1.8 MHz High-Pass Filter



EF509

Description

The EF509 High-Pass Filter employs a 6th order elliptic filter design. The design delivers excellent low-band rejection (>60 dB typ) with reduced group delay variation for passband transparency above 1.8 MHz. Uniquely, the EF509 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

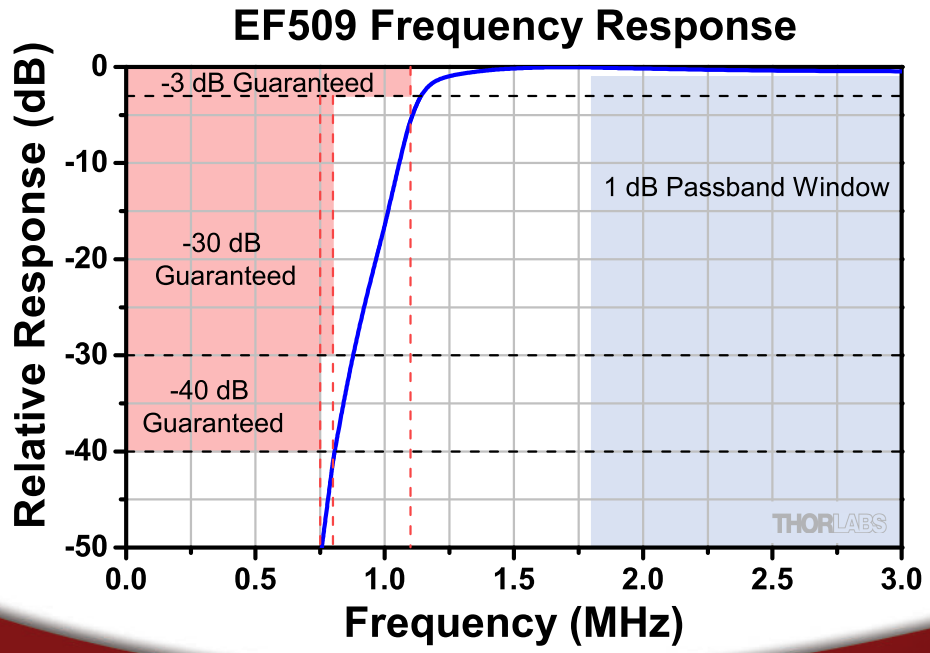
EFS501	
	Value[a]
Passband (1 dB Window)[b]	> 1.8 MHz
3 dB Rejection	<1.1 MHz
30 dB Rejection	<800 kHz
40 dB Rejection	< 750 kHz
Source Impedance (BNC Female)	50 Ω (Typical)
Load Impedance[c] (BNC Male)	≥100 kΩ (Typical)
Input Voltage	±10 V (Max)
Storage Temperature	-20 to +70 °C

a. Values measured at 25 °C.
b. 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.

