MCP1632
300 kHz Boost Converter
Demo Board
User's Guide

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as "unbreakable."

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Trademarks

Printed on recycled paper.

ISBN: 978-1-62077-8401

QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV

== ISO/TS 16949 ==

Microchip received ISO/TS-16949:2009 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC® MCUs and dsPIC® DSCs, KEELOQ® code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.

Object of Declaration: MCP1632 300 kHz Boost Converter Demo Board User's Guide

EU Declaration of Conformity

This declaration of conformity is issued by the manufacturer.
The development/evaluation tool is designed to be used for research and development in a laboratory environment. This development/evaluation tool is not intended to be a finished appliance, nor is it intended for incorporation into finished appliances that are made commercially available as single functional units to end users. This development/evaluation tool complies with EU EMC Directive 2004/108/EC and as supported by the European Commission's Guide for the EMC Directive 2004/108/EC (8^{th} February 2010).
This development/evaluation tool complies with EU RoHS2 Directive 2011/65/EU.
For information regarding the exclusive, limited warranties applicable to Microchip products, please see Microchip's standard terms and conditions of sale, which are printed on our sales documentation and available at www.microchip.com.
Signed for and on behalf of Microchip Technology Inc. at Chandler, Arizona, USA

Derek Carlson
Derek Carlson
VP Development Tools

16-July-2013
Date

NOTES:

Table of Contents

NOTES:

Preface

NOTICE TO CUSTOMERS

All documentation becomes dated, and this manual is no exception. Microchip tools and documentation are constantly evolving to meet customer needs, so some actual dialogs and/or tool descriptions may differ from those in this document. Please refer to our web site (www.microchip.com) to obtain the latest documentation available.

Documents are identified with a "DS" number. This number is located on the bottom of each page, in front of the page number. The numbering convention for the DS number is "DSXXXXXA", where "XXXXX" is the document number and "A" is the revision level of the document.

For the most up-to-date information on development tools, see the MPLAB® IDE online help. Select the Help menu, and then Topics to open a list of available online help files.

INTRODUCTION

This chapter contains general information that will be useful to know before using the MCP1632 300 kHz Boost Converter Demo Board. Items discussed in this chapter include:

- Document Layout
- Conventions Used in this Guide
- Recommended Reading
- The Microchip Web Site
- Customer Support
- Document Revision History

DOCUMENT LAYOUT

This document describes how to use the MCP1632 300 kHz Boost Converter Demo Board as a development tool to emulate and debug firmware on a target board. The manual layout is as follows:

- **Chapter 1. "Product Overview"** – Shows a brief description of the MCP1632 300 kHz Boost Converter Demo Board.
- **Chapter 2. "Installation and Operation"** – Includes instructions on how to get started with the MCP1632 300 kHz Boost Converter Demo Board.
- **Appendix A. "Schematic and Layouts"** – Shows the schematic and layout diagrams for the MCP1632 300 kHz Boost Converter Demo Board.
- **Appendix B. "Bill of Materials"**– Lists the parts used to build the MCP1632 300 kHz Boost Converter Demo Board.
- **Appendix C. "Typical Performance Data, Curves and Waveforms"** – Shows the typical performance graphs.

CONVENTIONS USED IN THIS GUIDE

This manual uses the following documentation conventions:

DOCUMENTATION CONVENTIONS

<table>
<tr><th>Description</th><th>Represents</th><th>Examples</th></tr>
<tr><td colspan="3">Arial font:</td></tr>
<tr><td rowspan="2">Italic characters</td><td>Referenced books</td><td>MPLAB® IDE User’s Guide</td></tr>
<tr><td>Emphasized text</td><td>...is the only compiler...</td></tr>
<tr><td rowspan="3">Initial caps</td><td>A window</td><td>the Output window</td></tr>
<tr><td>A dialog</td><td>the Settings dialog</td></tr>
<tr><td>A menu selection</td><td>select Enable Programmer</td></tr>
<tr><td>Quotes</td><td>A field name in a window or dialog</td><td>“Save project before build”</td></tr>
<tr><td>Underlined, italic text with right angle bracket</td><td>A menu path</td><td><u>File>Save</u></td></tr>
<tr><td rowspan="2">Bold characters</td><td>A dialog button</td><td>Click OK</td></tr>
<tr><td>A tab</td><td>Click the Power tab</td></tr>
<tr><td>N‘Rnnnn</td><td>A number in verilog format, where N is the total number of digits, R is the radix and n is a digit.</td><td>4‘b0010, 2‘hF1</td></tr>
<tr><td>Text in angle brackets < ></td><td>A key on the keyboard</td><td>Press <Enter>, <F1></td></tr>
<tr><td colspan="3">Courier New font:</td></tr>
<tr><td rowspan="7">Plain Courier New</td><td>Sample source code</td><td><code>#define START</code></td></tr>
<tr><td>Filenames</td><td><code>autoexec.bat</code></td></tr>
<tr><td>File paths</td><td><code>c:\mcc18\h</code></td></tr>
<tr><td>Keywords</td><td><code>_asm, _endasm, static</code></td></tr>
<tr><td>Command-line options</td><td><code>-Opa+, -Opa-</code></td></tr>
<tr><td>Bit values</td><td><code>0, 1</code></td></tr>
<tr><td>Constants</td><td><code>0xFF, ‘A’</code></td></tr>
<tr><td>Italic Courier New</td><td>A variable argument</td><td><code>file.o</code>, where <code>file</code> can be any valid filename</td></tr>
<tr><td>Square brackets [ ]</td><td>Optional arguments</td><td><code>mcc18 [options] file [options]</code></td></tr>
<tr><td>Curly brackets and pipe character: { | }</td><td>Choice of mutually exclusive arguments; an OR selection</td><td><code>errorlevel {0|1}</code></td></tr>
<tr><td rowspan="2">Ellipses...</td><td>Replaces repeated text</td><td><code>var_name [, var_name...]</code></td></tr>
<tr><td>Represents code supplied by user</td><td><code>void main (void)
{ ...
}</code></td></tr>
</table>

RECOMMENDED READING

This user's guide describes how to use MCP1632 300 kHz Boost Converter Demo Board. Other useful documents are listed below. The following Microchip documents are available and recommended as supplemental reference resources.

- **MCP1632 Data Sheet – *"High-Speed Low-Side PWM Controller"* (DS20005254)**

THE MICROCHIP WEB SITE

Microchip provides online support via our web site at www.microchip.com. This web site is used as a means to make files and information easily available to customers. Accessible by using your favorite Internet browser, the web site contains the following information:

- **Product Support** – Data sheets and errata, application notes and sample programs, design resources, user's guides and hardware support documents, latest software releases and archived software
- **General Technical Support** – Frequently Asked Questions (FAQs), technical support requests, online discussion groups, Microchip consultant program member listing
- **Business of Microchip** – Product selector and ordering guides, latest Microchip press releases, listing of seminars and events, listings of Microchip sales offices, distributors and factory representatives

CUSTOMER SUPPORT

Users of Microchip products can receive assistance through several channels:

- Distributor or Representative
- Local Sales Office
- Field Application Engineer (FAE)
- Technical Support

Customers should contact their distributor, representative or field application engineer (FAE) for support. Local sales offices are also available to help customers. A listing of sales offices and locations is included in the back of this document.

Technical support is available through the web site at: http://www.microchip.com/support

DOCUMENT REVISION HISTORY

Revision A (January 2014)

- Initial Release of this Document.

NOTES:

Chapter 1. Product Overview

1.1 INTRODUCTION

This chapter provides an overview of the MCP1632 300 kHz Boost Converter Demo Board and covers the following topics:

- Short Overview: MCP1632 PWM Controller
- What is the MCP1632 300 kHz Boost Converter Demo Board?
- What is Contained In the MCP1632 300 kHz Boost Converter Demo Board Kit?

1.2 SHORT OVERVIEW: MCP1632 PWM CONTROLLER

The MCP1632 is a high-speed, Current Mode PWM controller intended for applications that require low-side MOSFET control, such as the Boost, Flyback or SEPIC converters. The MCP1632 converter integrates all the blocks necessary to develop a standalone switch-mode power supply. The MCP1632 PWM controller offers great flexibility to designers, as the power train can be tailored for various applications and power levels. The MCP1632 converter includes: internal oscillator with two options for switching frequency (300 kHz and 600 kHz), adjustable reference voltage generator and adjustable soft-start time, internal ramp generator for slope compensation and blanking circuit for current sense (CS) signal, and an Undervoltage Lockout circuit (UVLO). The MCP1632 PWM converter can be easily interfaced with PIC® microcontrollers in order to develop intelligent solutions. The MCP1632 converter accepts input bias voltages between 3V and 5.5V. For larger input voltages, a linear voltage regulator can be used to provide the necessary bias voltage.

Typical applications include: general purpose DC-DC converters, LED drivers, batteries chargers and bias generators.

