2 kHz Low-Pass Filter



EF112

Description

The EF112 Low-Pass Filter employs a 5th order elliptic filter design. The design reduces group delay variation while preserving a practical 5th order rejection skirt. The EF112 is notably designed to terminate into any modern voltage signal transfer system that has a high impedance input, including DAQ systems, laboratory test equipment, and oscilloscopes. This architecture provides the highest signal-to-noise ratio capabilities for $V_{transfer}$ systems.

Specifications

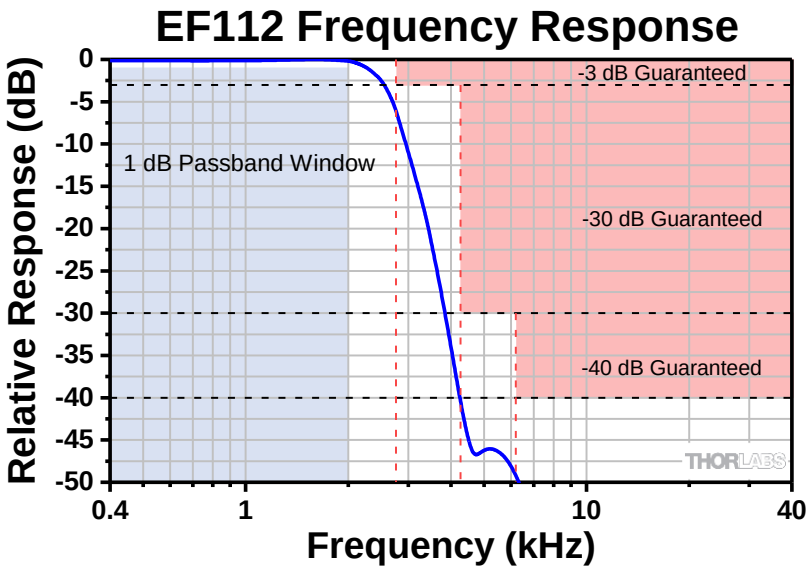
EF112	
	Value[a]
Passband (1 dB Window)[b]	DC to 2 kHz
3 dB Rejection	>2.76 kHz
30 dB Rejection	>4.27 kHz
40 dB Rejection	>6.20 kHz
Source Impedance (BNC Female)	50 Ω (Typical)
Load Impedance[c] **(BNC Female)**	≥100 kΩ (Typical)
Input Voltage	±10 V (Max)
Storage Temperature	-20 to +70 °C

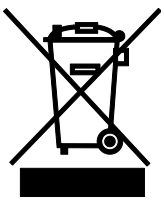
a. Values measured at 25 °C.
b. Performance measured to 500 MHz.
c. This filter can be operated with termination resistances below 1 kΩ; however, the passband will narrow at smaller termination resistances and the performance is not guaranteed.

