500 kHz High-Pass Filter



EF507

Description

The EF507 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 500 kHz. Uniquely, the EF507 is designed to terminate into DAQ systems, lab equipment, oscilloscopes, 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

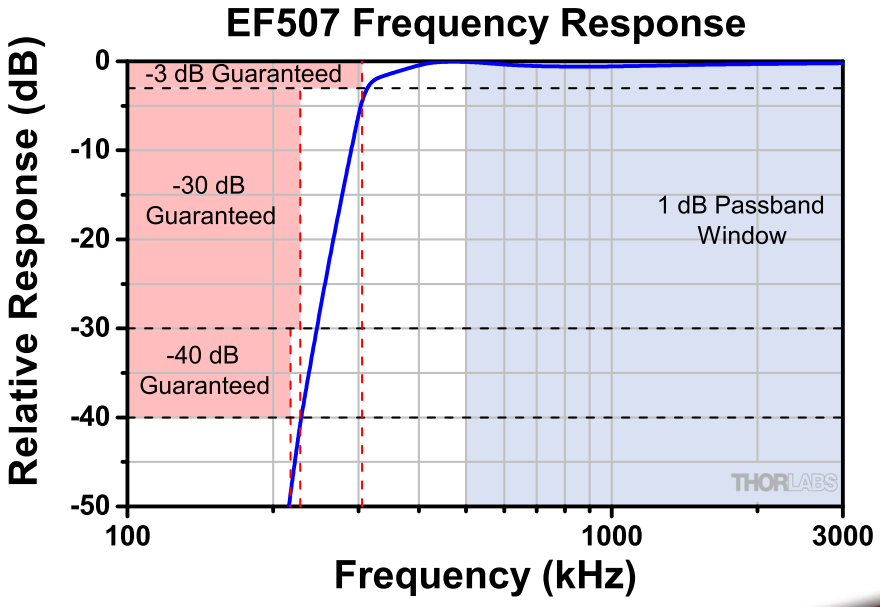
EF507	
	Value[a]
Passband (1 dB Window)[b]	>500 kHz
3 dB Rejection	<305 kHz
30 dB Rejection	<227.5 kHz
40 dB Rejection	<217 kHz
Source Impedance (BNC Female)	50 Ω (Typical)
Load Impedance[c] (BNC Male)	≥100 kΩ (Typical)
Input Voltage	±10 V (Max)
Storage Temperature	-20 to +70 °C

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.