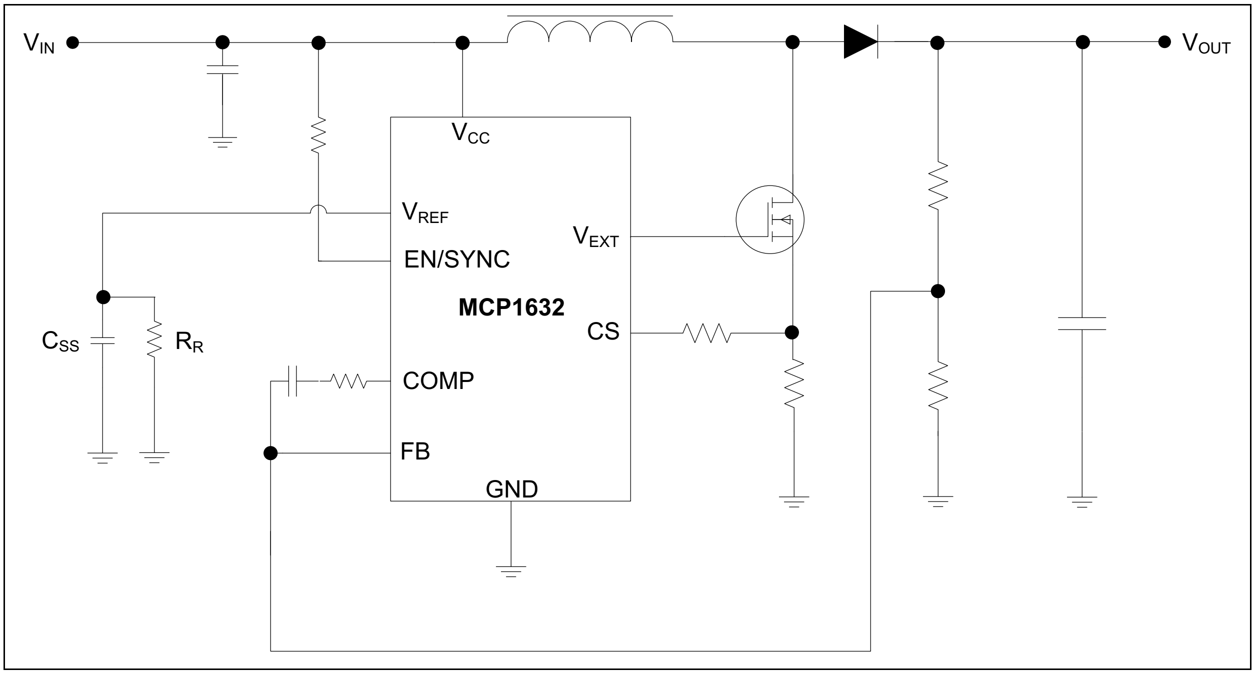


FIGURE 1-1: *MCP1632 Typical Application for Peak Current Mode Control.*

1.3 WHAT IS THE MCP1632 300 KHZ BOOST CONVERTER DEMO BOARD?

The MCP1632 300 kHz Boost Converter Demo Board is a compact, highly efficient, step-up voltage converter that will convert the input voltage rail (typically 5V) to a regulated 12V output voltage. The maximum output current for this demo board is 0.9A. The board demonstrates the capabilities of the MCP1632 PWM controller. Test points for various signals are provided for measuring different parameters of the converter. The demo board can be modified to support output voltages from 9V to 15V by changing a single resistor.

1.4 WHAT IS CONTAINED IN THE MCP1632 300 KHZ BOOST CONVERTER DEMO BOARD KIT?

This MCP1632 300 kHz Boost Converter Demo Board kit includes the following items:

- MCP1632 300 kHz Boost Converter Demo Board (ADM00530)
- Important Information Sheet

Chapter 2. Installation and Operation

2.1 INTRODUCTION

The MCP1632 300 kHz Boost Converter Demo Board was developed to provide a compact, low-cost and highly efficient step-up conversion for low output currents.

The key features of this board include:

- Input Voltage Range: 3.6V to 5.5V
- Output Voltage: 12V (can be adjusted between 9V and 15V by changing a single resistor)
- Maximum Output Current: 0.9A
- 90% typical efficiency at 12V/0.8A output and 5V input
- 300 kHz fixed switching frequency
- Overcurrent Protection for MOSFETs
- Shutdown input for placing the converter in low-power Standby mode
- Undervoltage Lockout (UVLO) with 2.7V (Off) and 2.8V (On) typical thresholds

2.2 GETTING STARTED

The MCP1632 300 kHz Boost Converter Demo Board is fully assembled and tested to evaluate and demonstrate the capabilities of the MCP1632 PWM controller.

2.2.1 Necessary Instruments and Tools

- Adjustable DC Power Supply with 0V-6V/5 A_{DC} range output capability
- Electronic load with at least 1A current capability and load stepping capability
- Digital Oscilloscope with a minimum bandwidth of 50MHz
- Digital voltmeter/ammeter
- Optionally, a Network Analyzer/Bode Plot Analyzer for loop analysis
- Wires for connections; these wires must sustain high current, 4A for the connection between adjustable DC power supply and board, 1A for the connection between the board and the electronic load

2.2.2 Setup procedure

To power up the MCP1632 300 kHz Boost Converter Demo Board, the following steps must be completed:

1. Connect the Electronic Load to J3 connector of the demo board; the "Positive" (+) and "Negative" (-) connector pins are marked on the board silkscreen.
2. Connect the Adjustable DC Power Supply to J1 connector of the demo board; the "Positive" (+) and "Negative" (-) connector pins are marked on the board silkscreen.
3. The DC voltage supplied by the Adjustable DC Power Supply must be between 3.6V and 5.5V.

2.2.3 Board Testing

The typical testing setup is depicted in Figure 2-1. Table 2-1 shows all the available test points on the board.

The user can connect various instruments at the listed test points to evaluate the parameters of the converter. The typical performance data, curves and waveforms are presented in **Appendix C. "Typical Performance Data, Curves and Waveforms"**. Note that some parameters vary with the input voltage (e.g., the maximum output current should not exceed 0.8A if the input voltage is below 4 V).

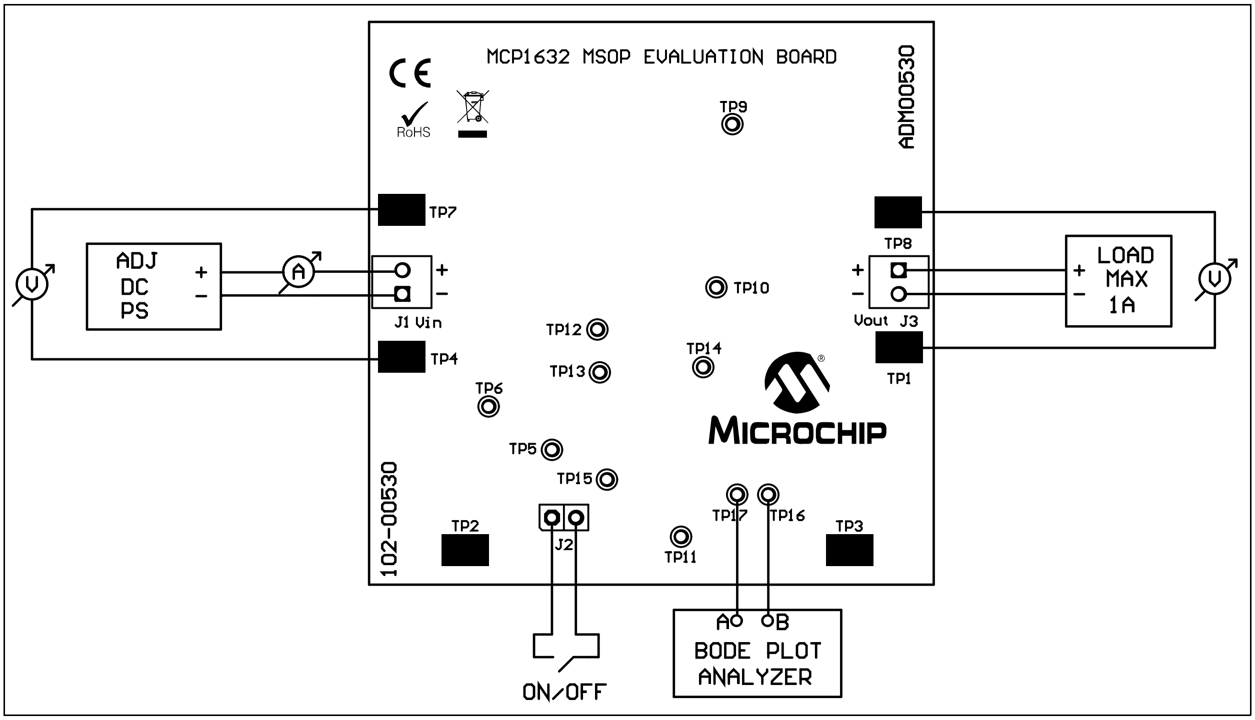


FIGURE 2-1: *Typical Test Setup.*

TABLE 2-1: TEST POINTS DESCRIPTION

Test Point	Label	Description
TP1, TP2, TP3, TP4	GND	Board GND
TP6,TP7	V_{IN}	Input voltage
TP5	SHDN	Shutdown input (EN pin of MCP1632)
TP14	CS	CS pin of MCP1632
TP12	MCS	MOSFET current sense resistor (R9)
TP10	DR	MOSFET drive signal (pin 6 of MCP1632)
TP9	SW	Main switch node (drain of Q1 MOSFET)
TP13	V_{REF}	Reference voltage (pin 8 of MCP1632)
TP8	V_{OUT}	Converter's output voltage
TP11	FB	Feedback voltage (pin 2 of MCP1632)
TP15	COMP	Output of the error amplifier (pin 2 of MCP1632)
TP16, TP17	CH B, CH A	Signal injection points for loop measurement

2.2.3.1 ADJUSTING THE OUTPUT VOLTAGE

The output voltage can be modified by changing the value of R8 from the feedback divider. The output voltage is set according to Equation 2-1.

EQUATION 2-1: OUTPUT VOLTAGE

$$V_{OUT} = V_{REF} \times \frac{R3 + R8}{R8}$$

Where:

$V_{REF}(V) = R5(\Omega) \times 50 \times 10^{-6}$

$R3 = 20\ k\Omega$

Do not modify the value of the R3 resistor (20 kΩ) because this will affect the loop compensation of the system.

Some parameters, such as efficiency, the overcurrent protection thresholds and the input and output voltage ripple, can be affected by the modification of the output voltage.

Table 2-2 shows the standard value of the R8 resistor for several common output voltages.

