



# High-Voltage Motor Control Isolated Debugger Card

## High-Voltage Motor Control Isolated Debugger Card

### Introduction

The High-Voltage Motor Control Isolated Debugger Card is an add-on daughter card designed to program and debug the SAM/PIC32CM/ PIC32MK/dsPIC microcontroller-based plug-in modules (PIMs) which are mounted on the following high-voltage boards:

- [dsPICDEM MCHV-2 Development Board \(High Voltage\)- DM330023-2](#)
- [dsPICDEM MCHV-3 Development Board \(High Voltage\) - DM330023-3](#)

### 1. Installing High-Voltage Motor Control Isolated Debugger Card

**Note:** Ensure that the board is de-energized before implementing the following steps.

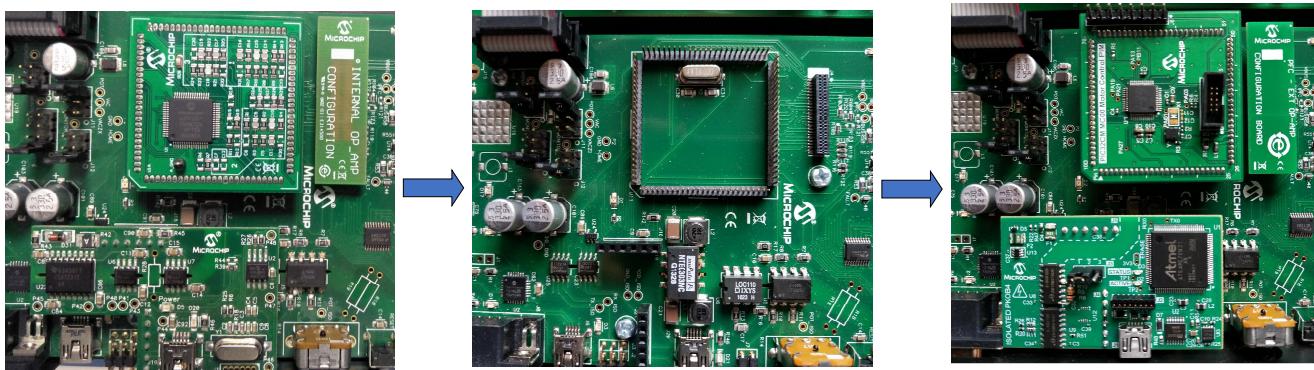
1. Remove the protective clear acrylic (plexiglass) shield by unscrewing the eight hexagon screws.

**Figure 1-1. Removing the Protective Shield on the dsPICDEM MCHV-3 Development Board**



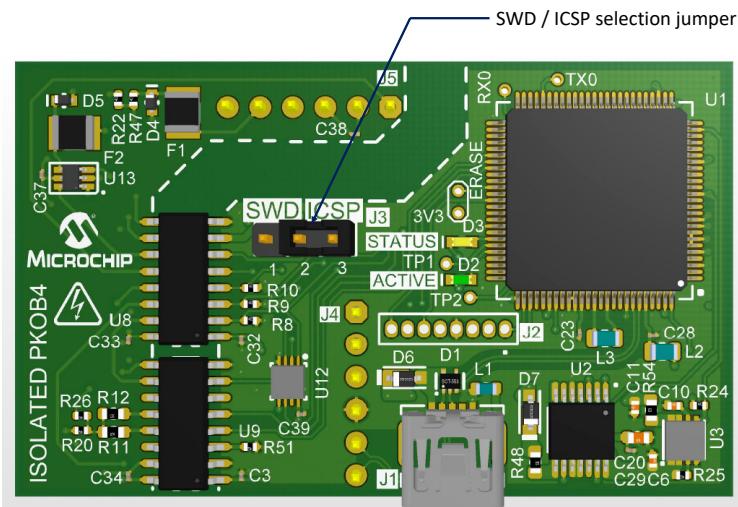
2. The dsPICDEM MCHV-2/3 development board is shipped along with a pre-mounted dsPIC33 motor control PIM, PICkit™ On Board (PKOB) debugger card, and an Internal OPAMP matrix board.
  - a. Replace the dsPIC33 PIM with the Motor Control PIM chosen for the application (if required).
  - b. Replace the PKOB debugger card with the High-Voltage Motor Control Isolated Debugger Card (Isolated PKOB4 card).
  - c. Install appropriate OPAMP matrix board which is compatible with the SAM/ PIC32CM/PIC32MK/dsPIC Motor Control PIM. Refer to the respective PIM Information Sheet for additional information on a compatible OPAMP matrix board.