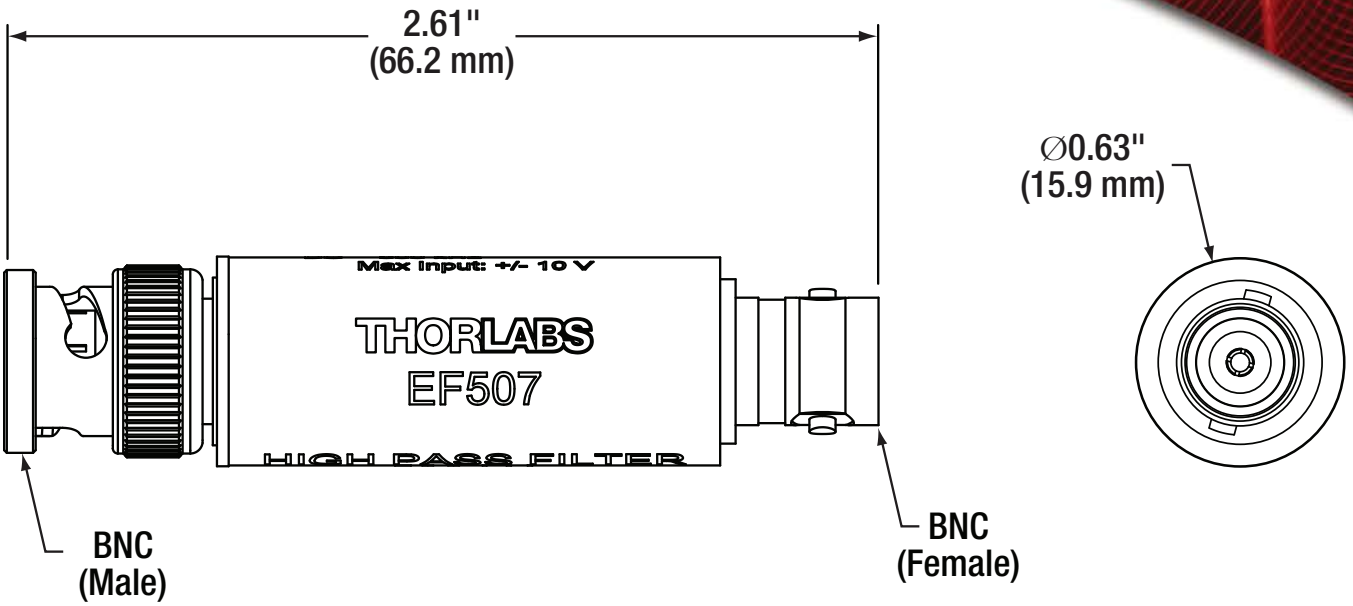
Sample Response Data

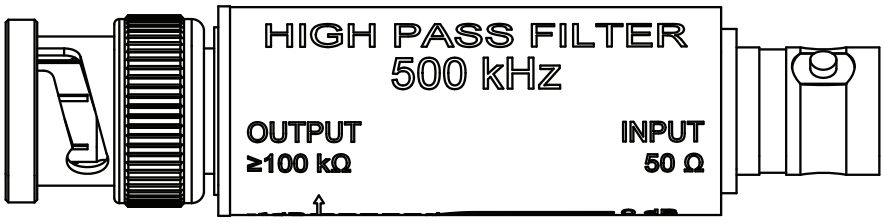
Frequency (kHz)	Rel. Resp. (dB)
100.0	-58.7
108.1	-59.0
118.0	-59.9
128.7	-61.8
140.4	-67.4
153.2	-75.1
167.1	-62.2
213.2	-52.2
215.1	-50.5
217.0	-48.7
226.6	-41.3
228.6	-39.8

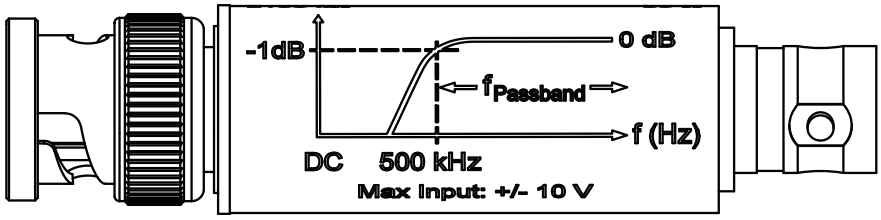
Frequency (kHz)	Rel. Resp. (dB)	Group Delay Variation (ns)
258.2	-23.3	2643.6
299.4	-6.2	6271.1
304.7	-4.5	6680.4
312.7	-2.9	6558.0
323.8	-2.0	5369.6
344.1	-1.5	3654.7
372.2	-0.9	2581.7
409.6	-0.3	1787.9
442.9	0.0	1397.6
500.3	0.0	1023.1
560.3	-0.2	756.6
611.2	-0.4	615.0
666.8	-0.5	497.1
727.4	-0.6	399.3
821.7	-0.6	300.4
969.4	-0.6	201.7
1003.7	-0.6	182.9
1205.0	-0.5	116.3
1578.2	-0.4	59.6
2067.0	-0.3	25.2
2707.1	-0.2	6.5
3166.2	-0.2	-0.3



Drawings


2.61"
(66.2 mm)
Max Input: +/- 10 V
THORLABS
EF507
HIGH PASS FILTER
BNC
(Male)
BNC
(Female)
∅0.63"
(15.9 mm)


HIGH PASS FILTER
500 kHz
OUTPUT
≥100 kΩ
INPUT
50 Ω


-1dB
0 dB
fPassband
f (Hz)
DC
500 kHz
Max Input: +/- 10 V