5 kHz High-Pass Filter

EF115



Description

The EF115 High-Pass Filter employs a modified 6th order elliptic filter design. The design delivers excellent low-band rejection (>55 dB typical) and good group delay. Uniquely, the EF115 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

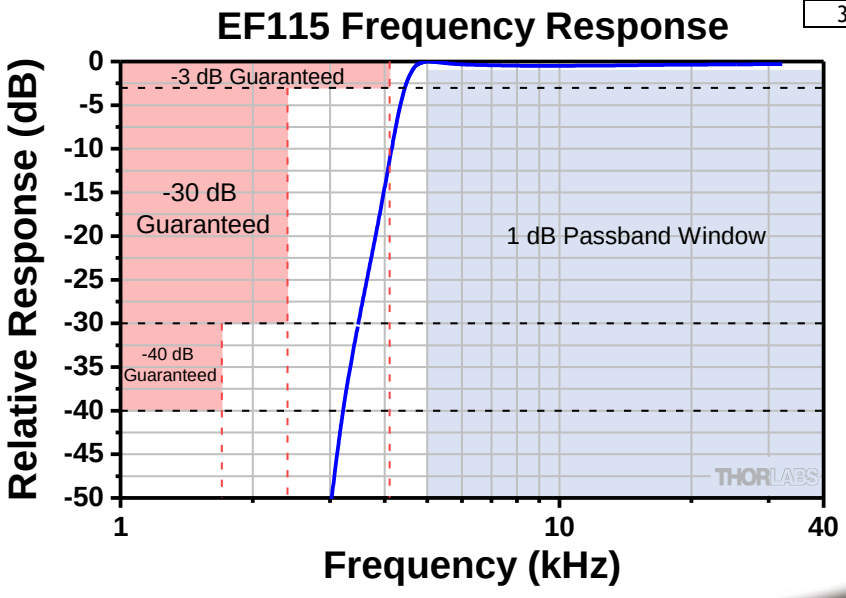
EF115	
	Value[a]
Passband (1 dB Window)[b]	>5.0 kHz
3 dB Rejection	<4.1 kHz
30 dB Rejection	<2.4 kHz
40 dB Rejection	<1.7 kHz
Source Impedance (BNC Female)	50 Ω (Typical)
Load Impedance[c] (BNC Female)	≥100 kΩ (Typical)
Input Voltage	±10 V (Max)
Storage Temperature	-20 to +70 °C

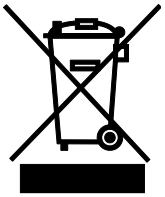
a. Values measured at 25 °C.
b. Please see the 1 dB Window Exceptions graph on page 2 for details.
c. This filter can be operated with termination resistances below 1 kΩ; however, the passband will narrow at smaller termination resistances and the performance is not guaranteed.

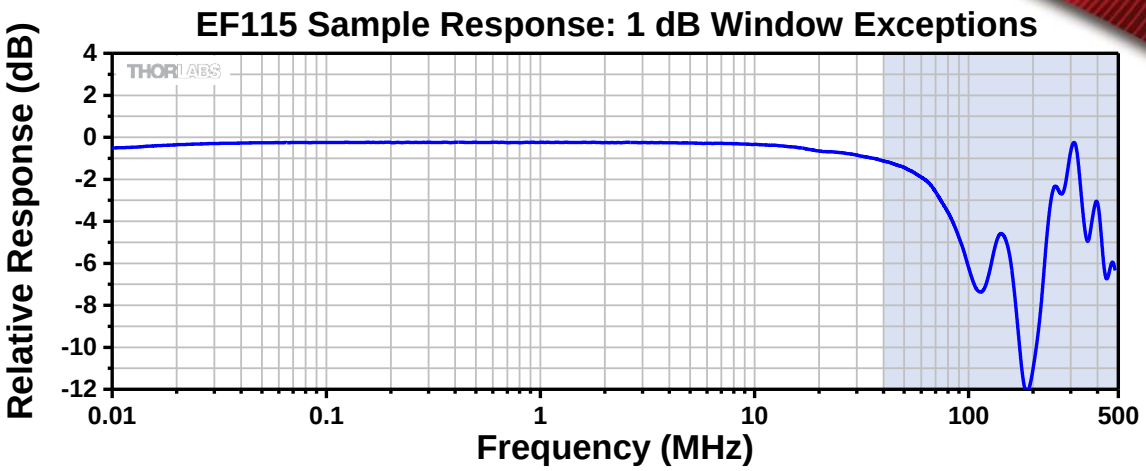
Sample Response Data

Freq. (kHz)	Rel. Resp. (dB)
1.00	-58.84
1.10	-58.21
1.21	-57.62
1.32	-56.89
1.44	-56.82
1.59	-57.02
1.73	-57.60
1.89	-58.80
2.06	-60.34
2.25	-59.42
2.45	-56.38
2.67	-56.08
2.92	-56.84
3.10	-45.73
3.21	-40.17
3.29	-36.56
3.47	-30.21
3.66	-24.59

Freq. (kHz)	Rel. Resp. (dB)	Group Delay Variation (µs)
3.89	-17.92	238.98
4.06	-12.52	344.61
4.28	-6.47	422.90
4.32	-5.56	425.89
4.43	-3.23	401.75
4.51	-2.06	374.77
4.63	-0.91	326.66
4.71	-0.47	299.26
4.79	-0.21	272.73
4.96	-0.01	230.92
5.00	0.00	205.70
5.05	0.00	196.14
5.32	-0.11	155.91
5.55	-0.21	132.05
5.80	-0.31	113.37
6.44	-0.40	82.42
8.36	-0.49	41.30
9.36	-0.51	30.92
12.92	-0.47	15.48
15.92	-0.41	9.88
18.62	-0.37	7.40
21.03	-0.35	5.40
22.55	-0.34	4.94
24.60	-0.33	3.87
26.15	-0.32	3.72
29.02	-0.31	2.77
32.22	-0.30	2.29







1 dB exceptions will vary from production run to production run. Beyond 40 MHz, variance can increase as frequency increases to 500 MHz. The shaded region in the plot above indicates the region in which exceptions to the 1 dB window are likely to occur.

Drawings

