

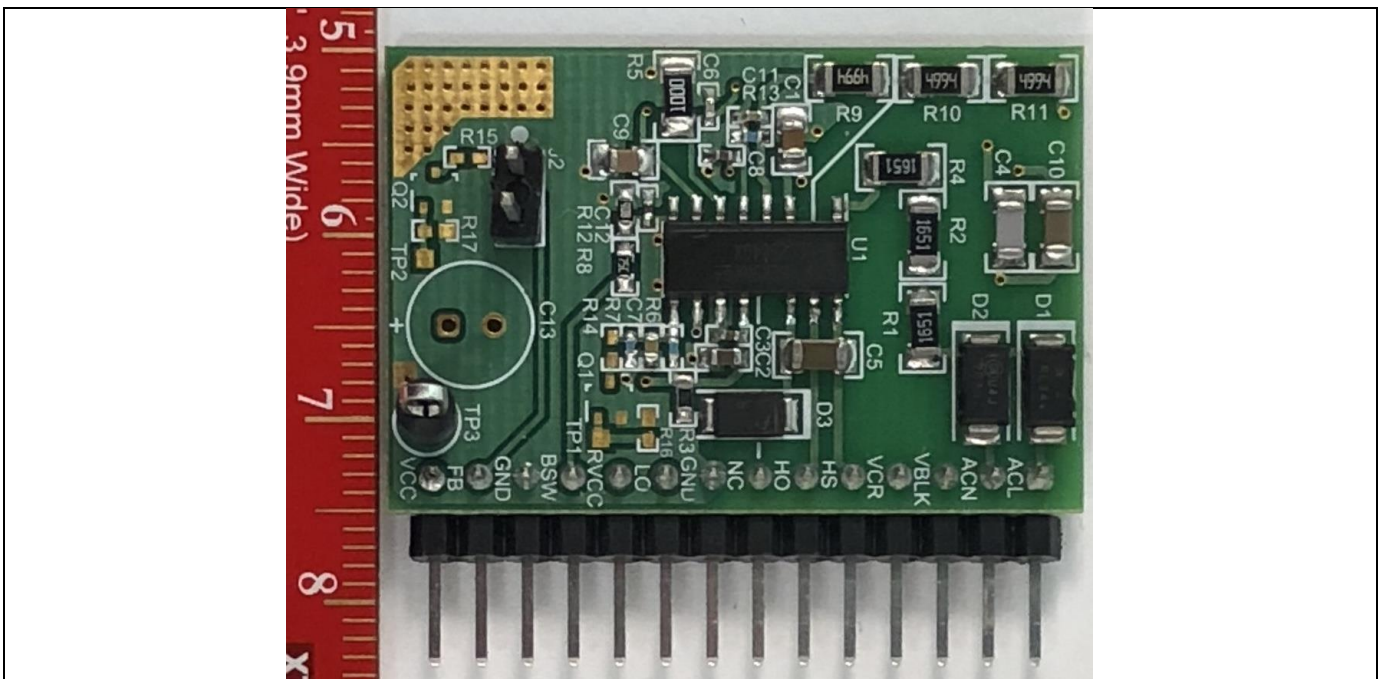
Test Report: PMP22088

LLC Resonant Converter Control Card Reference Design



Description

PMP22088 is a control card for LLC converter. It integrates all of the essential functions for controlling a LLC converter including the HV start-up, X-capacitor discharge and the drivers for the power FETs. By employing the advanced burst mode, it can also help the LLC converter to achieve ultra-low standby power even with PFC on. Furthermore, PMP22088 is very flexible for user to evaluate and suitable for any power rating of a LLC power board. It is easy to set up bench test with existing power stage by simple connections.