**Figure 1-2. Replacing PIM, Debugger, and Matrix Board**



3. Follow these steps to connect the J3 jumper of isolated PKOB4 debugger card:
  - a. Connect the jumper to ICSP position for the PIC32MK/dsPIC motor control PIM.
  - b. Connect the jumper to SWD position for the PIC32CM/ SAM motor control PIM.

Figure 1-3. ICSP-SWD Jumper Connection



4. Re-install the protective clear acrylic (plexiglass) shield and secure it with eight hexagon screws. For safety reasons, it is recommended not to operate the dsPICDEM MCHV-2/3 development board without the protective clear acrylic (plexiglass) shield.

## 2. Using High-Voltage Motor Control Isolated Debugger Card for Programming

To establish communication between MPLAB® X IDE and the dsPICDEM MCHV-2/3 development board, follow these steps:

1. Connect a mini-USB cable between the PC running on MPLAB X IDE, and the programming and debugging port as shown in the following figure.

Figure 2-1. dsPICDEM MCHV-3 Development Board I/O Interface



2. Energize the dsPICDEM MCHV-2/3 development board using an AC mains voltage of 90-230 AC RMS.

Figure 2-2. dsPICDEM MCHV-3 Development Board AC Mains Interface

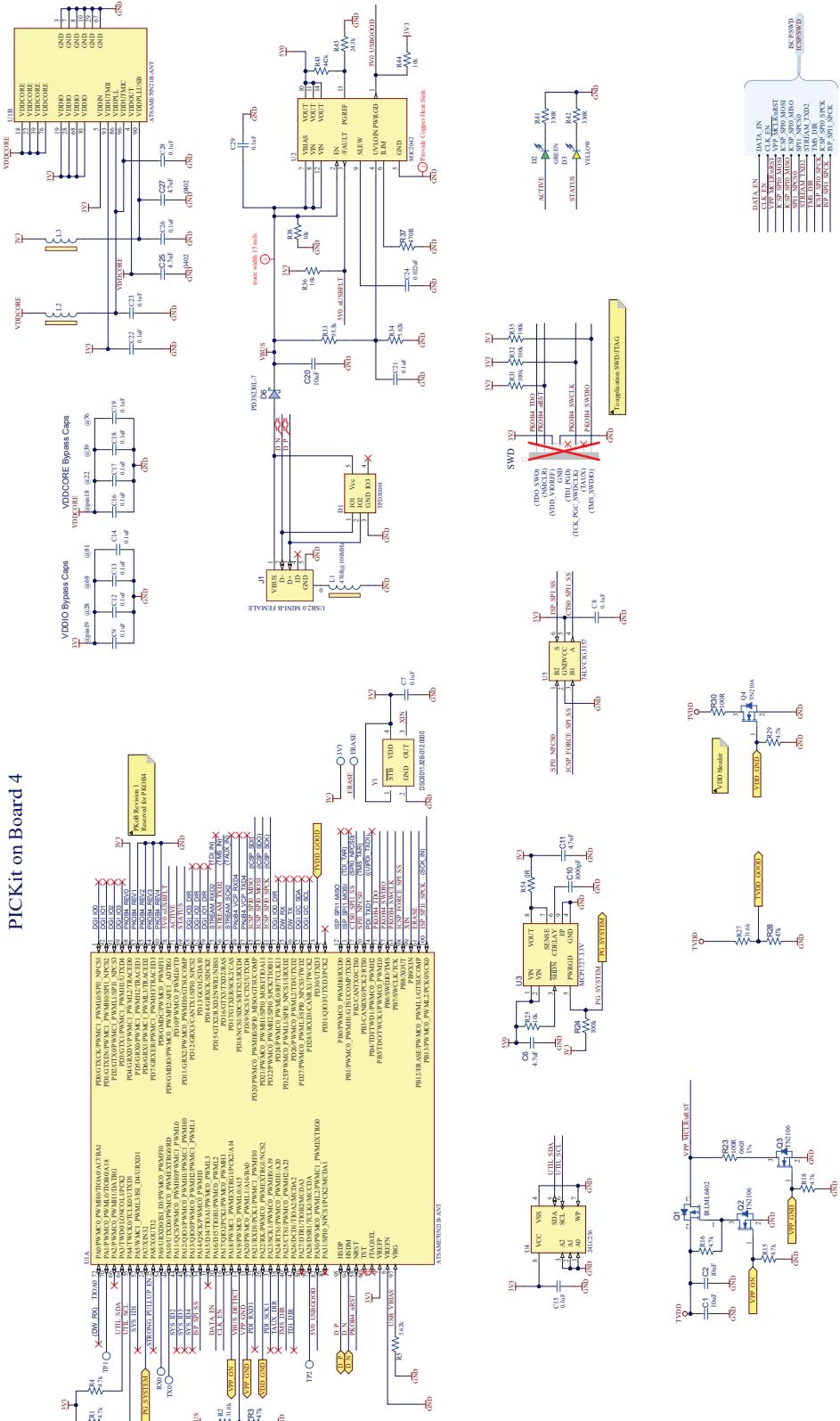


3. Refer to the respective MPLAB X IDE documentation on selecting the programmer and debugger.

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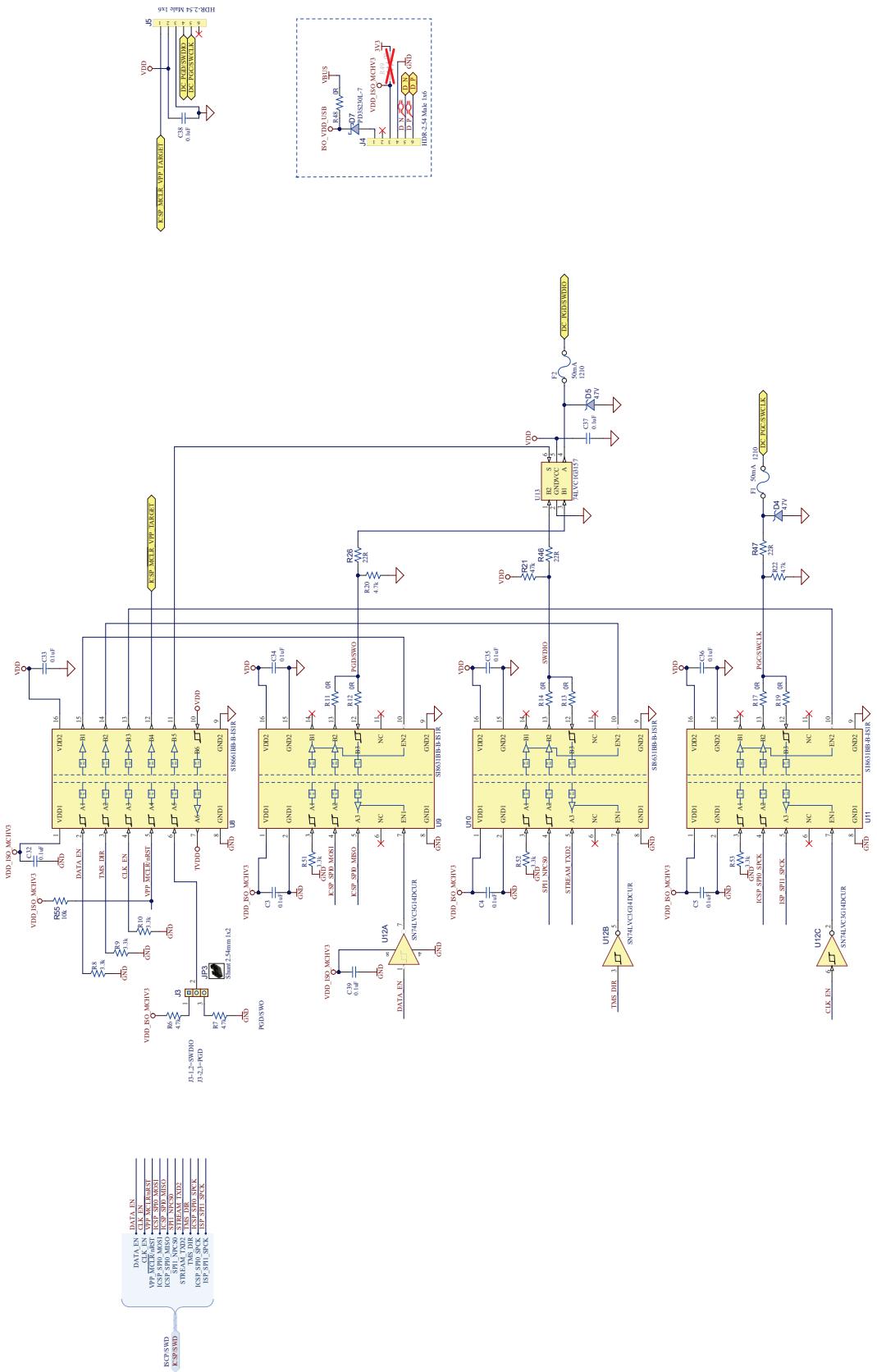
## High-Voltage Motor Control Isolated Debugger ...