TABLE 2-2: OUTPUT VOLTAGE VERSUS R8 VALUE (R3 = 20 kΩ)

V_{OUT} (V)	R8 (kΩ)	V_{REF} (V)
9	5.71	2
12	4.02	2
15	3.08	2

NOTES:

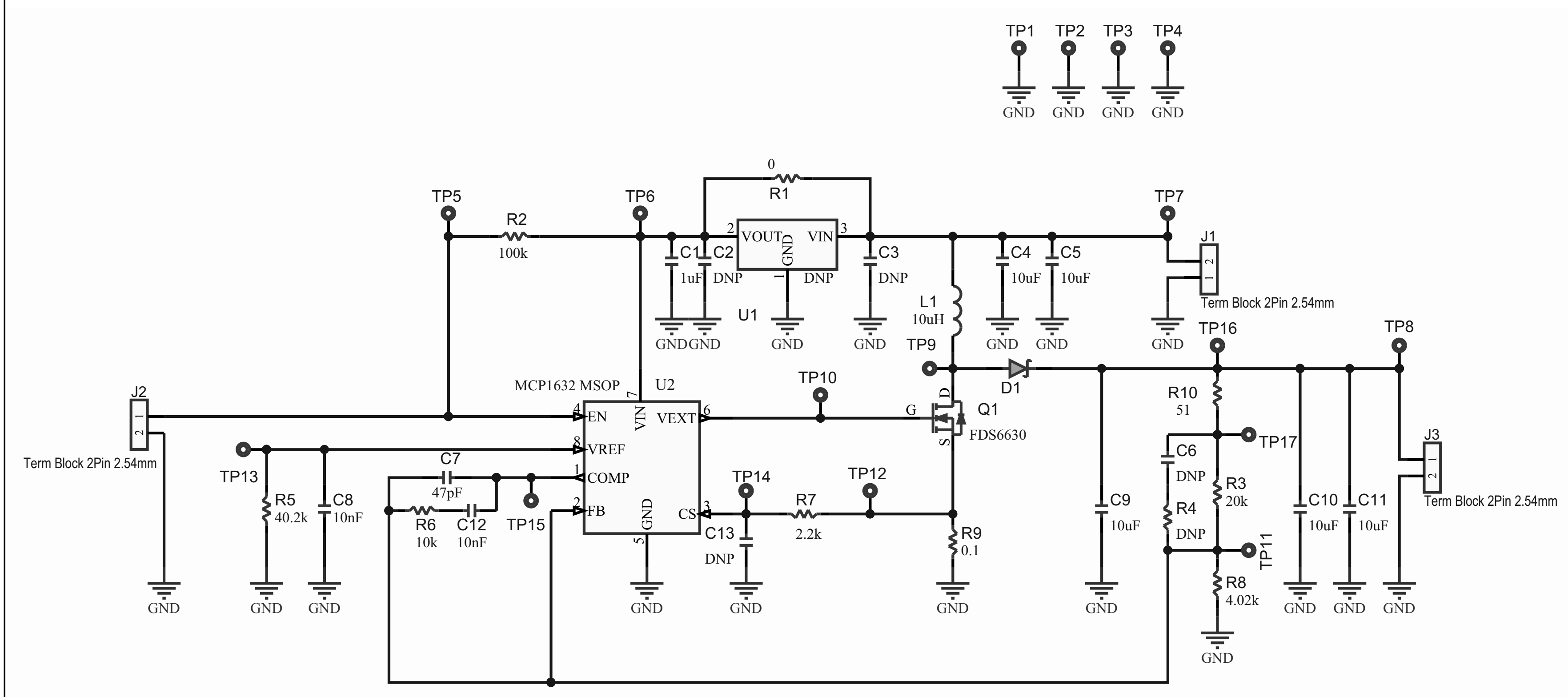
Appendix A. Schematic and Layouts

A.1 INTRODUCTION

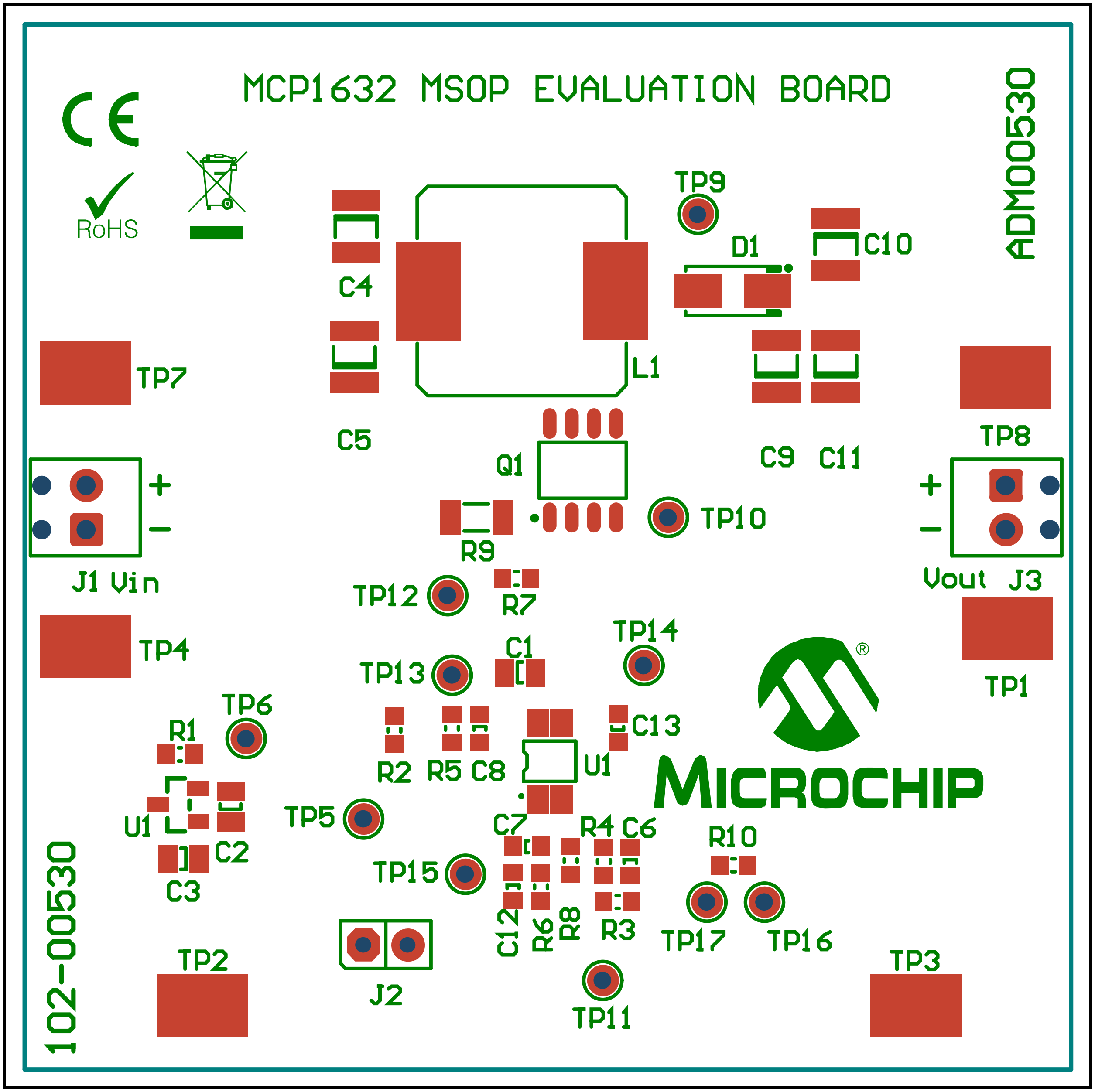
This appendix contains the following schematics and layouts for the MCP1632 300 kHz Boost Converter Demo Board:

- Board – Schematic
- Board – Top Silk
- Board – Top Copper and Silk
- Board – Top Copper
- Board – Bottom Cooper
- Board – Bottom Copper and Silk
- Board – Bottom Silk