1 System Specification

1.1 Board Dimension:

1" x 1.5"

1.2 Test Waveforms are based on PMP22087 board.



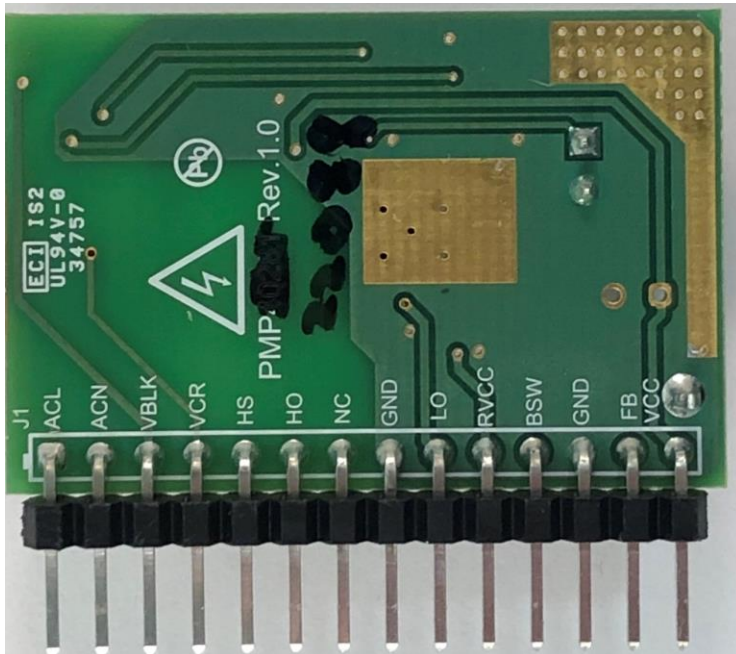
An IMPORTANT NOTICE at the end of this TI reference design addresses authorized use, intellectual property matters and other important disclaimers and information.

2 Testing and Results

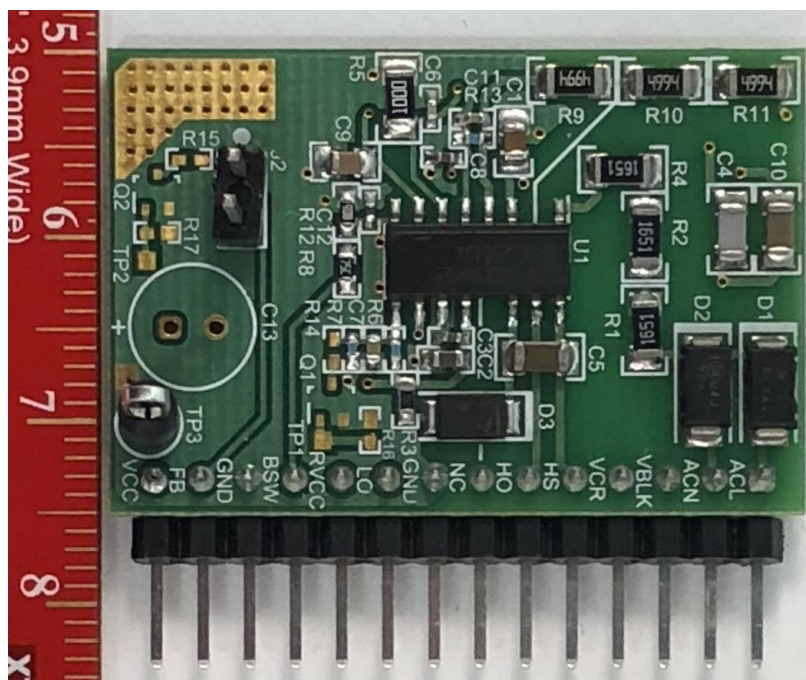
2.1 Board Photos

The photographs below show the top and bottom view of the PMP22088Rev A board. PMP22088Rev A circuit is built on PMP40281Rev 1.0 PCB board.