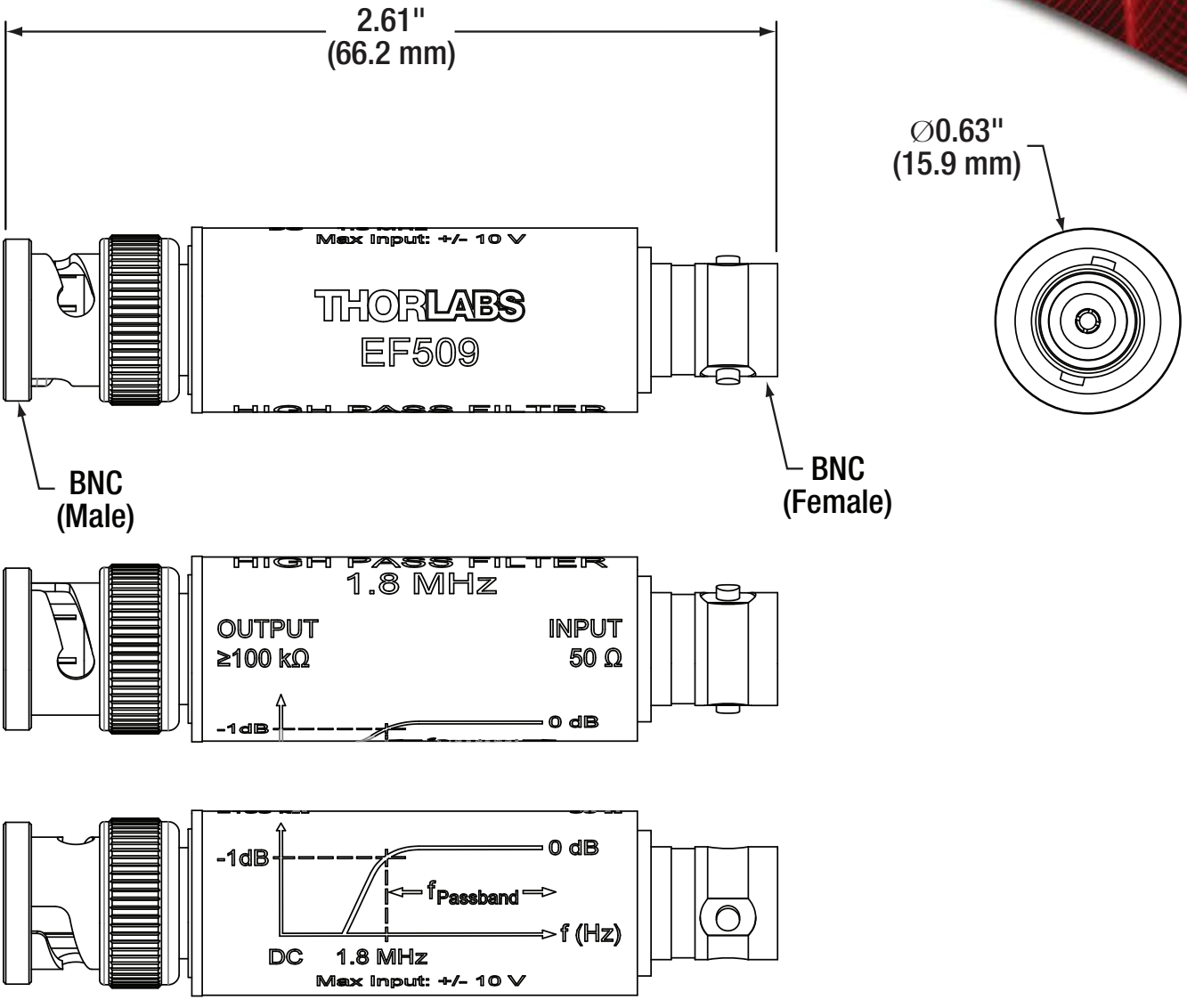
Sample Response Data

Frequency (Hz)	Rel. Resp. (dB)
200000	-69.70
210721.2	-68.09
229882.2	-65.46
250785.5	-65.22
273589.5	-64.52
298467.2	-62.53
744330.8	-52.53
750837	-51.30
757400.1	-50.04
798001.4	-41.45
804976.8	-40.30
812013.1	-39.08
870564	-30.71
933336.8	-23.43
1000636	-16.43
1009382	-15.36
1072788	-8.12
1091624	-6.30

Frequency (Hz)	Rel. Resp. (dB)	Group Delay Variation (ns)
1101166	-5.48	1683
1120501	-4.04	1732
1140175	-2.92	1707
1180567	-1.58	1508
1254725	-0.83	1078
1380782	-0.41	646
1454801	-0.22	521
1643310	0.00	363
1792737	-0.04	282
1808407	-0.05	275
1990091	-0.18	223
2539246	-0.44	128
3211863	-0.46	76
3628047	-0.42	60
4098159	-0.37	44
4589074	-0.33	37
5094265	-0.27	29
5754365	-0.25	23
6443675	-0.22	19



Drawings


2.61"
(66.2 mm)
∅0.63"
(15.9 mm)
Max Input: +/- 10 V
THORLABS
EF509
BNC
(Male)
BNC
(Female)
HIGH PASS FILTER
1.8 MHz
OUTPUT
≥100 kΩ
INPUT
50 Ω
-1dB
0 dB
-1dB
0 dB
fPassband
f (Hz)
DC
1.8 MHz
Max Input: +/- 10 V