### 3. High-Voltage Motor Control Isolated Debugger Card Schematic



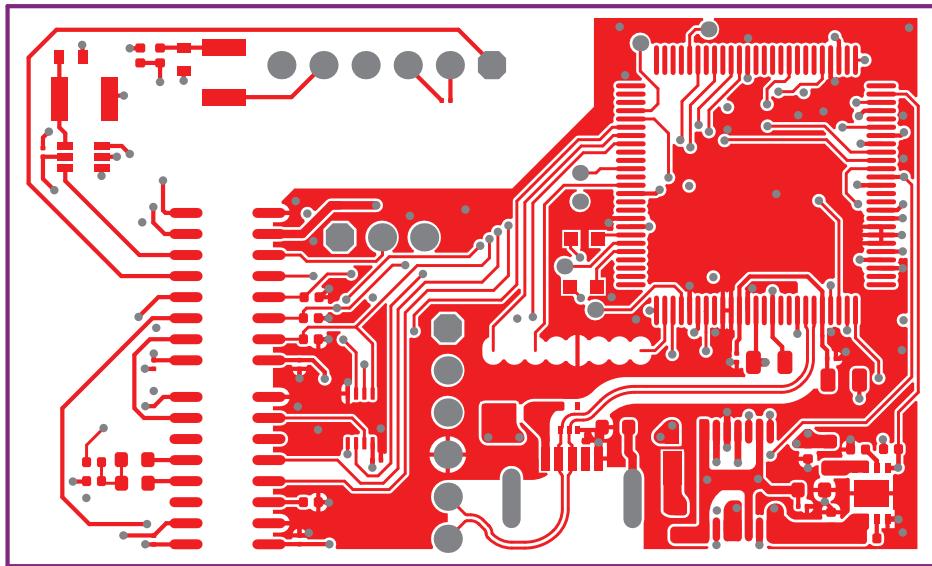
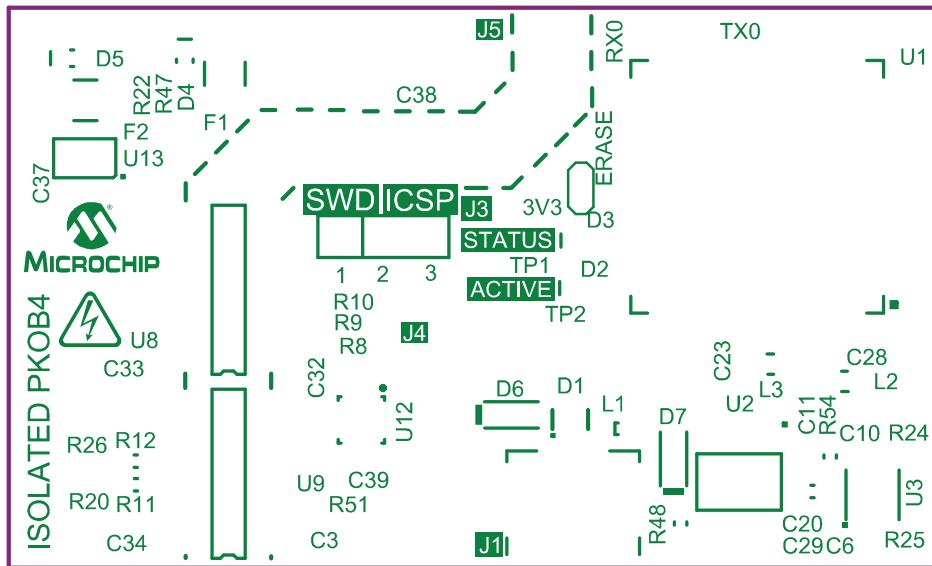