2.1.1 Top Side



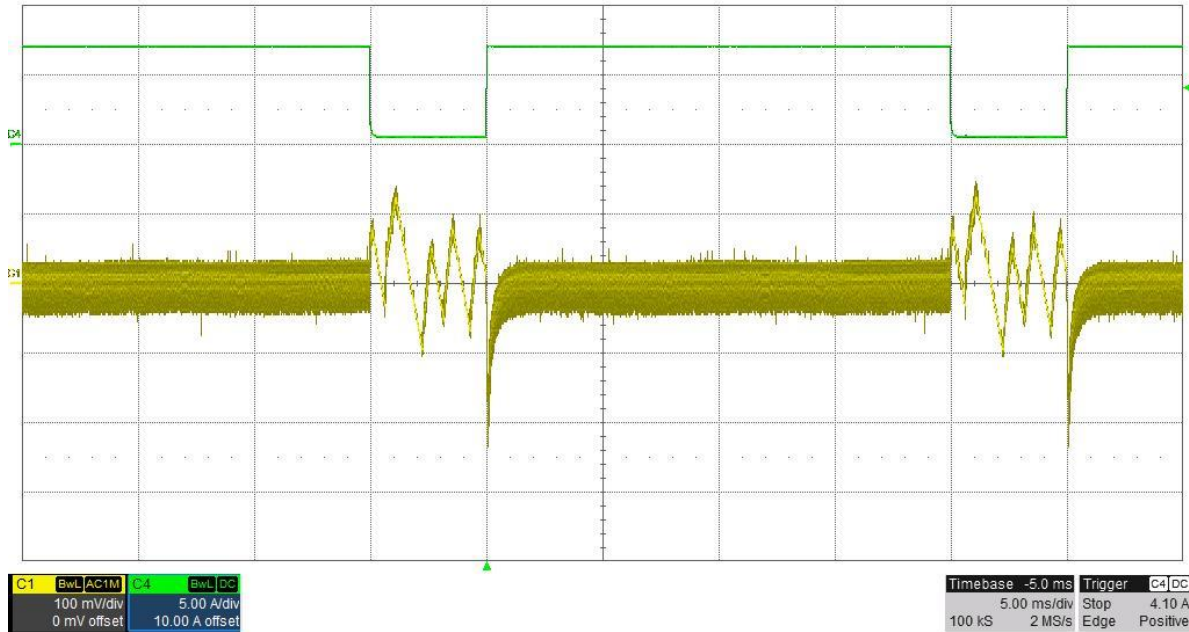
2.1.2 Bottom Side



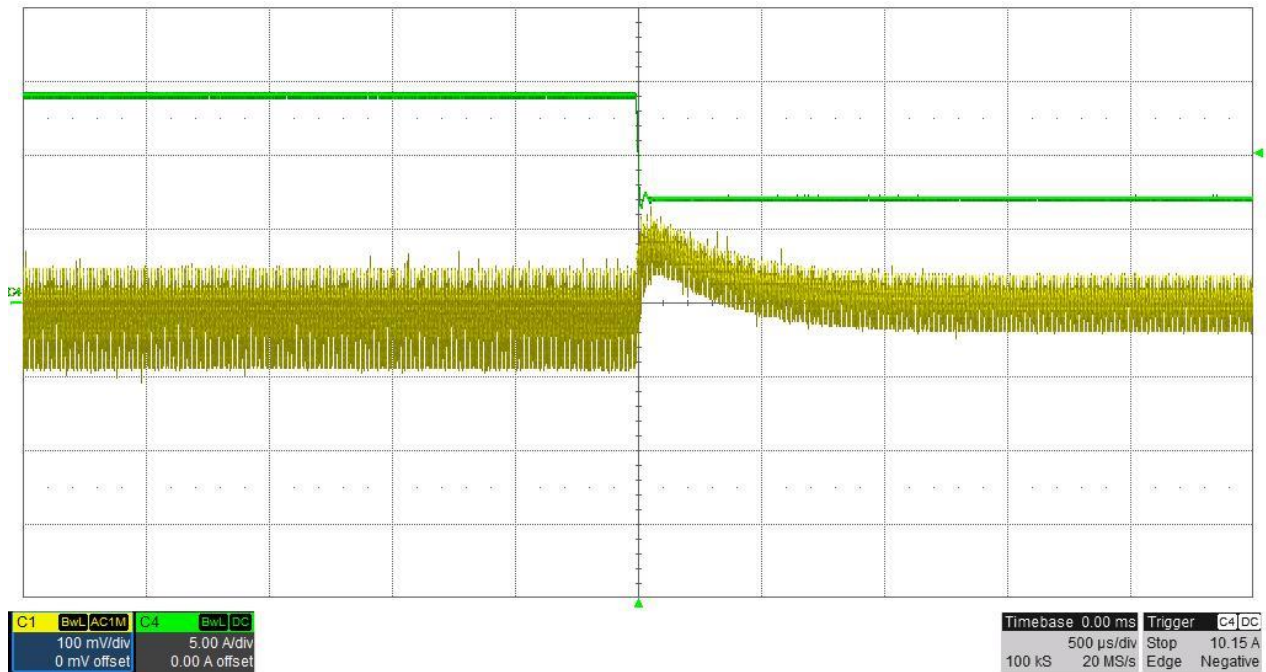
2.2 Load Response

Load response is tested at 230V_{AC}/50Hz input, where Channel 3 is the output voltage in AC level and Channel 4 is output current.

2.2.1 Load step from 0.1A to 7A:

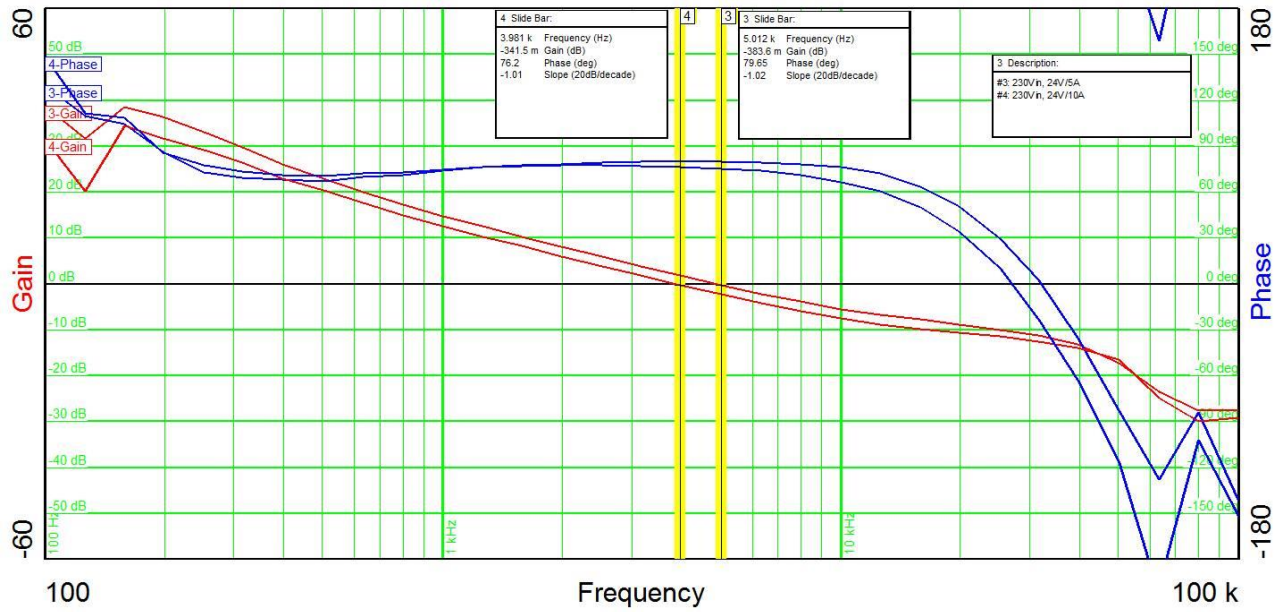


2.2.2 Load step from 7A to 14A:



2.3 Frequency Response

Frequency response of the LLC-SRC stage is tested with 230V_{AC}/50Hz input. Signal was injected on R215.



IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (<https://www.ti.com/legal/termsofsale.html>) or other applicable terms available either on [ti.com](https://www.ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2021, Texas Instruments Incorporated