

Power over coax (PoC) filter solution for automotive application

SMD-POC-022S

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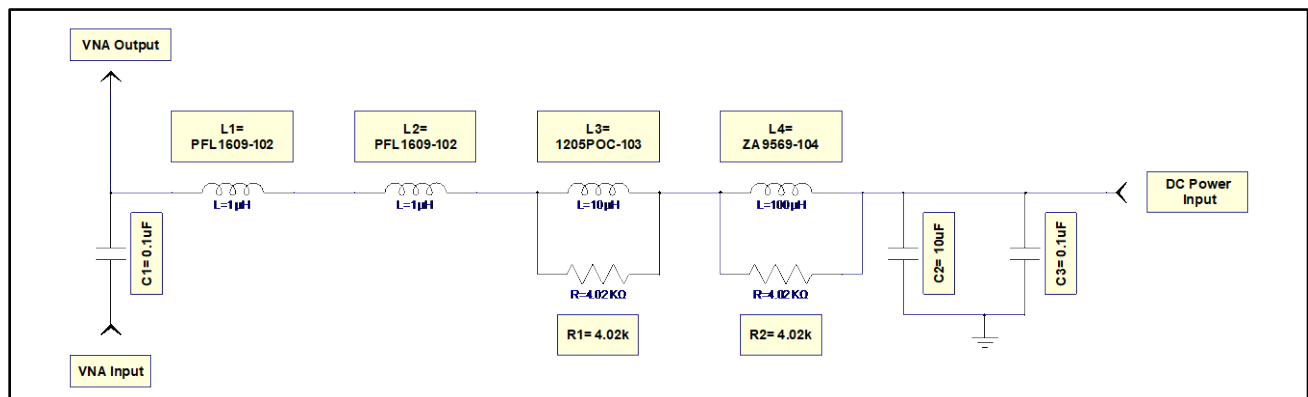
Overview:

Following application is designed to cover the frequency range from 8 MHz to 3 GHz for an impedance of 1kΩ, and 0.3A max current. The measurement of S-parameters are done on complete POC system in which two solution boards are connected through 2m length of Leoni Decar-302 automotive cable. In complete POC system, max rating of the current are injected to get S-parameters under loads at different temperatures.

Coilcraft Solution:

Inductors	DCR (Ohms) (max)	Max area (mm ²)	Current (A)		Notes
			I _{rms}	I _{sat} (30%)	
PFL1609-102 (1uH)	0.230	1.926	0.650 (20C rise)	0.760	4.02k resistor in parallel 4.02k resistor in parallel
PFL1609-102 (1uH)	0.230	1.926	0.650 (20C rise)	0.760	
1205POC-103 (10uH)	1.000	4.48	0.560 (40C rise)	0.670	
ZA9569-104 (100uH)	0.500	15.81	0.90 (40C rise)	0.430	
Total	1.935	24.14			

Schematic:



POC System S-Parameters Measurements at Different Temperatures:-