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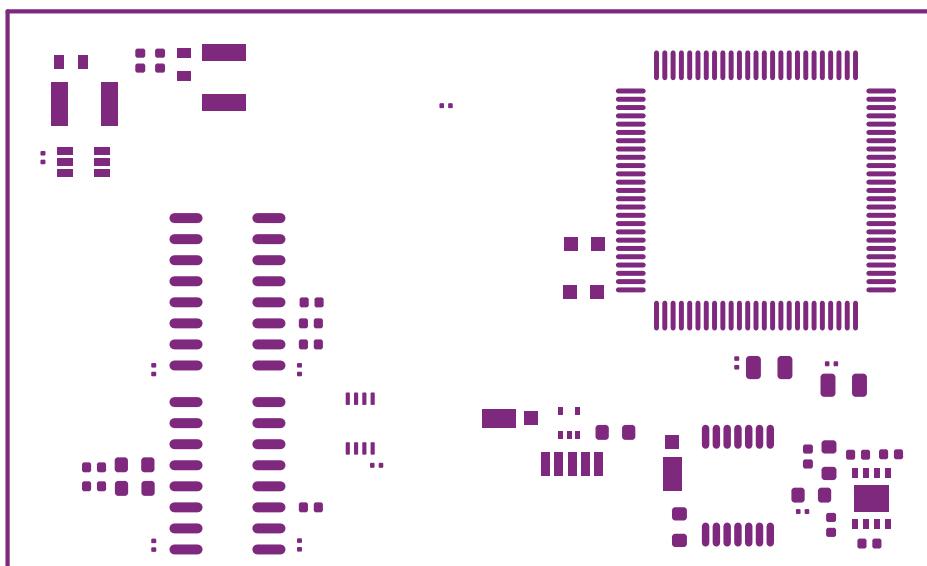
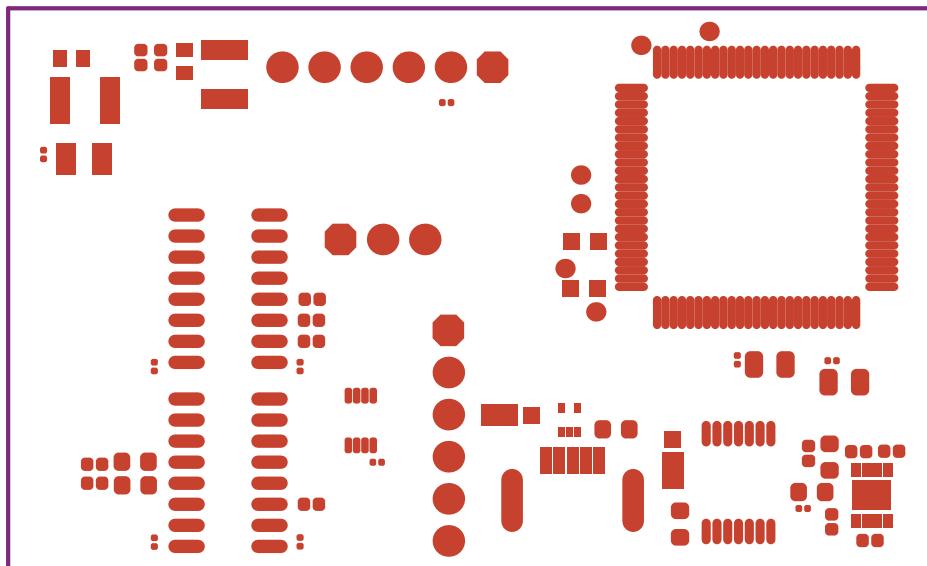