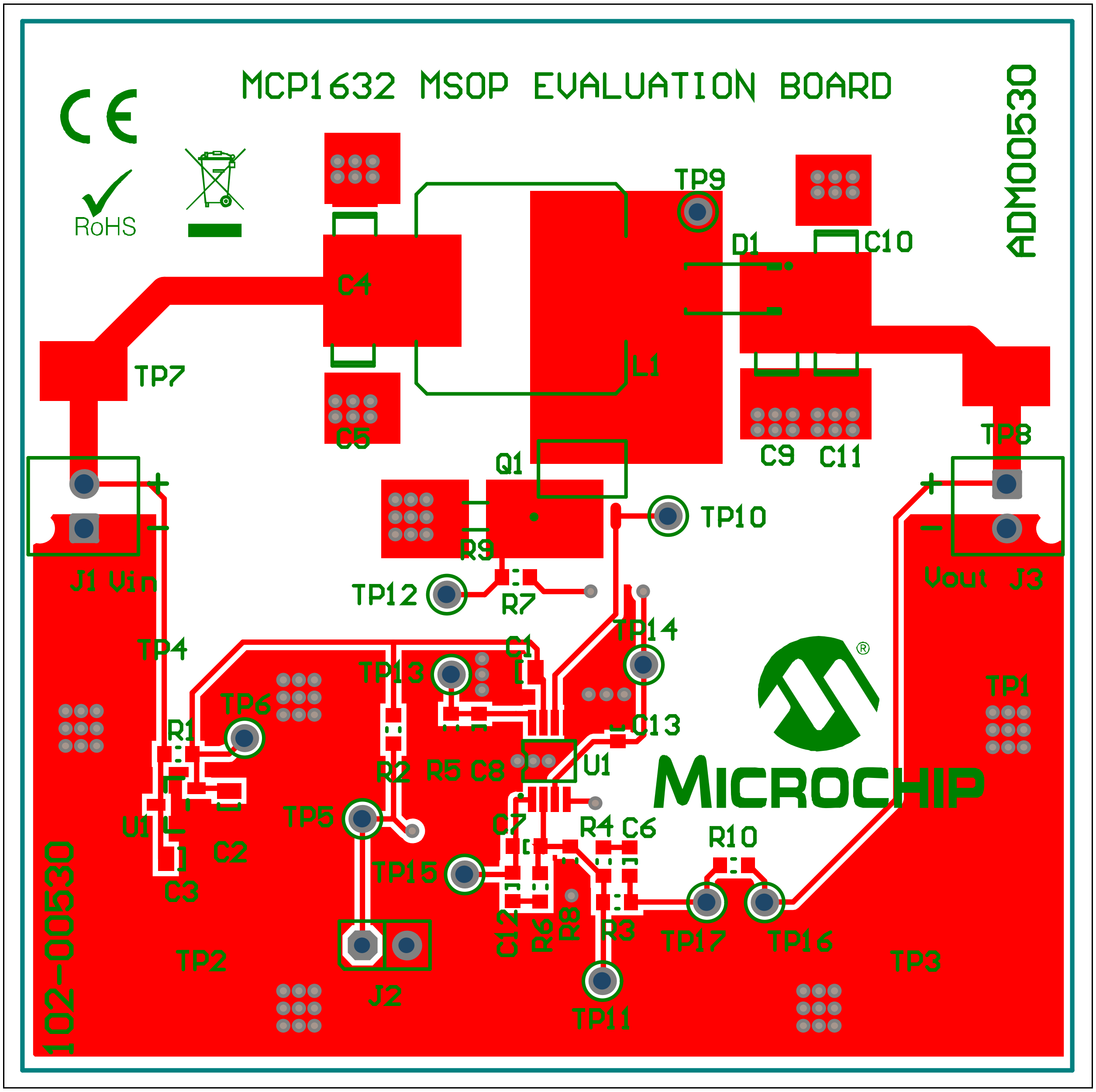
A.2 BOARD – SCHEMATIC



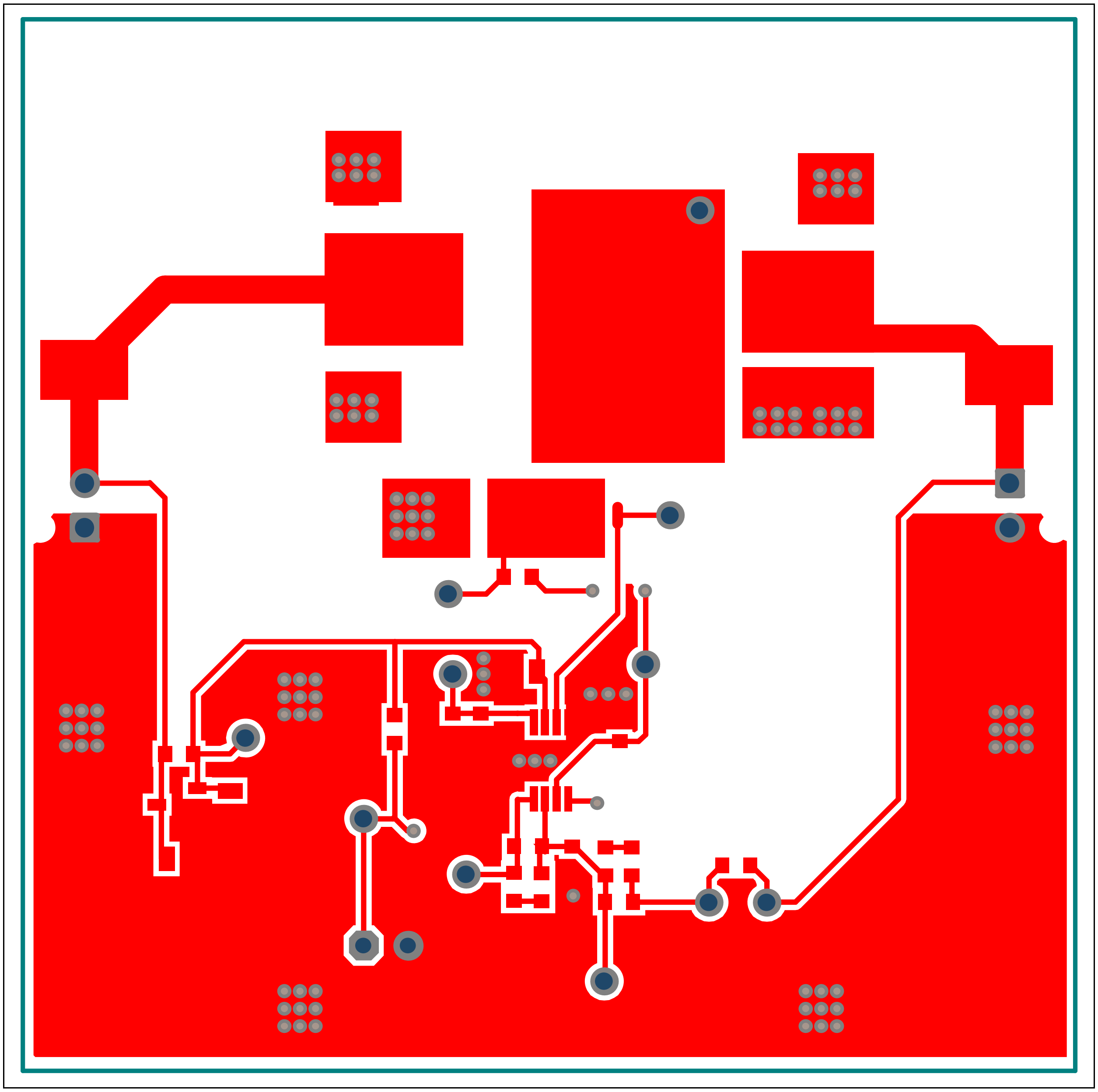
A.3 BOARD – TOP SILK



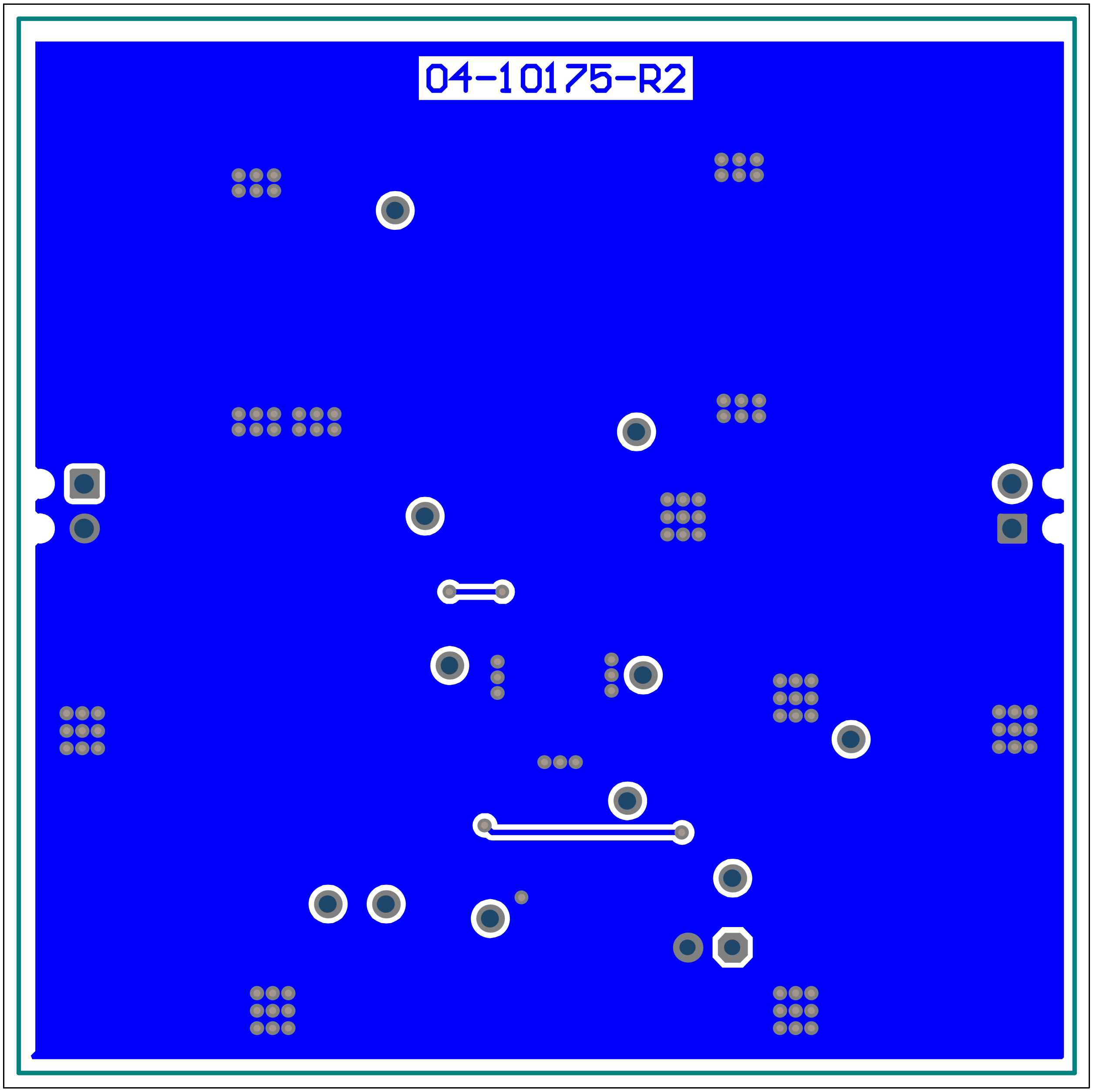
A.4 BOARD – TOP COPPER AND SILK



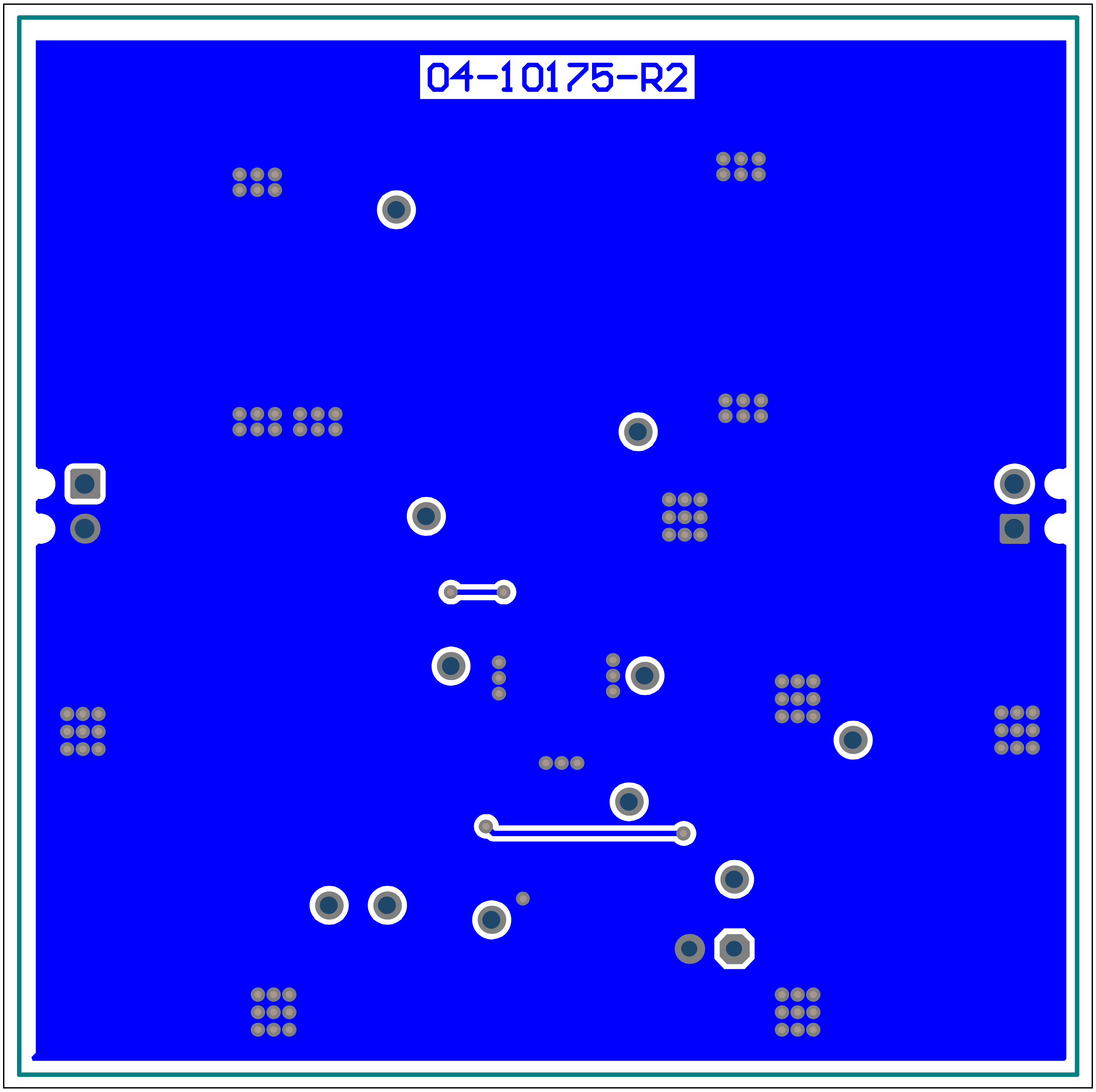
A.5 BOARD – TOP COPPER



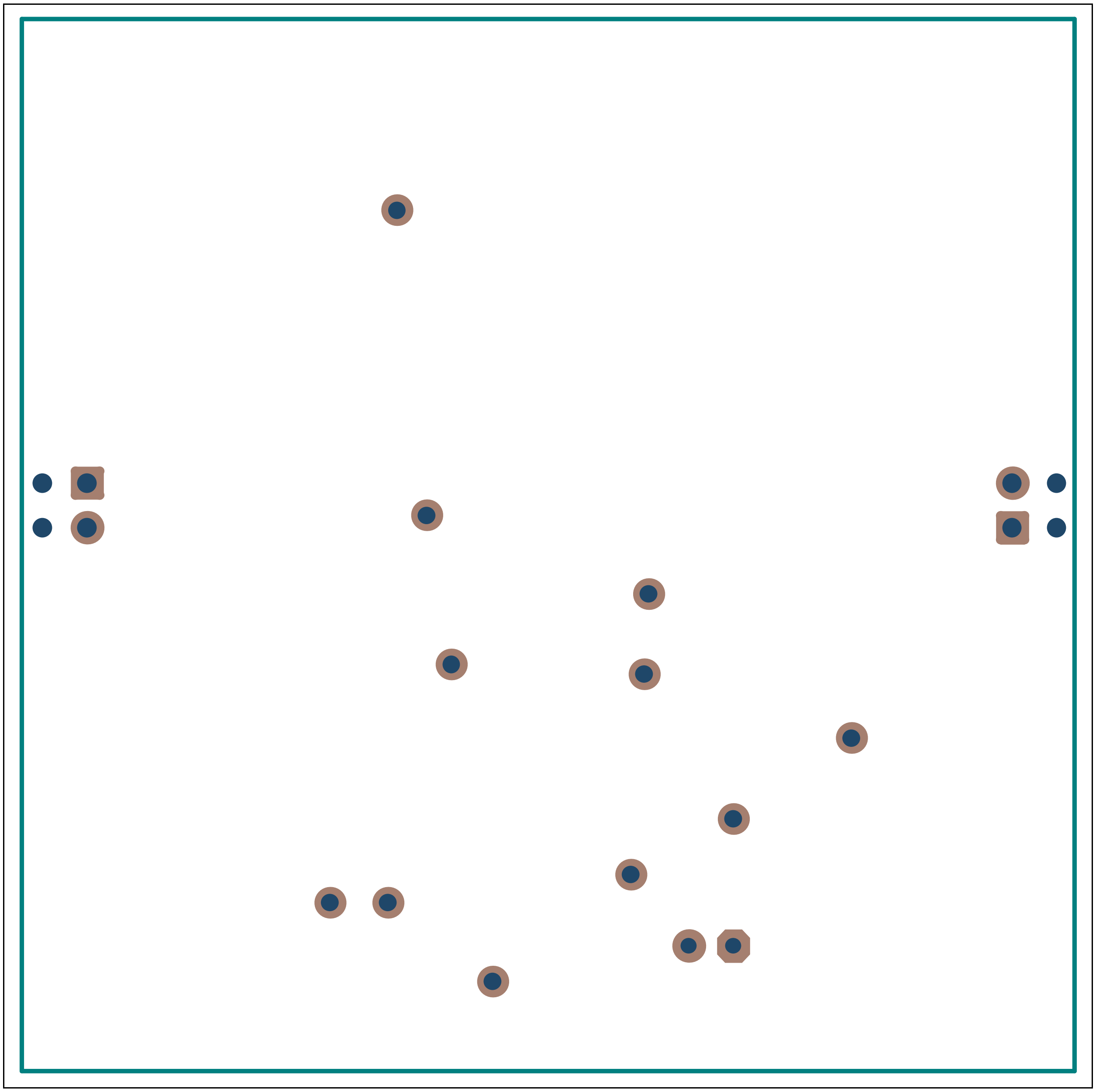
A.6 BOARD – BOTTOM COOPER



A.7 BOARD – BOTTOM COPPER AND SILK



A.8 BOARD – BOTTOM SILK



Appendix B. Bill of Materials

TABLE B-1: BILL OF MATERIALS (BOM)

Qty	Reference	Description	Manufacturer	Part Number
1	C1	Cap. ceramic 1 µF 16V 10% X7R 0805	Yageo Corporation	CC0805KKX7R7BB105
0	C2 – C3, C6, C13	**DO NOT POPULATE**	—	—
2	C4 – C5	Cap. ceramic 10 µF 16V 10% X7R 1210	Samsung Electro-Mechanics America, Inc.	CL32B106KOULNNE
1	C7	Cap. ceramic 47 pF 100V 5% COG 0603	AVX Corporation	06031A470JAT2A
2	C8, C12	Cap. ceramic 10000 pF 25V 5% NP0 0603	TDK Corporation	C1608C0G1E103J080AA
3	C9 – C11	Cap. ceramic 10 µF 25V 10% X7R 1210	TDK Corporation	C3225X7R1E106K
1	D1	Diode Schottky 40V 2A DO214AC	Vishay	SSA24-E3/61T
2	J1, J3	Conn. term. block 2.54 MM 2 POS	Phoenix Contact GmbH & Co.	1725656
2	J2	Conn. header Vert. 0.100" Gold	TE Connectivity, Ltd.	5-146868-1
1	L1	Inductor power 10 UH 4.00A SMD	EPCOS AG	B82477G2103M
