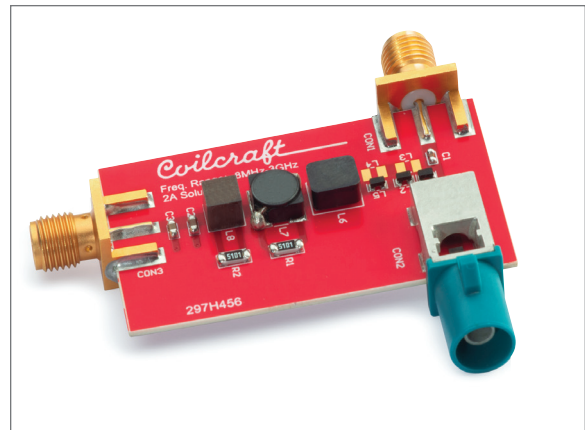


PoC Filter Solution – SMD-POC-040

Overview

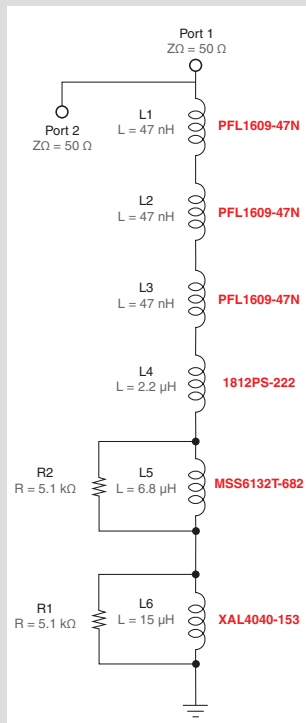
The SMD-POC-040 is for PoC applications spanning a 8 MHz to 3 GHz frequency range, injecting a current of 2 Amps at 85°C. The impedance measurement was generated in simulation using measured Z-parameter files for each component. S-Parameters were generated by taking two SMD-POC-040 boards connected by Leoni Decar-302 coaxial cable. Using a DC Power supply, the DC_{in} was connected to CON3 of the first board, while the DC_{out} was connected to the CON3 of the second board to close the circuit. All measurements were at room temperature and are considered typical responses for the solutions.



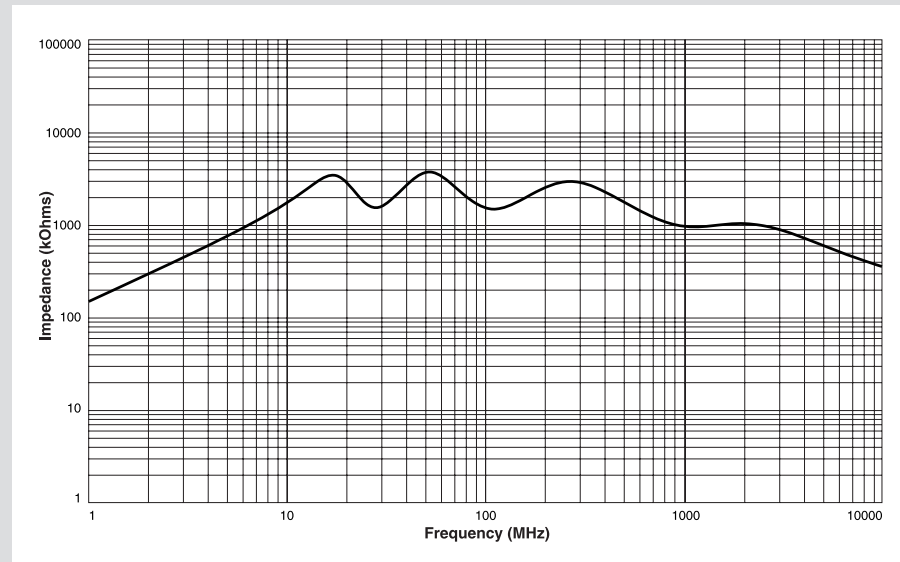
Coilcraft 2 A at 85°C Solution

Inductors	DCR max. (Ohms)	Max. Area (mm ²)	Isat (A) 30%		Irms (A)		Notes
			25°C	125°C	25°C	125°C	
PFL1609-47N (47 nH)	0.028	1.926	2.9	1.7	3.6 (40°C rise)	1.80 (15°C rise)	PFL1609-47N x3
1812PS-222 (2.2 µH)	0.070	29.23	3.0	2.2	2.4 (40°C rise)	1.73 (15°C rise)	
MSS6132T-682 (6.8 µH)	0.052	42.25	2.3	1.93	2.8 (40°C rise)	1.47 (15°C rise)	5.1 kΩ resistor in parallel
XAL4040-153 (15 µH)	0.120	18.49	2.8	2.6	2.8 (40°C rise)	1.80 (15°C rise)	5.1 kΩ resistor in parallel
Totals:	0.326	95.7					

