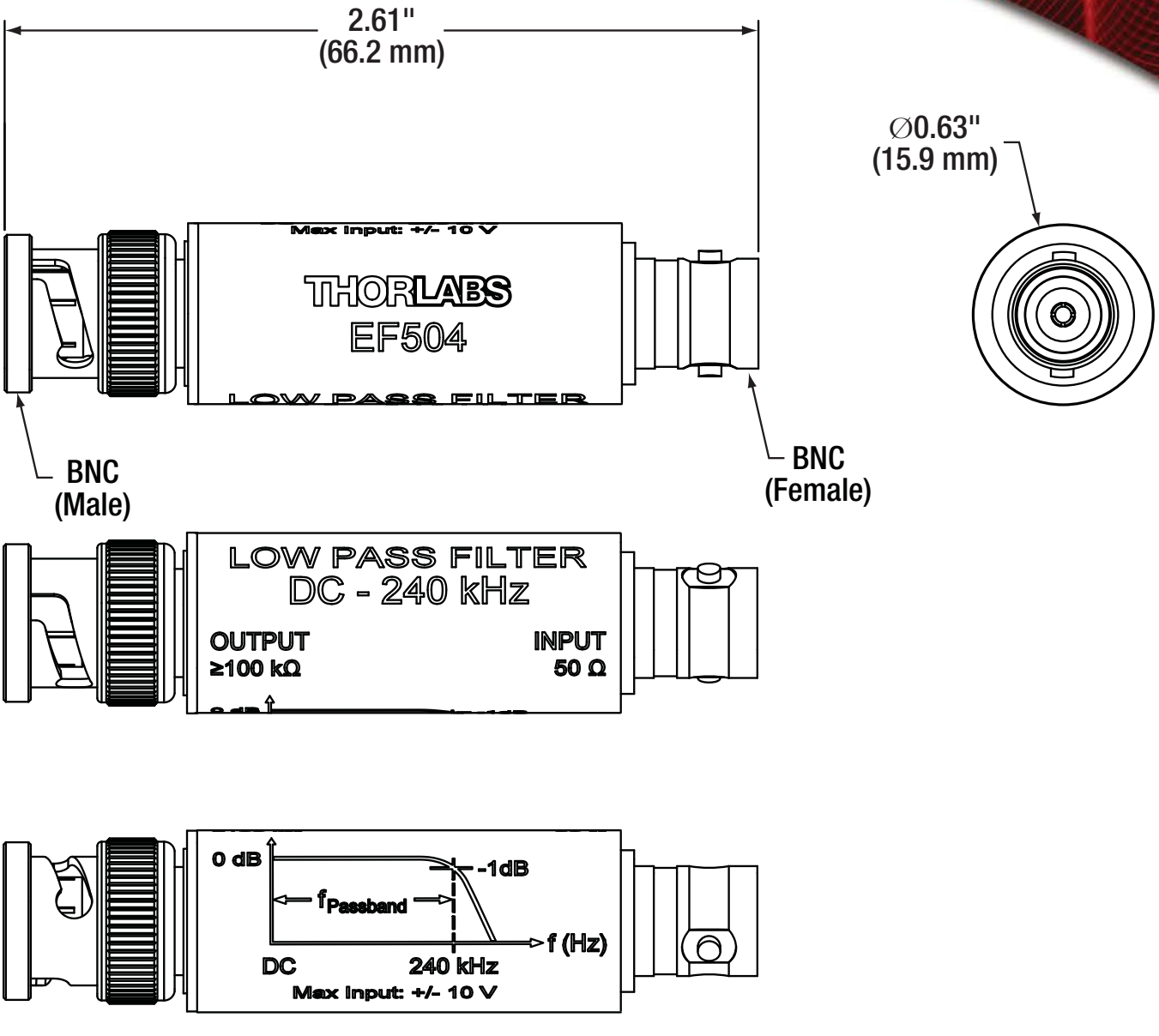
Sample Response Data

Frequency (Hz)	Rel. Resp. (dB)	Group Delay Variation (nS)
48000	-0.093439	0.0
49270	-0.100084	-0.4
54220	-0.120977	9.3
59667	-0.137801	35.9
65661	-0.149781	50.5
72258	-0.155478	89.8
79518	-0.152023	110.5
87507	-0.141116	149.3
96298	-0.121346	194.6
105973	-0.098063	249.9
116620	-0.06885	318.4
128336	-0.042596	392.9
141229	-0.01928	468.0
155418	-0.003481	551.0
171033	-0.002009	620.1
188216	-0.019125	684.1
207125	-0.062847	784.9
227934	-0.138731	1049.9
238072	-0.203204	1263.2
240153	-0.222608	1308.4
242252	-0.248628	1379.5
257469	-0.553869	2059.4
271271	-1.102571	2847.0
283336	-1.980803	3271.1
293373	-3.08	3134.7
301134	-4.13	2784.0
306421	-4.92	2475.6
314527	-6.27	1950.0
340154	-12.04	398.1

Frequency (Hz)	Rel. Resp. (dB)
469380	-37.83
473483	-38.65
477622	-39.47
512061	-46.59
516537	-47.57
521052	-48.61
625540	-60.71
757546	-62.52
833654	-69.14
941676	-77.48
1027303	-67.44
1130513	-63.78
1277001	-61.39
1405297	-60.49
1546482	-60.18



Drawings


2.61"
(66.2 mm)
∅0.63"
(15.9 mm)
Max Input: +/- 10 V
THORLABS
EF504
LOW PASS FILTER
BNC
(Male)
BNC
(Female)
LOW PASS FILTER
DC - 240 kHz
OUTPUT
≥100 kΩ
INPUT
50 Ω
0 dB
-1dB
fPassband
f (Hz)
DC
240 kHz
Max Input: +/- 10 V