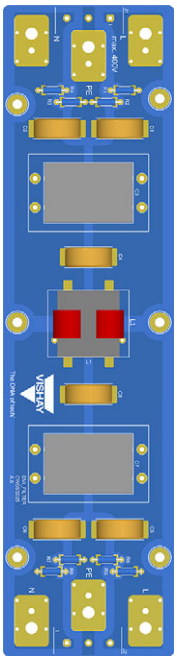
Reference Design
Single-Stage, Single-Phase EMI Filter



FEATURES

- Versatile PCB to test different filter designs based on Vishay's ICMS2321ABEH481N10 common mode chokes, film, and ceramic capacitors
- The user can test the prebuild design and easily alter the components used to customize according to their needs and application
- The footprints are chosen in such a way that a wide variety of capacitors can be used

EMI FILTER DESIGN APPLICATION NOTES

- Application Note 01 (TBD)
- Application Note 02 (TBD)

In-depth design procedures for both common mode as well as differential mode filtering for this design can be found in the two application notes above.

KEY COMPONENTS

- ICMS2321 common mode choke
- AY1 series Automotive Grade EMI suppression safety capacitor
- MKP339 X2 interference suppression film capacitors
- MBB0207 leaded metal film resistor

LINKS TO ADDITIONAL RESOURCES

- EMIF-1S1P-481N

DESCRIPTION

This evaluation board provides a rapid prototyping solution for single-phase, single-stage filters, leveraging the 480 nH ICMS2321 common mode choke. The board is equipped with a set of THT X and Y capacitors placed around the common mode choke to form a full filter that can be tested out of the box. The datasheet contains the measurements for the provided filter design. It also links to design guides that detail the design procedure for both common mode and differential mode filters. Filters designed by following the steps outlined in the documentation can be efficiently tested by modifying the capacitance values on the board.