	PCB	Printed Circuit Board - MCP1632 300 kHz Boost Converter Demo Board	—	104-00530
1	Q1	MOSFET N-Ch. 30V 6.5A 8 SOIC	Fairchild Semiconductor®	FDS6630A
1	R1	Res. 0Ω 1/10W 0603 SMD	Panasonic® - ECG	ERJ-3GEY0R00V
1	R2	Res. 100 kΩ 1/10W 1% 0603 SMD	Panasonic - ECG	ERJ-3EKF1003V
1	R3	Res. 20.0 kΩ 1/10W 1% 0603 SMD	Panasonic - ECG	ERJ-3EKF2002V
0	R4	**DO NOT POPULATE**	—	—
1	R5	Res. 40.2 kΩ 1/10W 1% 0603 SMD	Yageo Corporation	RC0603FR-0740K2L
1	R6	Res. 10.0 kΩ 1/8W 1% SMD 0603	Vishay	MCT06030C1002FP500
1	R7	Res. 2.20 kΩ 1/8W 1% SMD 0603	Vishay	MCT06030C2201FP500
1	R8	Res. 4.02 kΩ 1/10W 1% 0603 SMD	Yageo Corporation	RC0603FR-074K02L
1	R9	Res. 0.1 Ω 1/2W 1% 1206 SMD	Bourns®, Inc.	CRM1206-FX-R100ELF
1	R10	Res. 51.0 Ω 1/10W 1% 0603 SMD	Yageo Corporation	RC0603FR-0751RL
5	TP1, TP3 – TP4, TP7 – TP8	PC test point compact SMT	Keystone Electronics Corp.	5016
0	TP5 – TP6, TP9 – TP17	**DO NOT POPULATE**	—	—
0	U1	**DO NOT POPULATE**	—	—
1	U2	High-Speed Boost Controller	Microchip Technology Inc.	**MCP1632-AAE/MS**

Note 1: The components listed in this Bill of Materials are representative of the PCB assembly. The released BOM used in manufacturing uses all RoHS-compliant components.

