

DAC121C085EVM Booster Pack User's Guide

User's Guide



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1. DAC121C085EVM Booster Pack Components

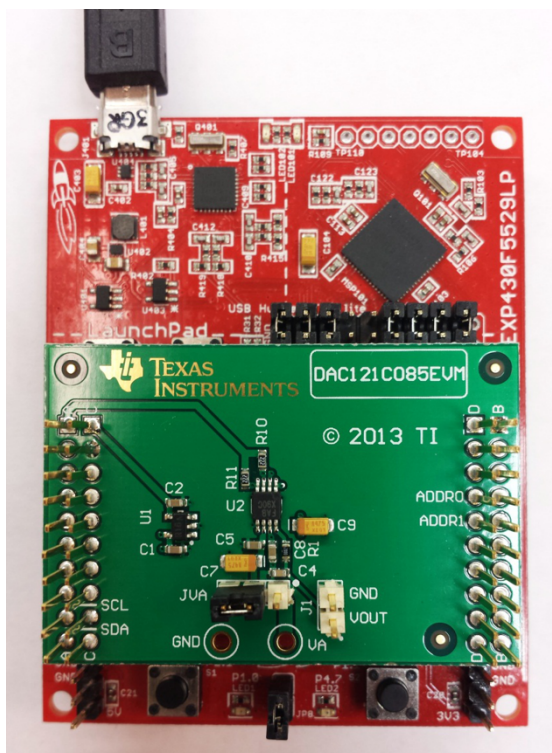


Figure 1-1. DAC121C085EVM Evaluation Board

Table 1-1. Device and Package Configurations

DEVICE	IC	PACKAGE
U1	LM4120AIM5-3.3	SOT-23
U2	DAC121C085C1MM	VSSOP-8

Software Installation

2.1 Graphical User Interface (GUI)

DAC121C085EVM GUI available upon request.

2.2 LaunchPad Firmware Upgrade

DAC121C085EVM Firmware available upon request

2.3 Update USB Driver

DAC121C085EVM USB Driver available upon request.

3. DAC121C085 BoosterPack Setup and Operation

3.1 Connections

1. Attach the DAC121C085EVM BoosterPack onto the MSP430 LaunchPad using connectors JA, JB, JC, JD. The proper orientation of the Launchpad and DAC121C085EVM is when the text “LaunchPad” and “2013 TI” are in the same direction.