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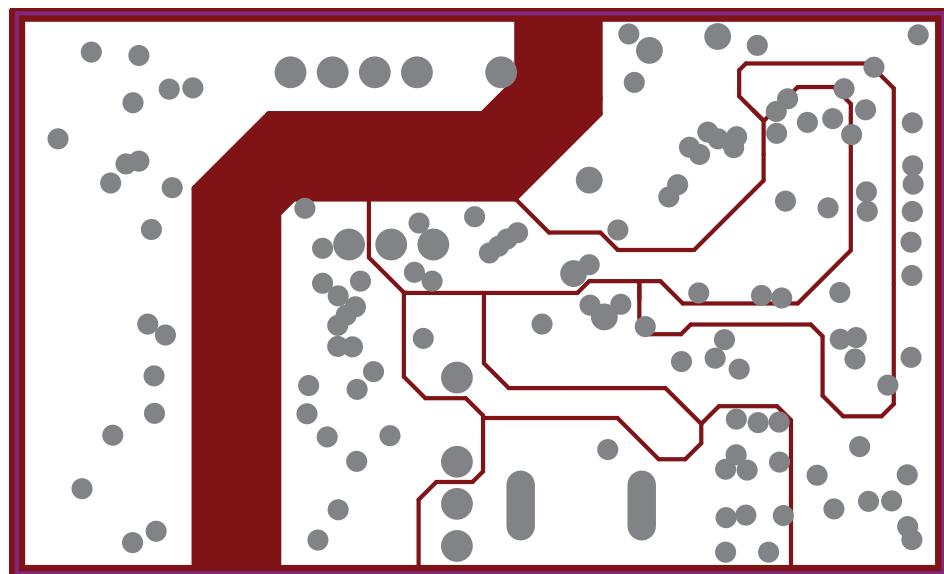
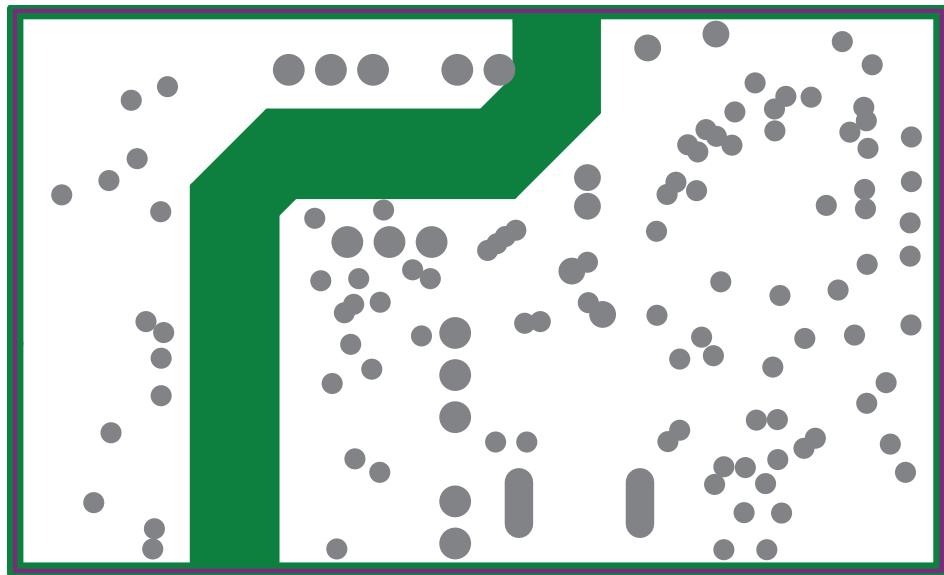