Sample Response Data

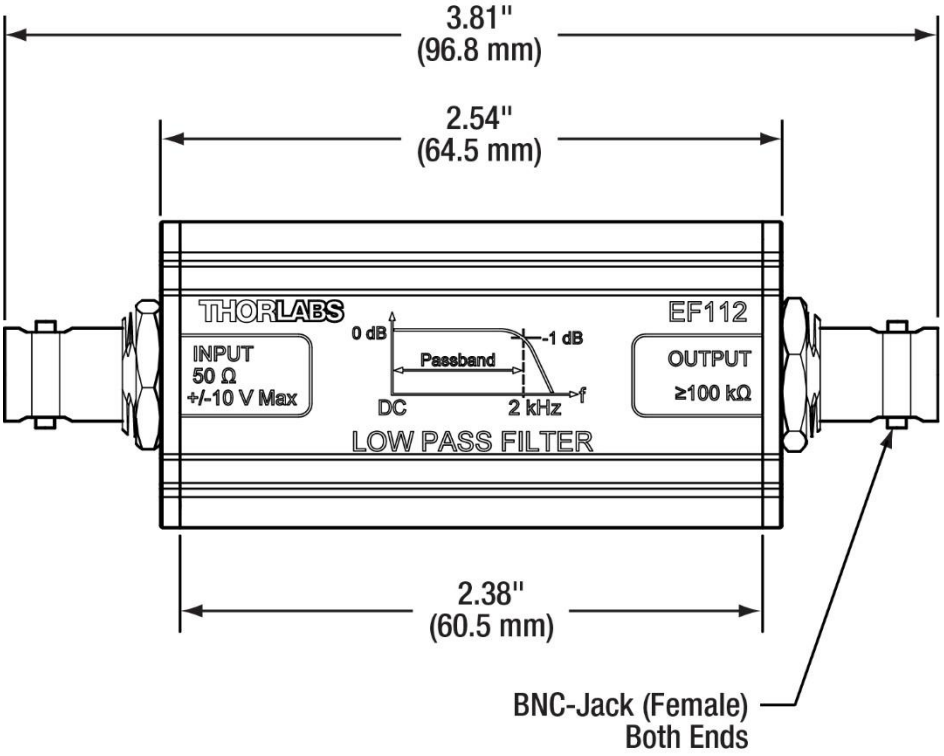
Freq. (kHz)	Rel. Resp. (dB)	Group Delay Variation (µs)
0.40	-0.13	0.00
0.47	-0.14	-2.75
0.55	-0.14	-1.83
0.64	-0.15	-3.88
0.74	-0.15	-1.53
0.84	-0.15	0.67
0.95	-0.14	7.17
1.06	-0.12	12.31
1.18	-0.10	17.24
1.41	-0.04	37.05
1.55	-0.01	50.93
1.71	0.00	72.54
2.00	-0.17	117.73
2.05	-0.27	131.17
2.15	-0.49	152.60
2.28	-1.00	183.03
2.44	-2.01	206.98
2.55	-2.96	209.42
2.69	-4.85	188.44
2.76	-6.08	166.24
3.23	-15.39	6.07
3.46	-20.39	-55.80

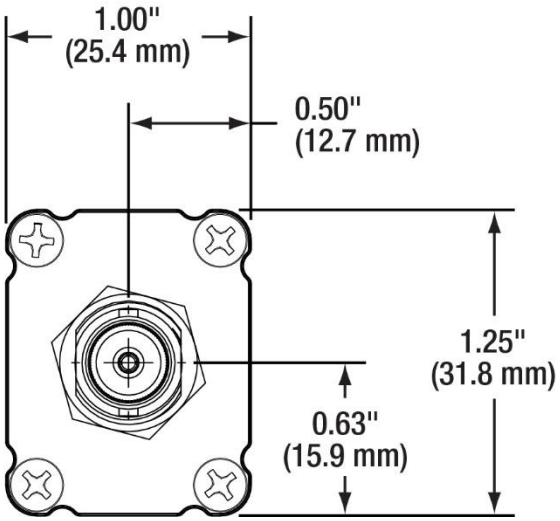
Freq. (kHz)	Rel. Resp. (dB)
3.88	-30.75
4.27	-40.70
4.61	-47.29
4.86	-46.49
5.21	-45.78
5.74	-46.72
6.20	-49.05
6.77	-53.09
7.38	-58.39
8.05	-64.92
8.71	-59.72
9.42	-56.74
10.19	-54.87
11.02	-53.28
11.92	-52.62
12.89	-52.18





Drawings


3.81"
(96.8 mm)
2.54"
(64.5 mm)
THORLABS
EF112
INPUT
50 Ω
+/-10 V Max
0 dB
Passband
-1 dB
DC
2 kHz
f
OUTPUT
≥100 kΩ
LOW PASS FILTER
2.38"
(60.5 mm)
BNC-Jack (Female)
Both Ends


1.00"
(25.4 mm)
0.50"
(12.7 mm)
1.25"
(31.8 mm)
0.63"
(15.9 mm)