Schematic

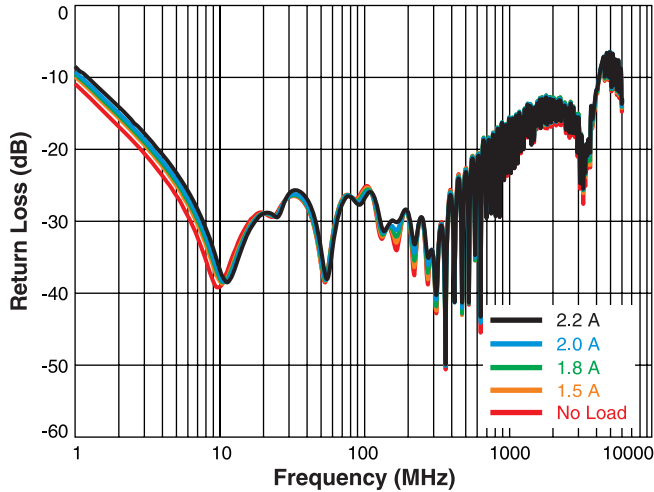


Impedance vs. Frequency

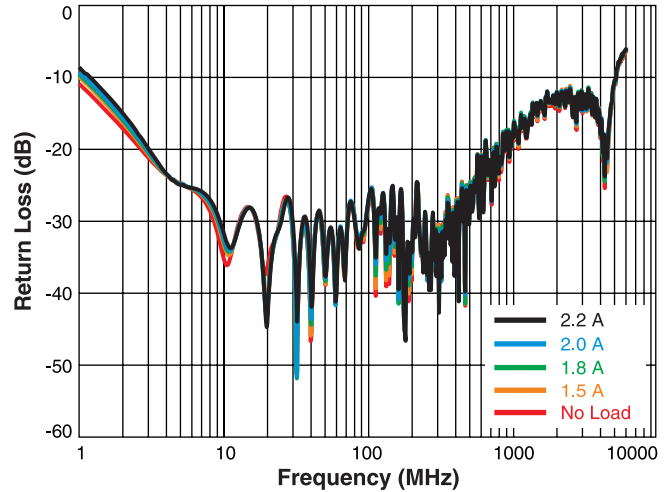


PoC Filter Solution – SMD-POC-040

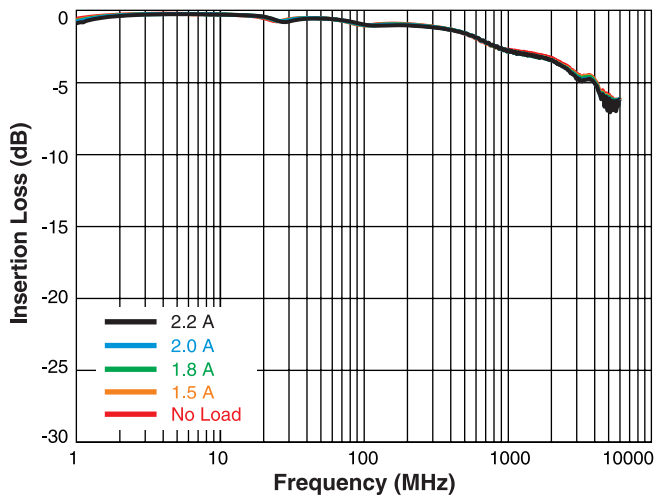
Return Loss (2 m cable)



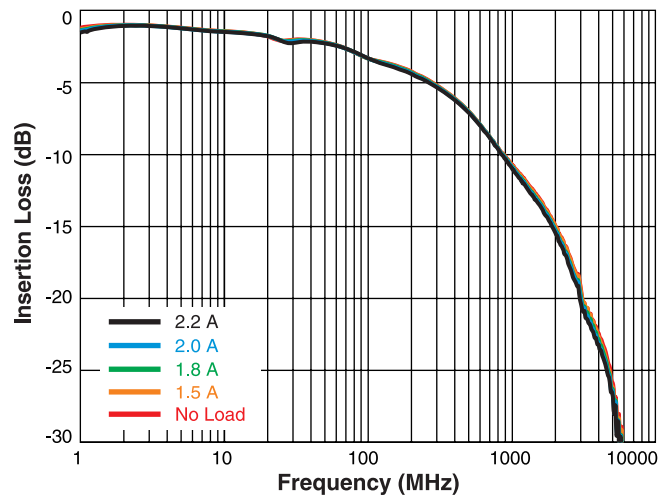
Return Loss (10 m cable)



Insertion Loss (2 m cable)



Insertion Loss (10 m cable)



PoC Filter Solution – SMD-POC-040

S-Parameters (2 A, 2 m cable at temperature)