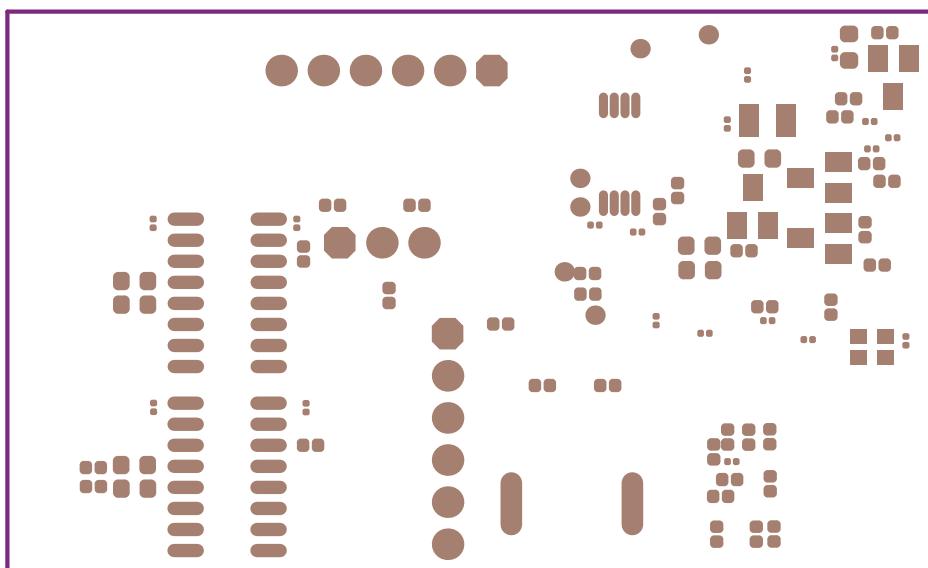
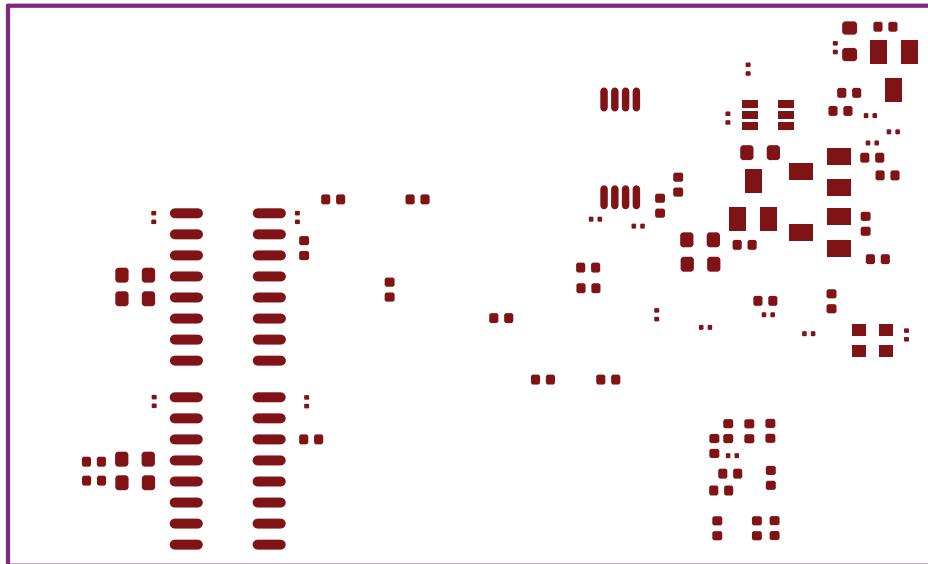
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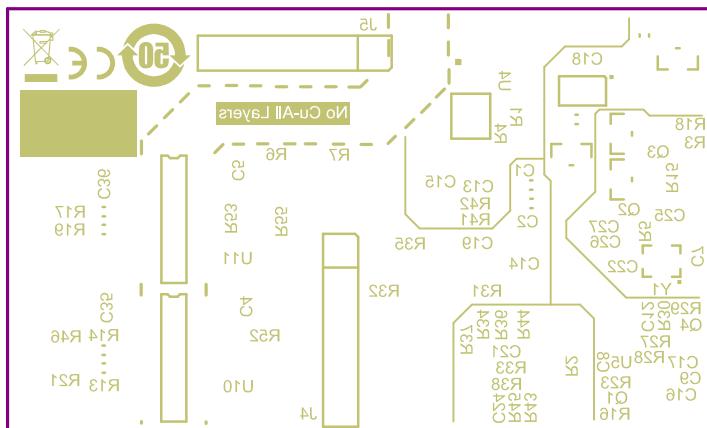