NOTES:

Appendix C. Typical Performance Data, Curves and Waveforms

C.1 PERFORMANCE OVERVIEW

This chapter shows some of the typical performance parameters and curves of the MCP1632 300 kHz Boost Converter Demo Board.

TABLE C-1: CONVERTER PARAMETERS

Parameter	Value	Comments
Input Voltage Range (V)	3.6 – 5.5	
Output Voltage (V)	12	±2.5% Tolerance
Maximum Output Current (A)	0.9	Steady State output current
Output Voltage Ripple (mV)	< 120	V_{IN} = 5V, I_{OUT} = 0.85A
Input Voltage Ripple (mV)	< 30	V_{IN} = 5V, I_{OUT} = 0.85A
Output Voltage Overshoot during Step Load (mV)	< 600	Step Load 0.3A to 0.8A
Switching Frequency (kHz)	250 – 350	Typical 300 kHz

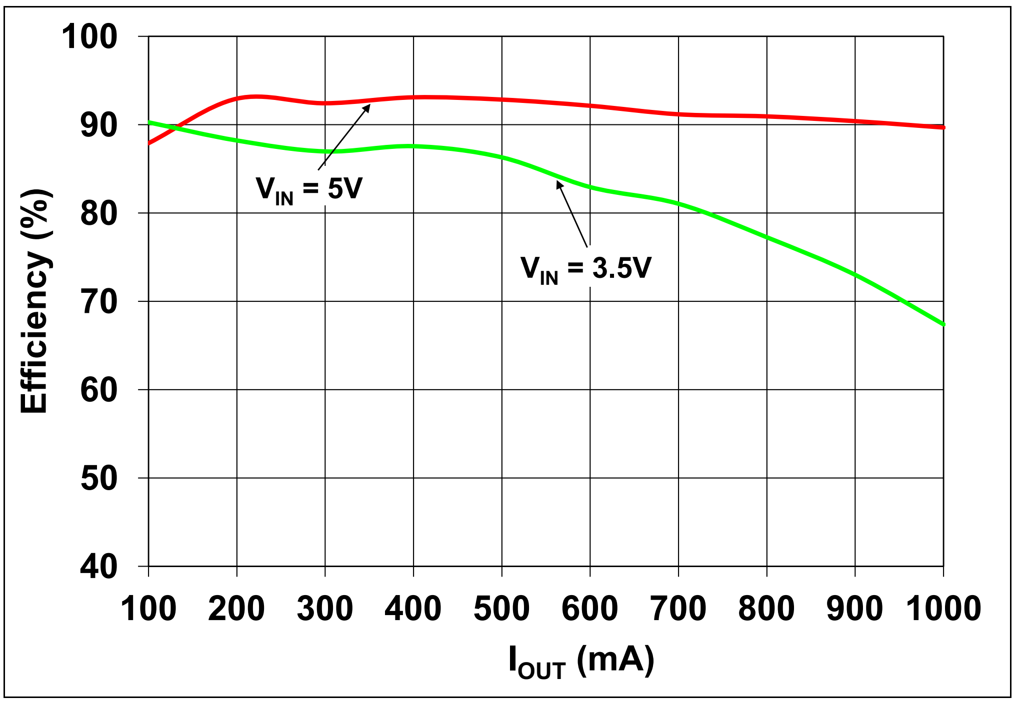


FIGURE C-1: Efficiency.

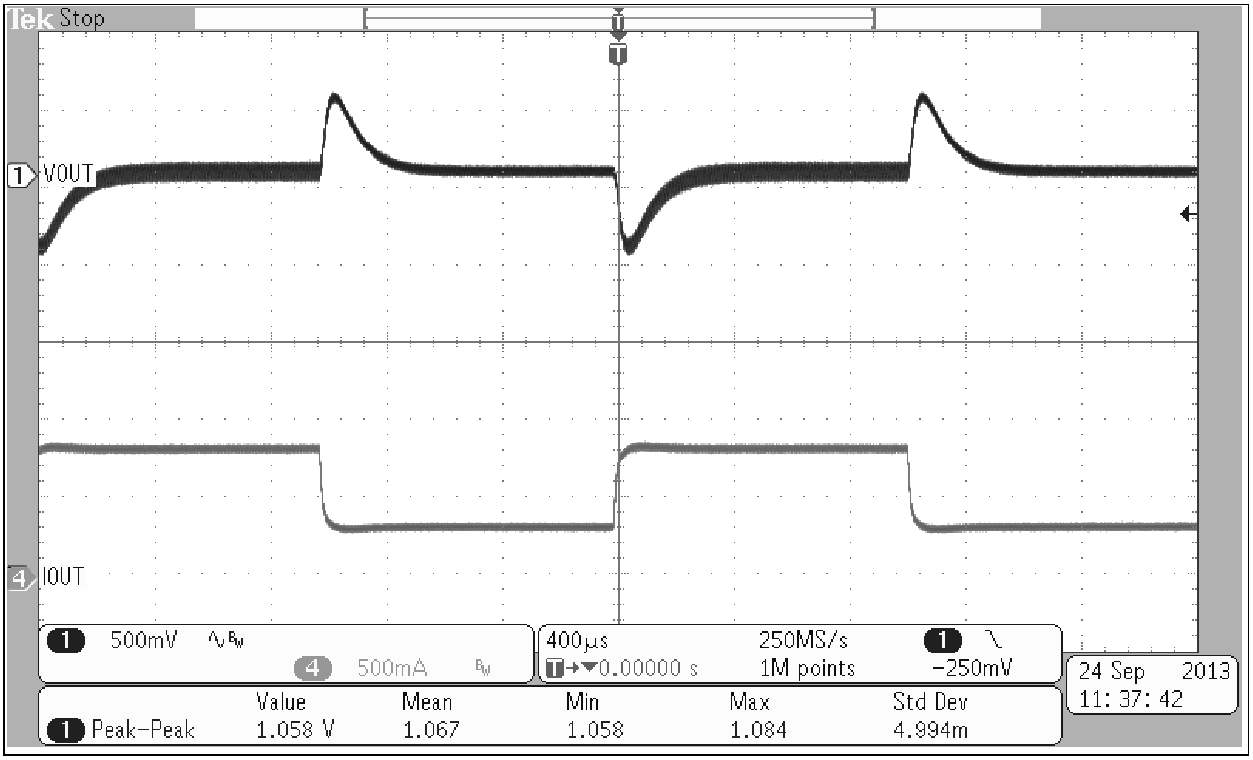


FIGURE C-2: *Step Load (V_{IN} = 5V).*

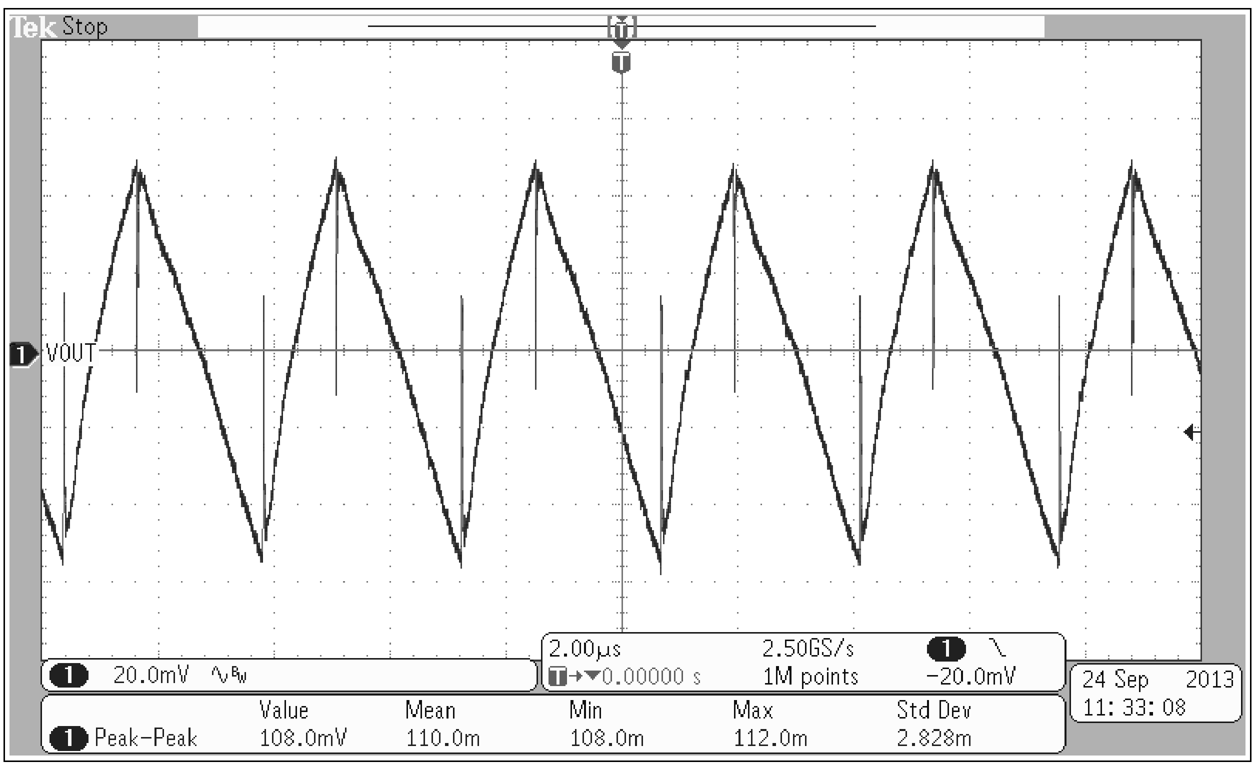


FIGURE C-3: *Output Voltage Ripple/Noise (V_{IN} = 5V, I_{OUT} = 0.85A, BW = 200 MHz).*

