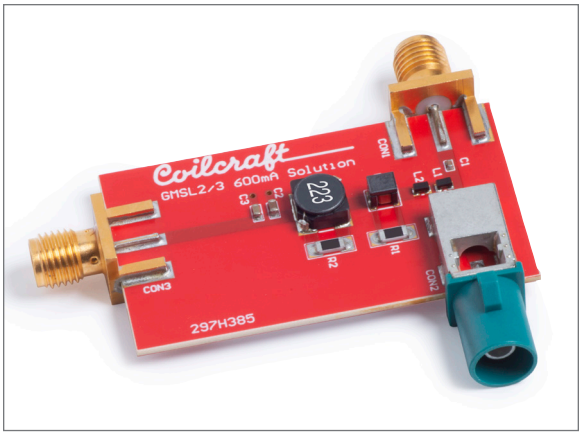
PoC Filter Solution – SMD-POC-006

Overview

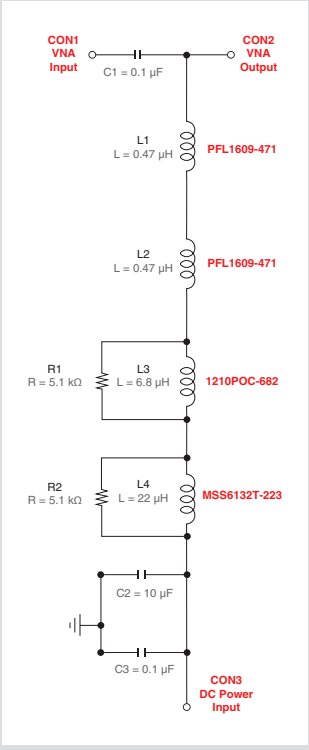
The SMD-POC-006 is for PoC applications spanning an 8 MHz to 3 GHz frequency range, injecting a current of 0.6 Amps. The impedance measurement was generated in simulation using measured Z-Parameter files for each component. S-Parameters were generated by taking two SMD-POC-006 boards connected by a Leoni Dacar-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 solution.



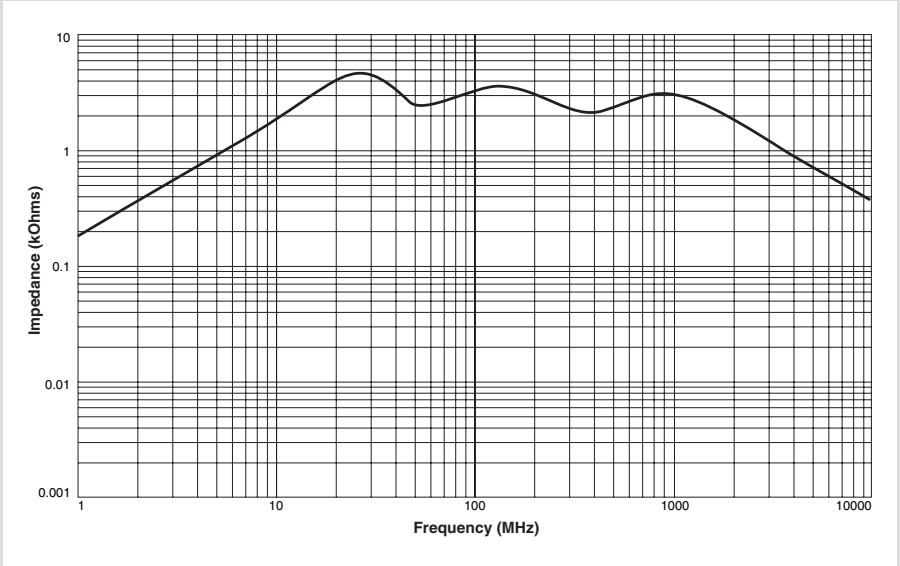
Coilcraft 600 mA Solution

Inductors	DCR max. (Ohms)	Max. Area (mm^2)	Isat (A) 30%		Irms (A)		Notes
			25°C	125°C	25°C	125°C	
PFL1609-471 (0.47 µH)	0.100	1.926	1.20	0.63	1.30 (40°C rise)	0.73 (15°C rise)	
PFL1609-471 (0.47 µH)	0.100	1.926	1.20	0.63	1.30 (40°C rise)	0.73 (15°C rise)	
1210POC-682 (6.8 µH)	0.240	8.811	1.40	0.80	1.36 (40°C rise)	0.80 (15°C rise)	5.1 kΩ resistor in parallel
MSS6132T-223 (22 µH)	0.158	42.250	1.22	1.10	1.90 (40°C rise)	1.61 (40°C rise)	5.1 kΩ resistor in parallel
Totals:	**0.598**	**54.913**					