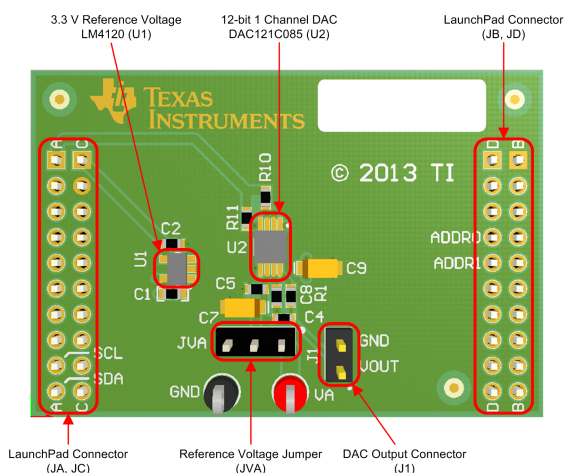


Figure 3-1. DAC121C085EVM Attached to MSP430

2. Connect the USB cable from the LaunchPad to the PC.

Board Layout

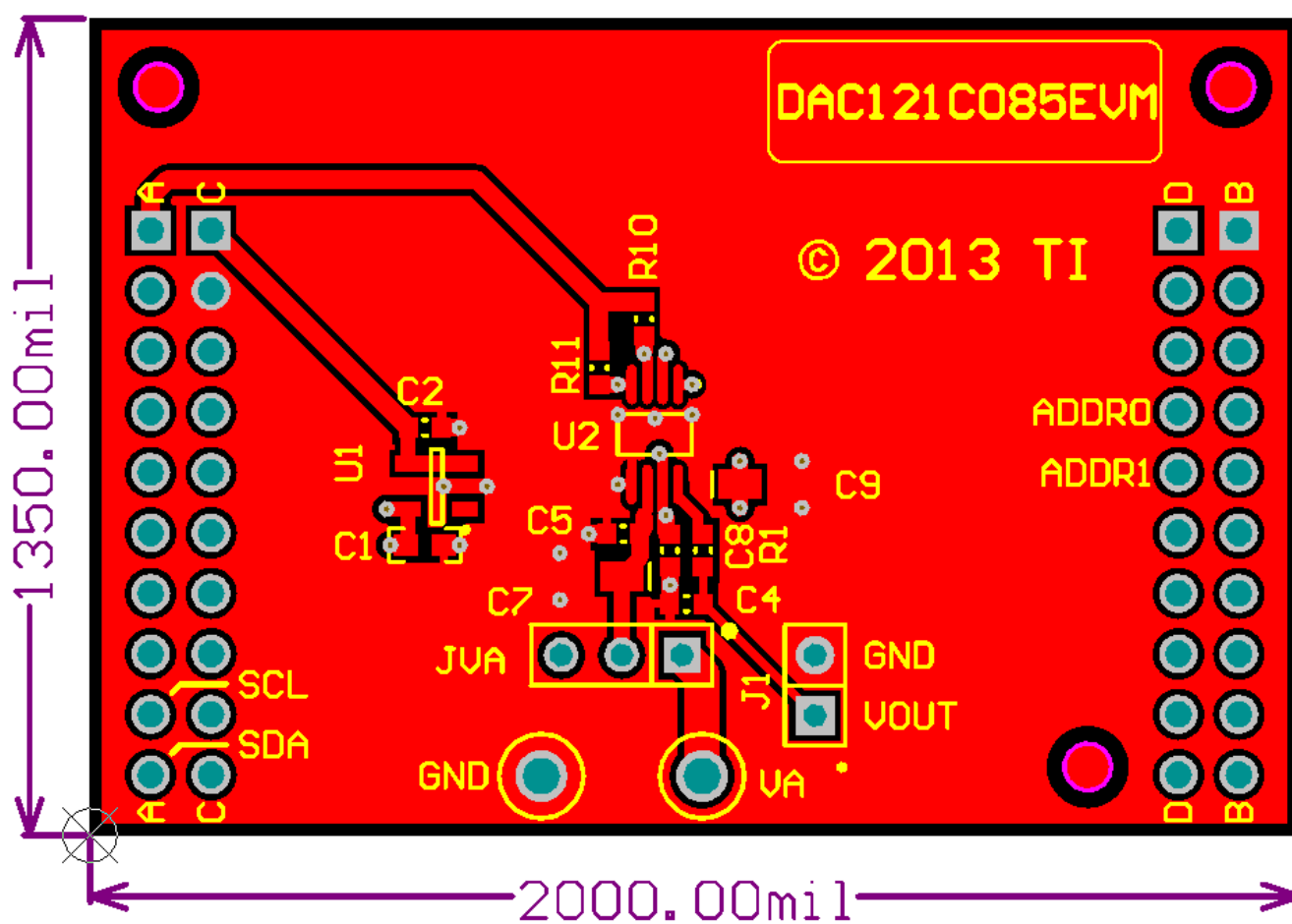


Figure 4-1. Top Assembly Layer

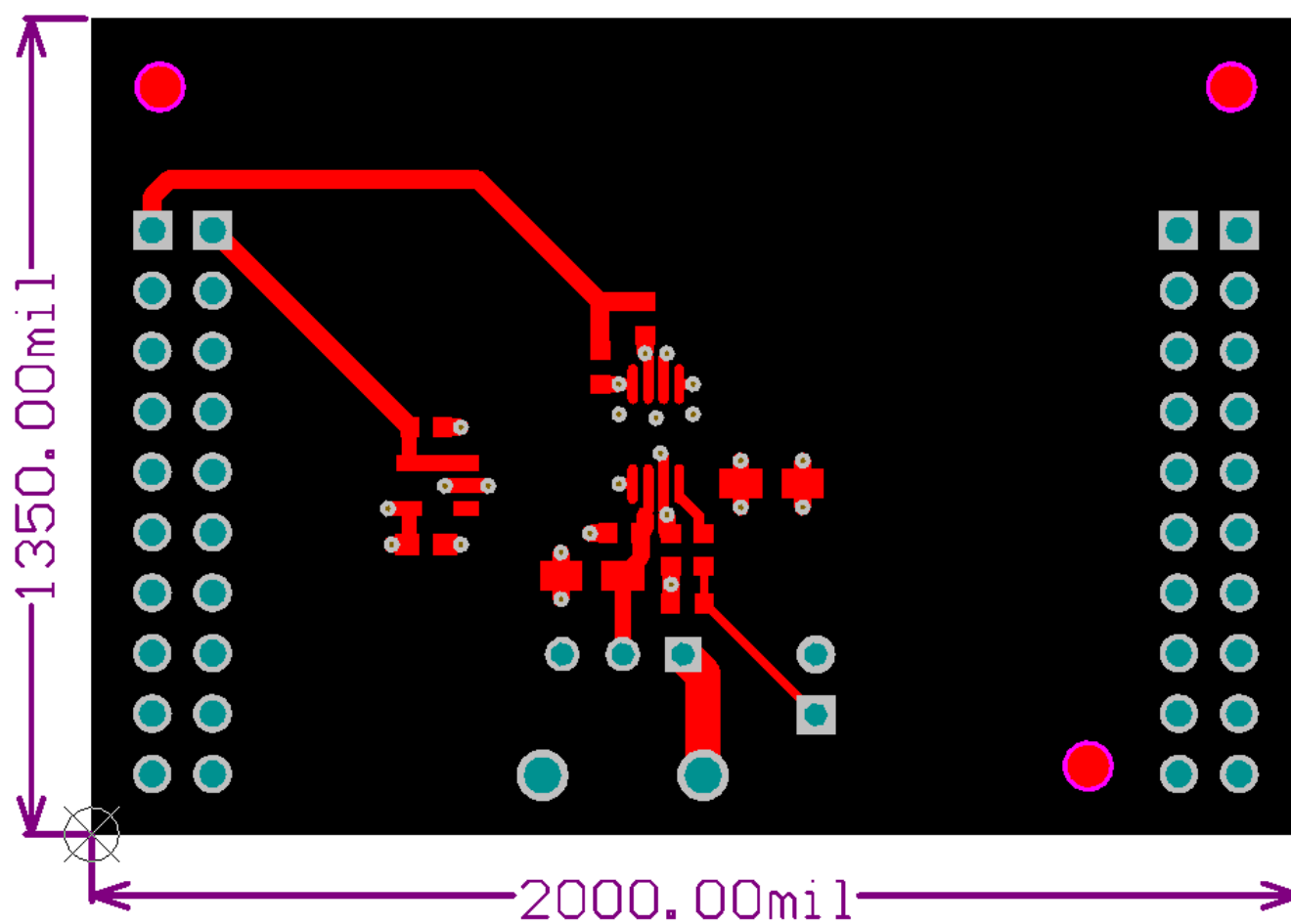


Figure 4-2. Top Layer Routing

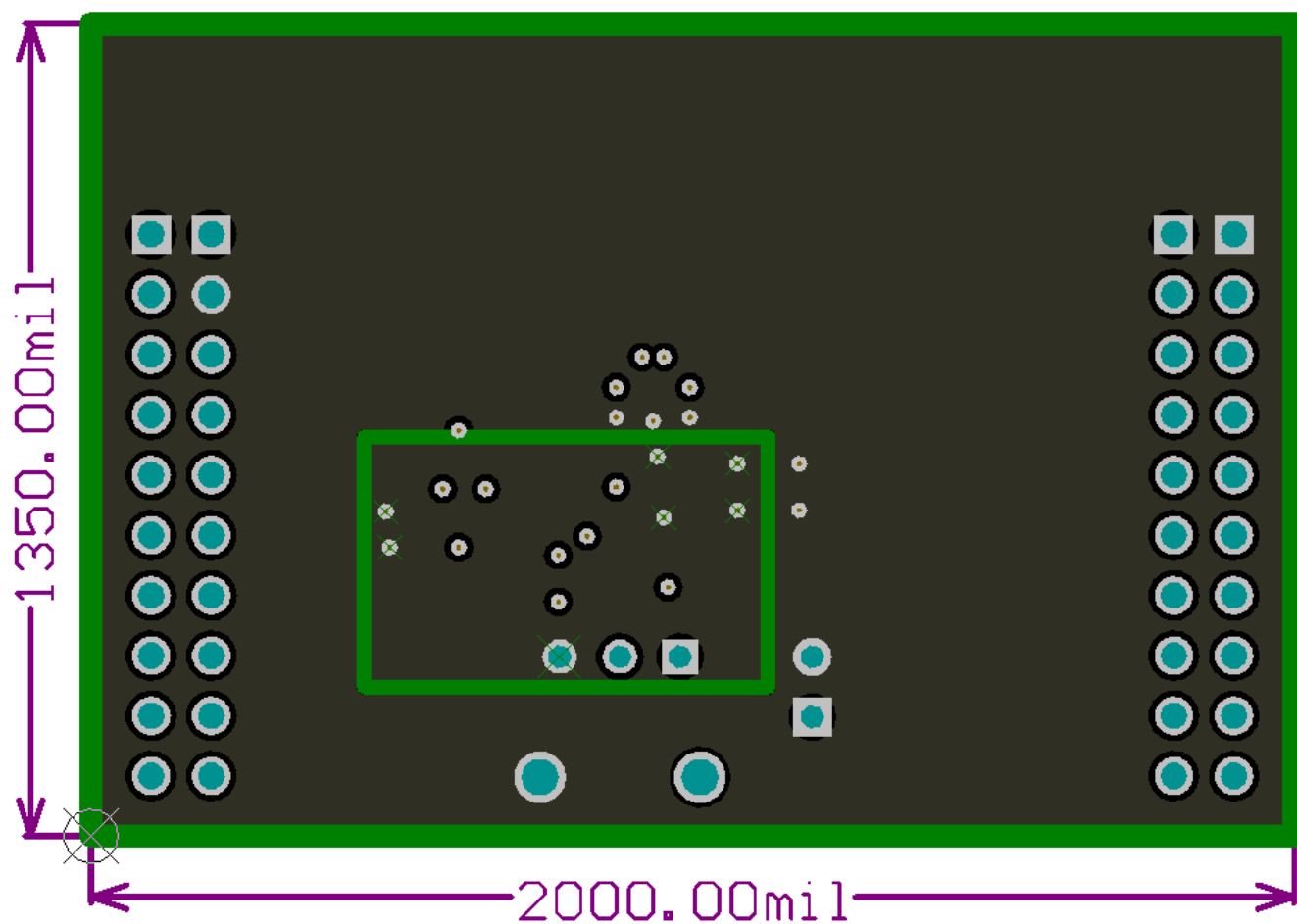


Figure 4-3. Power Layer Routing

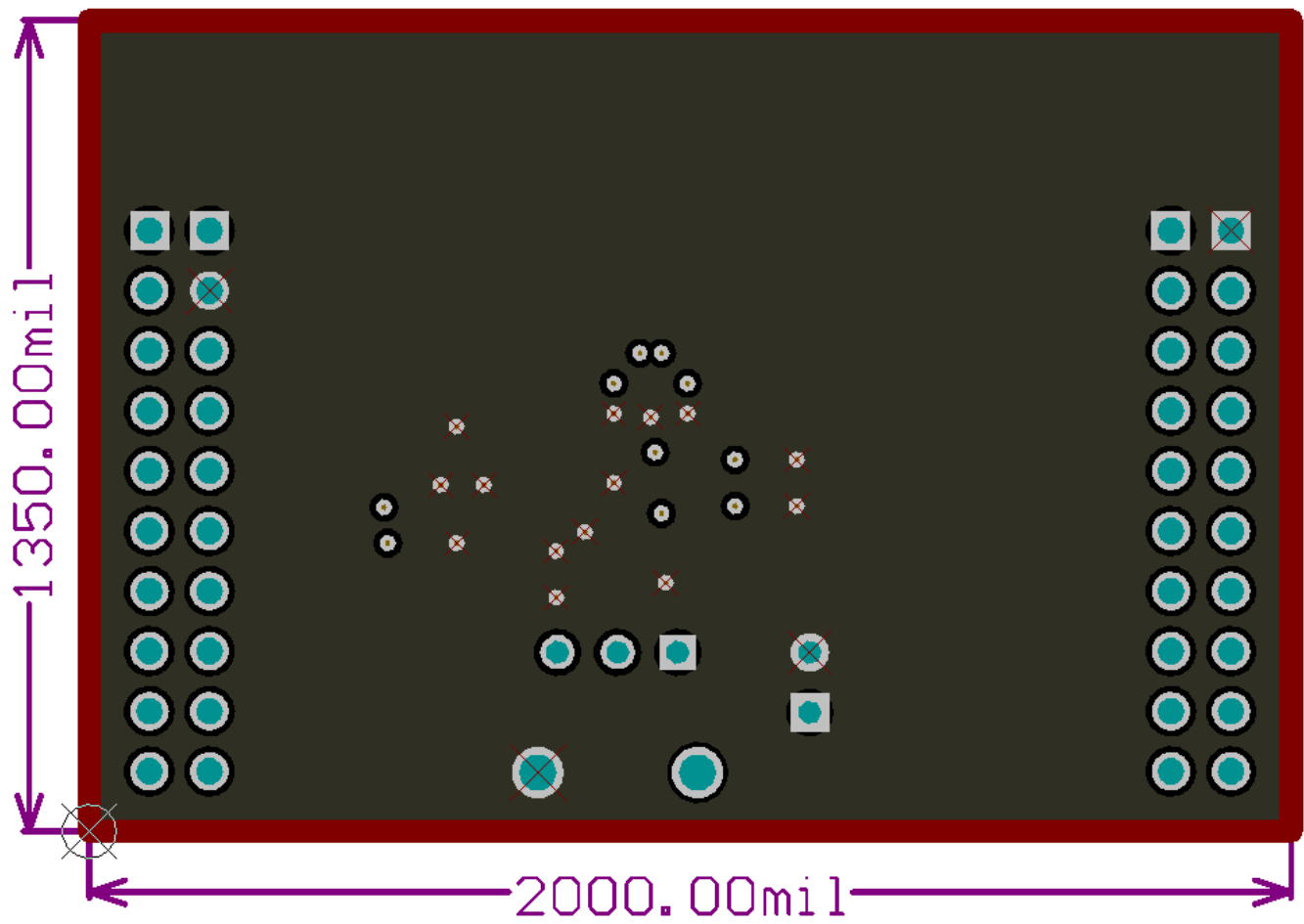