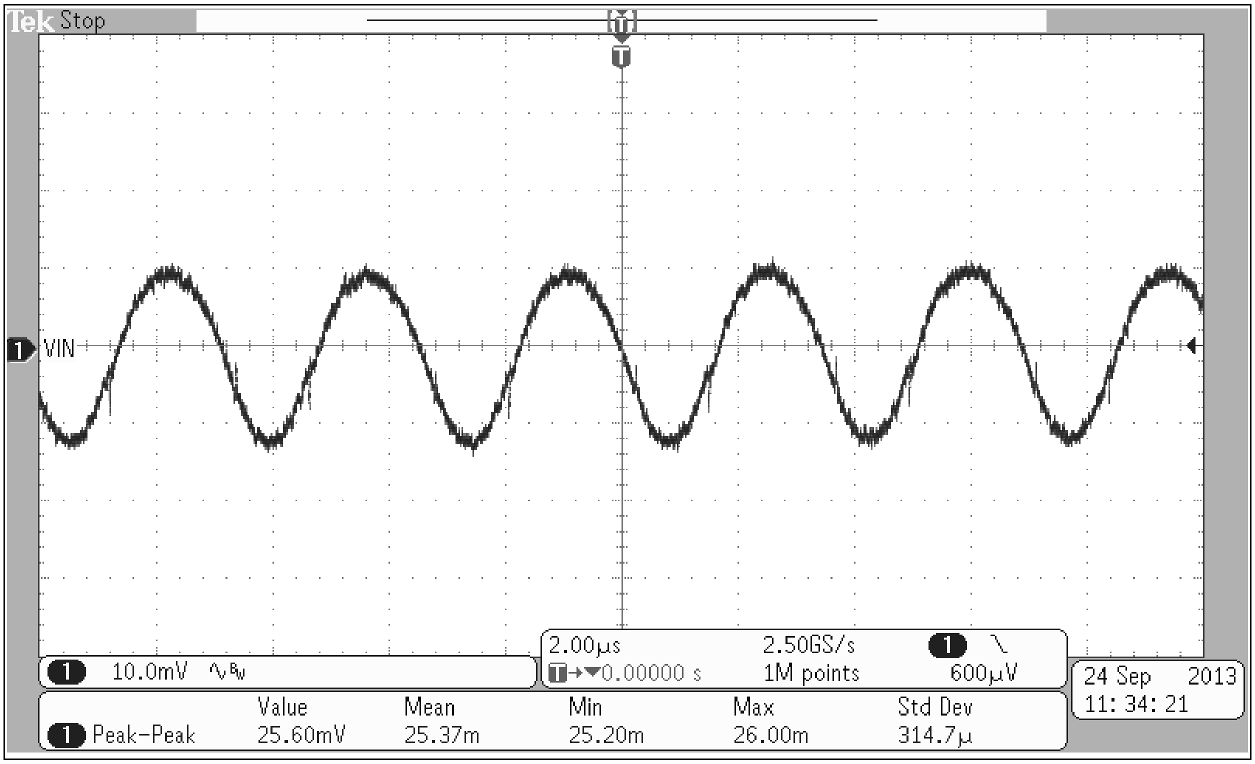


FIGURE C-4: *Input Voltage Ripple/Noise (V_{IN} = 5V, I_{OUT} = 0.85A, BW = 200 MHz).*