Schematic



Impedance vs. Frequency



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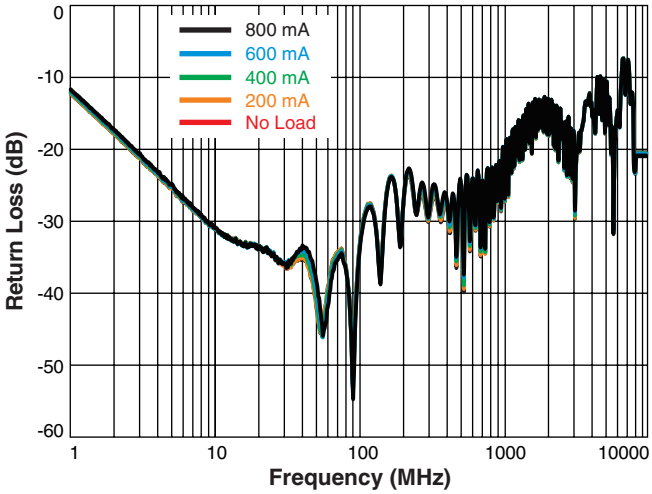
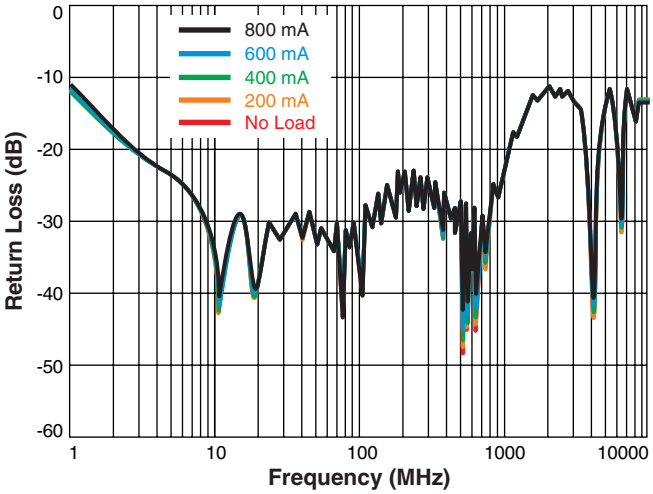
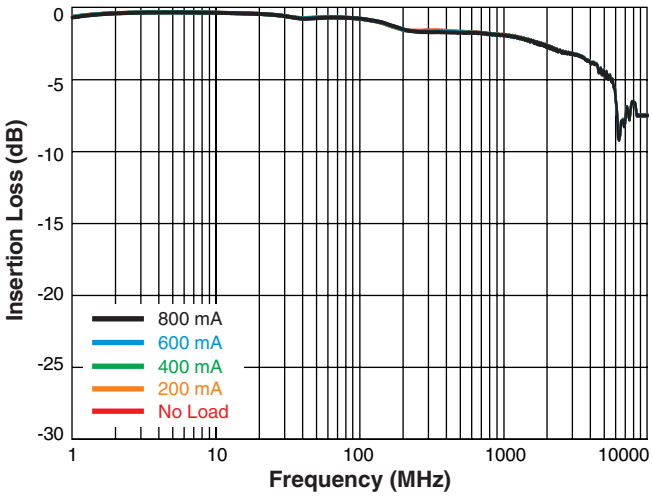
Return Loss (2 m cable)



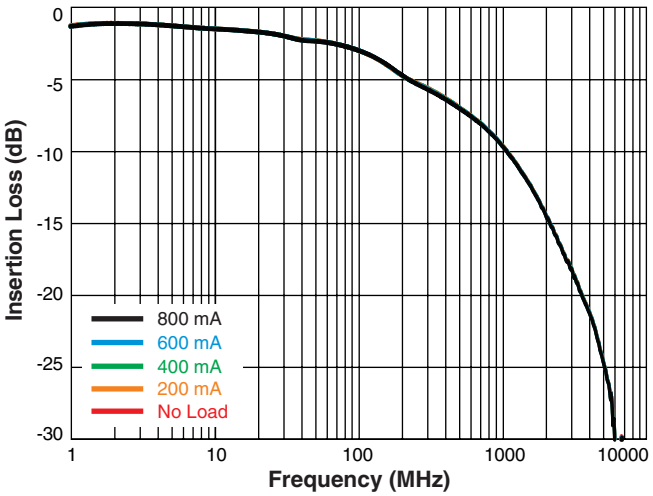
Return Loss (10 m cable)



Insertion Loss (2 m cable)



Insertion Loss (10 m cable)



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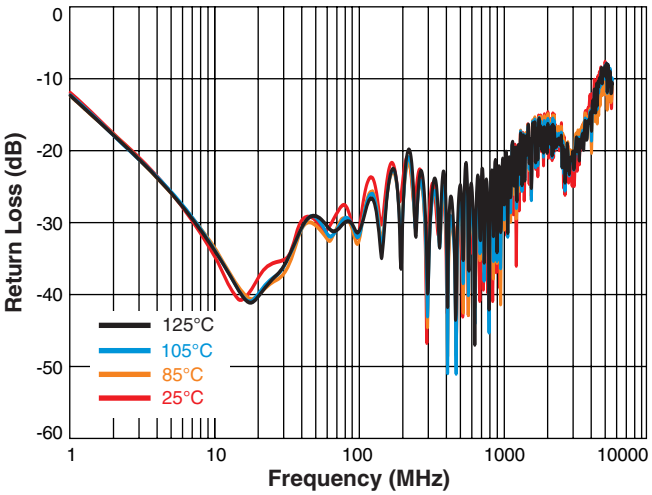
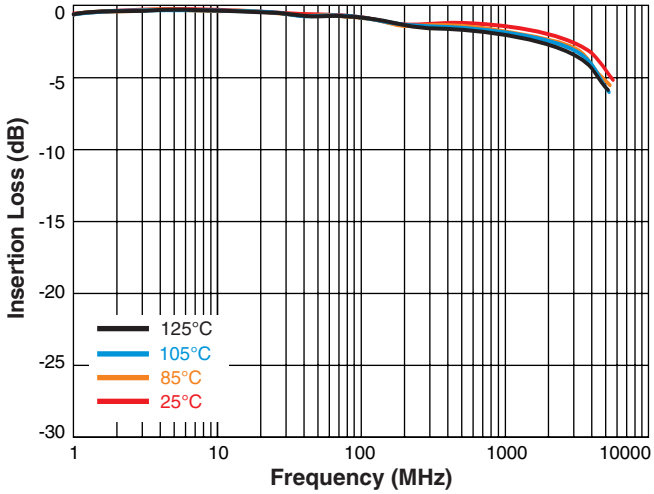
PoC Filter Solution – SMD-POC-006

S-Parameters (600 mA, 2 m cable at temperature)





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