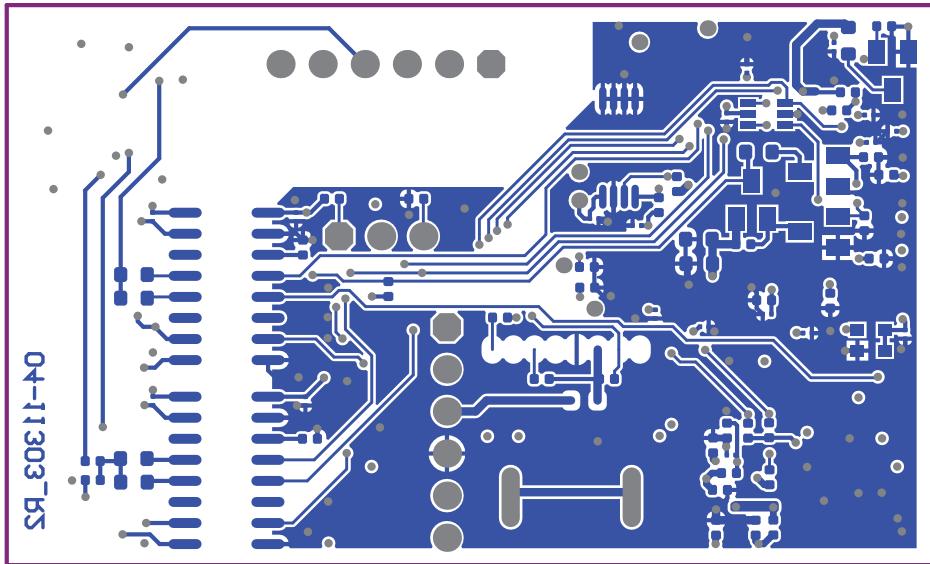






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ISBN: 978-1-5224-9690-8

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