Figure 4-4. Ground Layer Routing

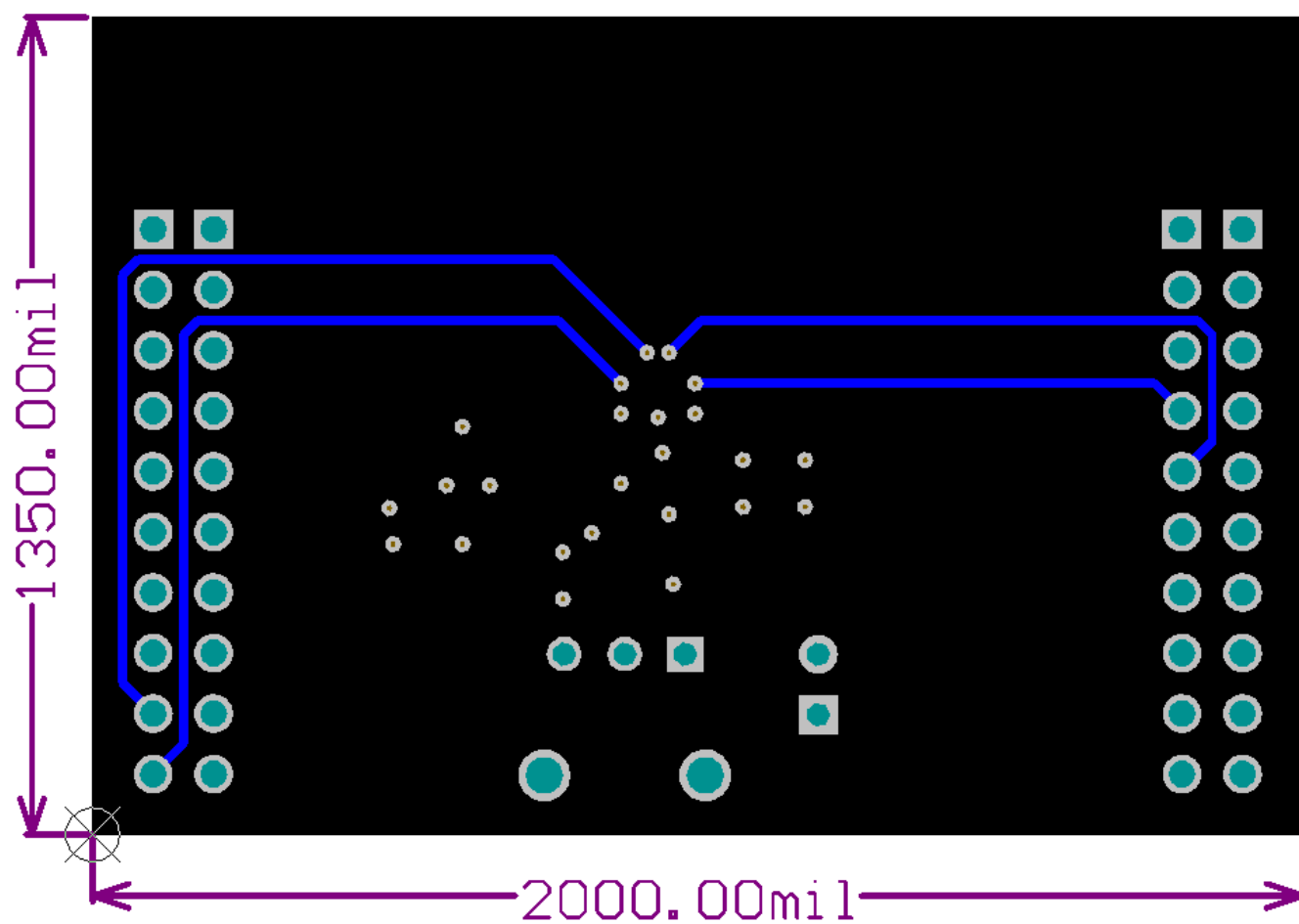


Figure 4-5. Bottom Layer Routing

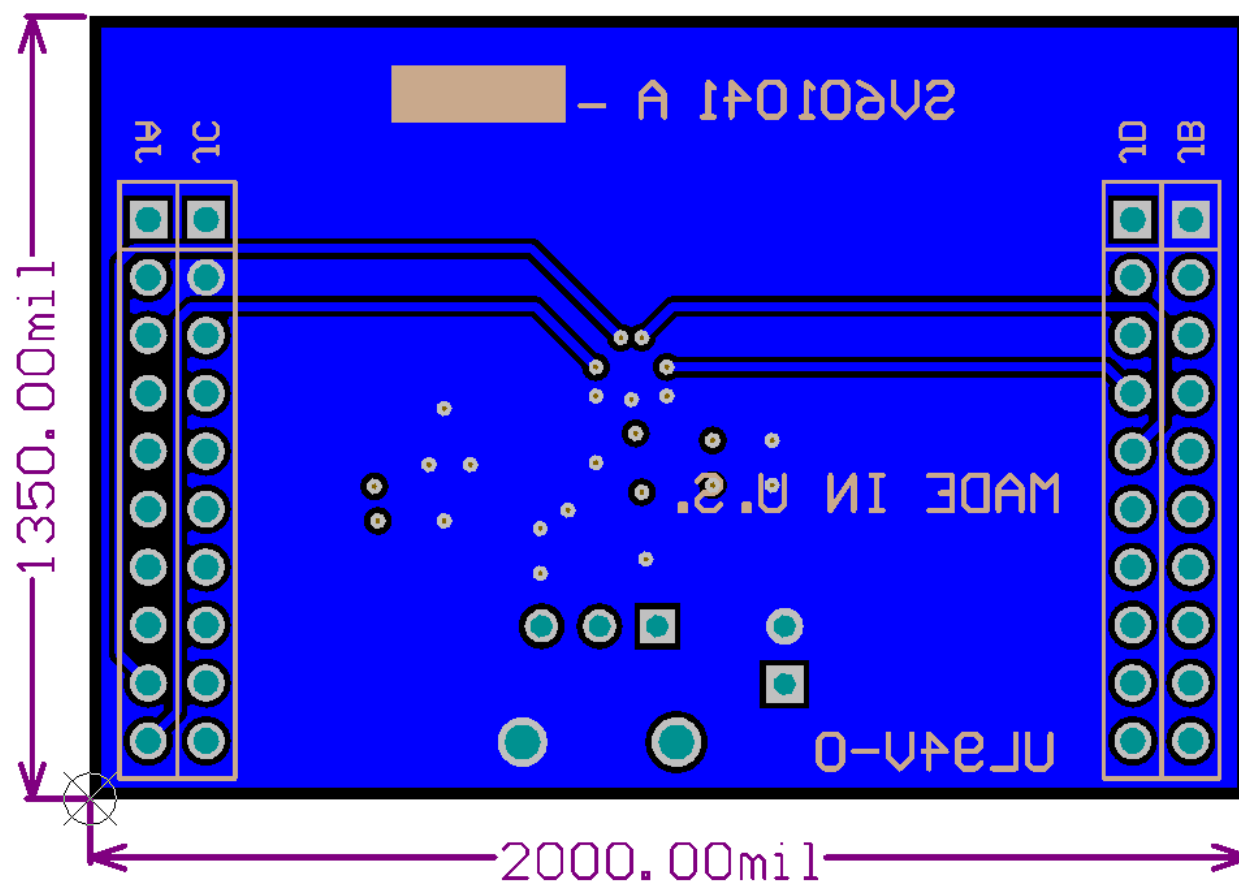


Figure 4-6. Bottom Assembly

Schematic

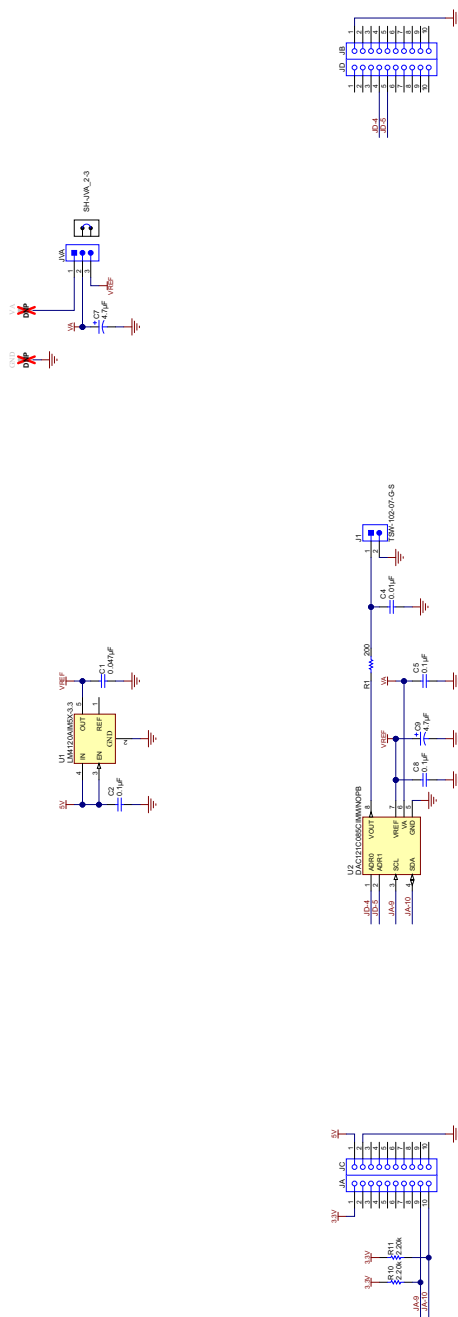


Figure 5-1. DAC121C085EVM Schematic

Bill of Materials

Table 6-1. DAC121S101 Bill of Materials

Designator	Quantity	Value	Description	PartNumber	Manufacturer
!PCB	1		Printed Circuit Board	SV601041	Any