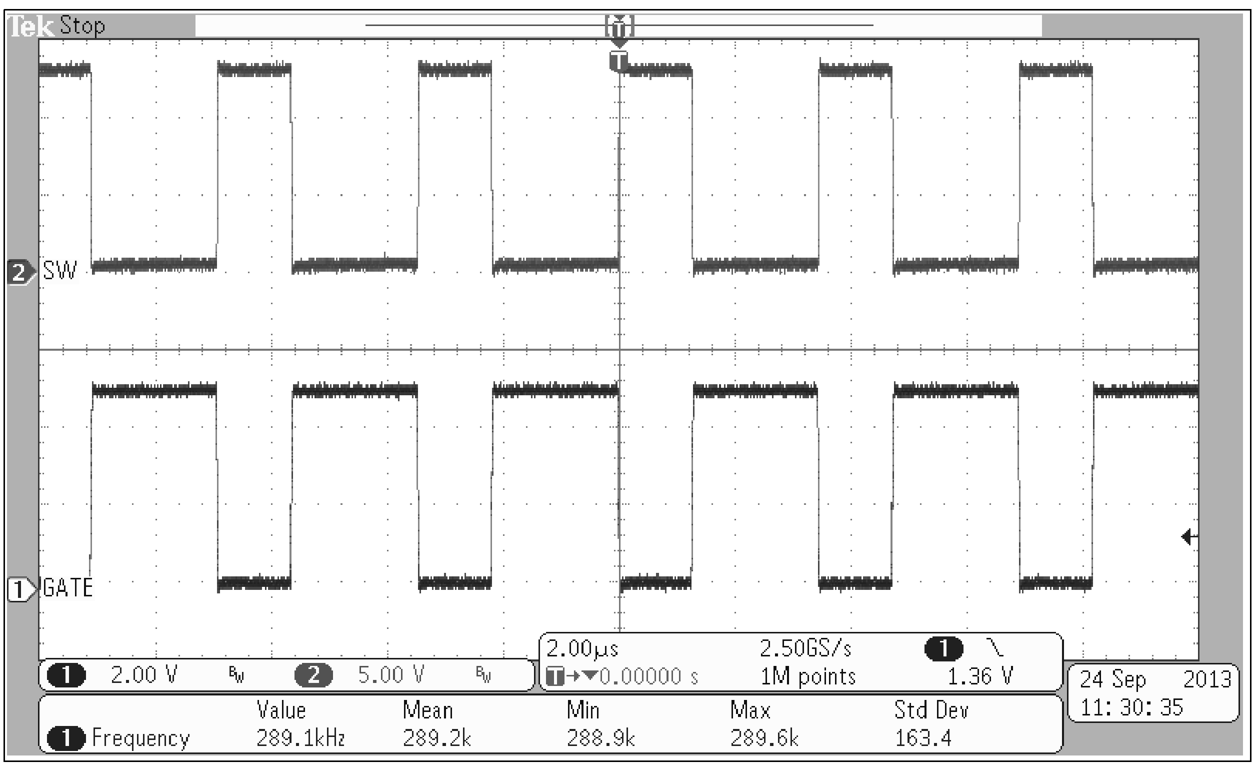


FIGURE C-5: *SW and Gate Signals (V_{IN} = 5V, I_{OUT} = 0.85A, BW = 300 MHz).*

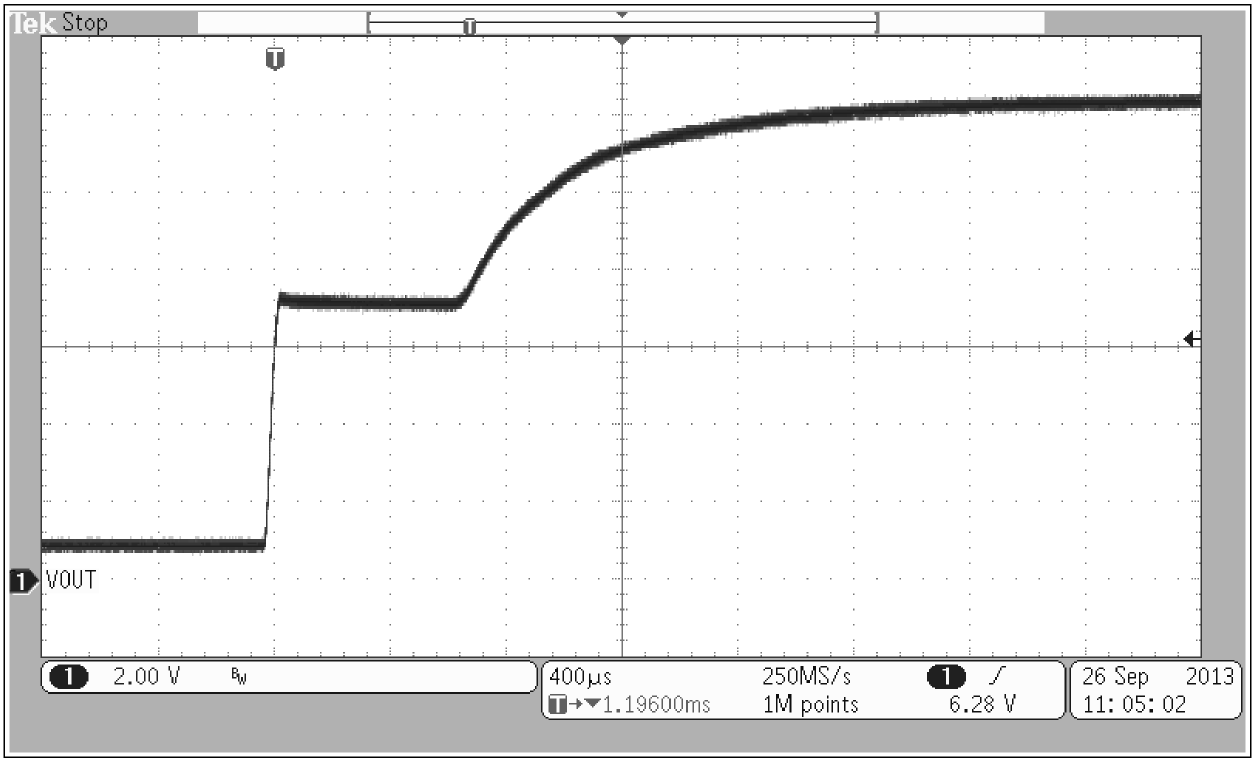


FIGURE C-6: *Soft Start.*

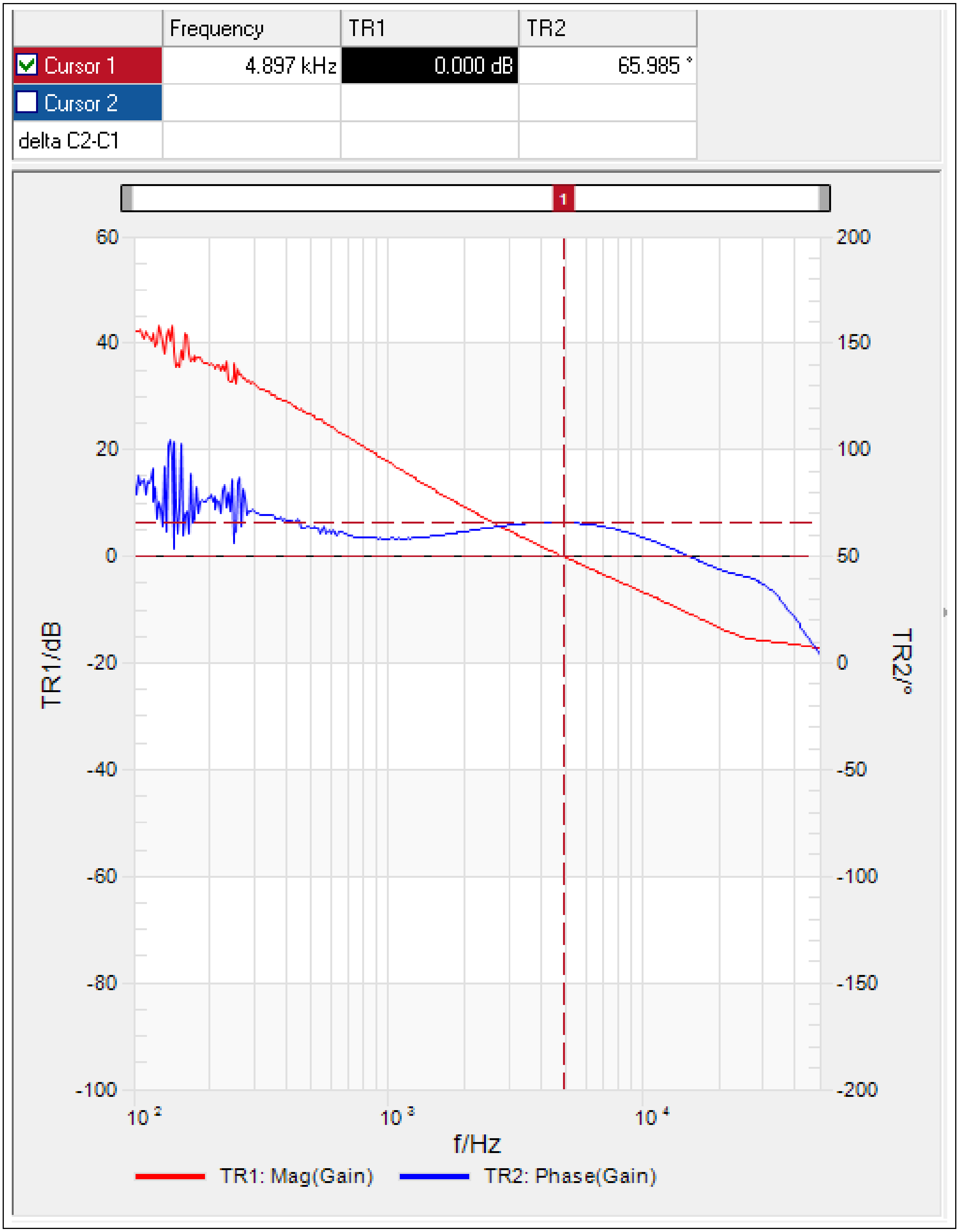


FIGURE C-7: *Bode Plots (Red-Gain, Blue-Phase) (V_{IN} = 5V, V_{OUT} = 12V, I_{OUT} = 0.5A).*

Worldwide Sales and Service

AMERICAS

Corporate Office
2355 West Chandler Blvd.
Chandler, AZ 85224-6199
Tel: 480-792-7200
Fax: 480-792-7277
Technical Support:
http://www.microchip.com/support
Web Address:
www.microchip.com

Atlanta
Duluth, GA
Tel: 678-957-9614
Fax: 678-957-1455

Austin, TX
Tel: 512-257-3370

Boston
Westborough, MA
Tel: 774-760-0087
Fax: 774-760-0088

Chicago
Itasca, IL
Tel: 630-285-0071
Fax: 630-285-0075

Cleveland
Independence, OH
Tel: 216-447-0464
Fax: 216-447-0643

Dallas
Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

Detroit
Novi, MI
Tel: 248-848-4000

Houston, TX
Tel: 281-894-5983

Indianapolis
Noblesville, IN
Tel: 317-773-8323
Fax: 317-773-5453

Los Angeles
Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608

New York, NY
Tel: 631-435-6000

San Jose, CA
Tel: 408-735-9110

Canada - Toronto
Tel: 905-673-0699
Fax: 905-673-6509

ASIA/PACIFIC

Asia Pacific Office
Suites 3707-14, 37th Floor
Tower 6, The Gateway
Harbour City, Kowloon
Hong Kong
Tel: 852-2401-1200
Fax: 852-2401-3431

Australia - Sydney
Tel: 61-2-9868-6733
Fax: 61-2-9868-6755

China - Beijing
Tel: 86-10-8569-7000
Fax: 86-10-8528-2104

China - Chengdu
Tel: 86-28-8665-5511
Fax: 86-28-8665-7889

China - Chongqing
Tel: 86-23-8980-9588
Fax: 86-23-8980-9500

China - Hangzhou
Tel: 86-571-2819-3187
Fax: 86-571-2819-3189

China - Hong Kong SAR
Tel: 852-2943-5100
Fax: 852-2401-3431

China - Nanjing
Tel: 86-25-8473-2460
Fax: 86-25-8473-2470

China - Qingdao
Tel: 86-532-8502-7355
Fax: 86-532-8502-7205

China - Shanghai
Tel: 86-21-5407-5533
Fax: 86-21-5407-5066

China - Shenyang
Tel: 86-24-2334-2829
Fax: 86-24-2334-2393

China - Shenzhen
Tel: 86-755-8864-2200
Fax: 86-755-8203-1760

China - Wuhan
Tel: 86-27-5980-5300
Fax: 86-27-5980-5118

China - Xian
Tel: 86-29-8833-7252
Fax: 86-29-8833-7256

China - Xiamen
Tel: 86-592-2388138
Fax: 86-592-2388130

China - Zhuhai
Tel: 86-756-3210040
Fax: 86-756-3210049

ASIA/PACIFIC

India - Bangalore
Tel: 91-80-3090-4444
Fax: 91-80-3090-4123

India - New Delhi
Tel: 91-11-4160-8631
Fax: 91-11-4160-8632

India - Pune
Tel: 91-20-3019-1500

Japan - Osaka
Tel: 81-6-6152-7160
Fax: 81-6-6152-9310

Japan - Tokyo
Tel: 81-3-6880- 3770
Fax: 81-3-6880-3771

Korea - Daegu
Tel: 82-53-744-4301
Fax: 82-53-744-4302

Korea - Seoul
Tel: 82-2-554-7200
Fax: 82-2-558-5932 or
82-2-558-5934

Malaysia - Kuala Lumpur
Tel: 60-3-6201-9857
Fax: 60-3-6201-9859

Malaysia - Penang
Tel: 60-4-227-8870
Fax: 60-4-227-4068

Philippines - Manila
Tel: 63-2-634-9065
Fax: 63-2-634-9069

Singapore
Tel: 65-6334-8870
Fax: 65-6334-8850

Taiwan - Hsin Chu
Tel: 886-3-5778-366
Fax: 886-3-5770-955

Taiwan - Kaohsiung
Tel: 886-7-213-7830

Taiwan - Taipei
Tel: 886-2-2508-8600
Fax: 886-2-2508-0102

Thailand - Bangkok
Tel: 66-2-694-1351
Fax: 66-2-694-1350

EUROPE

Austria - Wels
Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark - Copenhagen
Tel: 45-4450-2828
Fax: 45-4485-2829

France - Paris
Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

Germany - Dusseldorf
Tel: 49-2129-3766400

Germany - Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Germany - Pforzheim
Tel: 49-7231-424750

Italy - Milan
Tel: 39-0331-742611
Fax: 39-0331-466781

Italy - Venice
Tel: 39-049-7625286

Netherlands - Drunen
Tel: 31-416-690399
Fax: 31-416-690340

Poland - Warsaw
Tel: 48-22-3325737

Spain - Madrid
Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

Sweden - Stockholm
Tel: 46-8-5090-4654

UK - Wokingham
Tel: 44-118-921-5800
Fax: 44-118-921-5820

10/28/13

Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.

Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)
Факс: 8 (812) 320-02-42
Электронная почта: org@eplast1.ru
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.