MEASUREMENTS

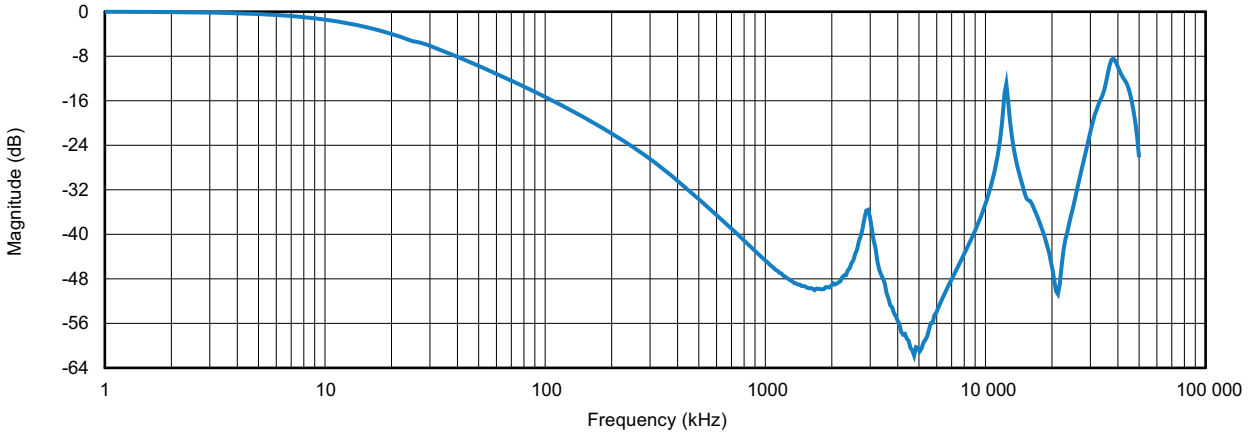


Fig. 1 - EMIF-1S1F-481N Common Mode Transfer Function

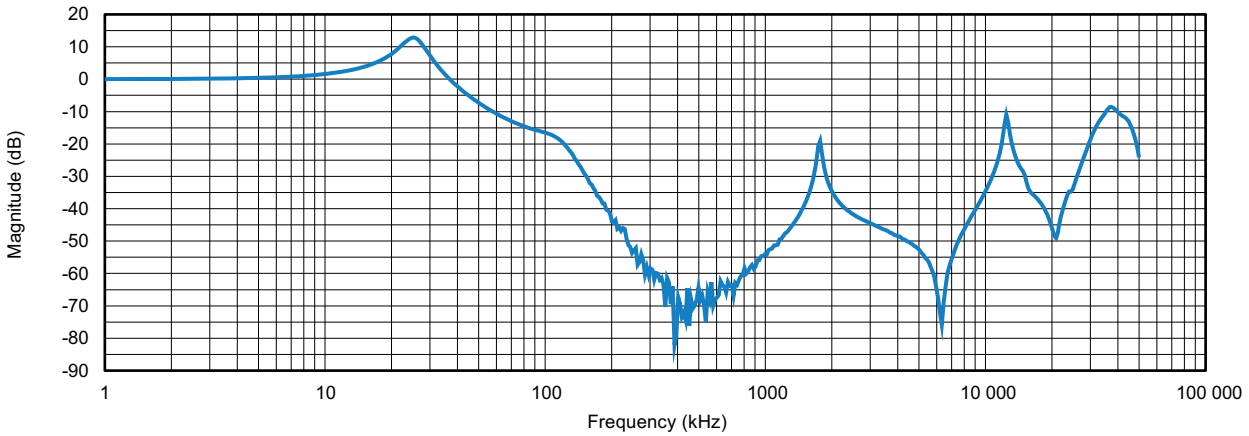


Fig. 2 - EMIF-1S1F-481N Common Mode Transfer Function

SCHEMATIC

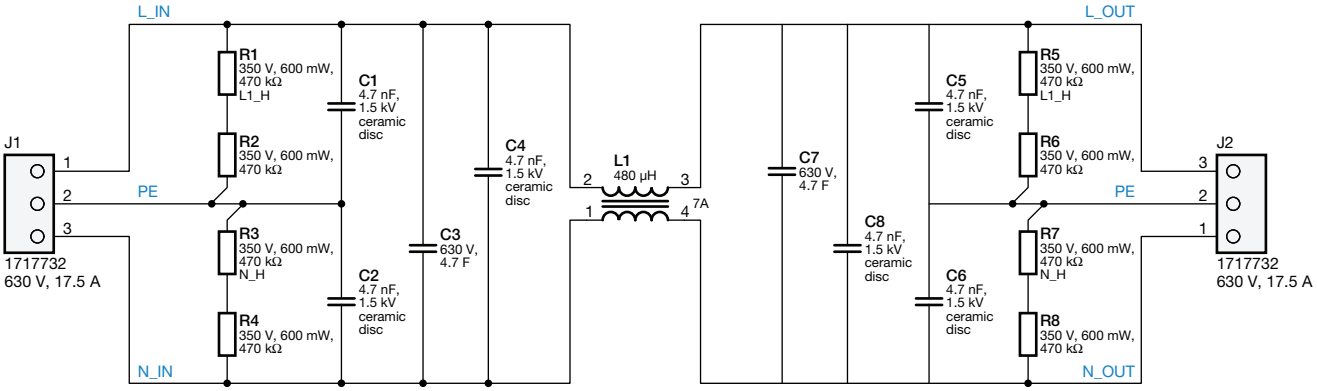


Fig. 3 - EMIF-1S1F-481N Schematic

ELECTRICAL CHARACTERISTICS

RECOMMENDED OPERATING RANGE			
PARAMETER	**MIN.**	**MAX.**	**UNIT**
DCLINK+ to DCLINK-	25	400	V

AVAILABLE REFERENCE DESIGN KITS	
REFERENCE DESING	**DESCRIPTION**
EMIF-1S1P-481N	Single-stage, single-phase EMI Filter based on the ICMS2321ABEH481N10

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