C1	1	0.047uF	CAP, CERM, 0.047 μ F, 25 V, +/- 5%, X7R, 0603	06033C473JAT2A	AVX
C2, C5, C8	3	0.1uF	CAP, CERM, 0.1uF, 10V, +/-10%, X7R, 0603	C0603C104K8RACT U	Kemet
C4	1	0.01uF	CAP, CERM, 0.01uF, 25V, +/-10%, X7R, 0603	GRM188R71E103KA 01D	MuRata
C7, C9	2	4.7uF	CAP, TA, 4.7uF, 10V, +/-10%, 1.4 ohm, SMD	TPSA475K010R1400	AVX
J1	1		Header, TH, 100mil, 2x1, Gold plated, 230 mil above insulator	TSW-102-07-G-S	Samtec
JA, JB, JC, JD	4		Connector, Receptacle, 100mil, 10x1, Gold plated, TH	SSW-110-23-F-S	Samtec
JVA	1		Header, 100mil, 3x1, Tin plated, TH	PEC03SAAN	Sullins Connector Solutions
LBL1	1		Thermal Transfer Printable Labels, 0.650" W x 0.200" H - 10,000 per roll	THT-14-423-10	Brady
R1	1	200	RES, 200 ohm, 1%, 0.1W, 0603	CRCW0603200RFKE A	Vishay-Dale
R10, R11	2	2.20k	RES, 2.20k ohm, 1%, 0.1W, 0603	RC0603FR-072K2L	Yageo America
SH-JVA_2-3	1	1x2	Shunt, 100mil, Gold plated, Black	382811-6	AMP
U1	1		Precision Micropower Low Dropout Voltage Reference, 5-pin SOT-23, Pb-Free	LM4120IM5-3.3/NOPB	Texas Instruments
U2	1		12-Bit Micro Power Digital-to-Analog Converter with an I2C-Compatible Interface and External Reference, 8-pin Mini SOIC, Pb-Free	DAC121C085C1MM/N OPB	Texas Instruments
FID1, FID2, FID3	0		Fiducial mark. There is nothing to buy or mount.	N/A	N/A
GND	0	Black	Test Point, TH, Multipurpose, Black	5011	Keystone Electronics
VA	0	Red	Test Point, TH, Multipurpose, Red	5010	Keystone Electronics

Revision History

DATE	REVISION	NOTES
November 2014	*	Initial release.

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CAUTION

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

3.2 Canada

3.2.1 For EVMs issued with an Industry Canada Certificate of Conformance to RSS-210

Concerning EVMs Including Radio Transmitters:

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Concerning EVMs Including Detachable Antennas:

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. This radio transmitter has been approved by Industry Canada to operate with the antenna types listed in the user guide with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Concernant les EVMs avec antennes détachables

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante. Le présent émetteur radio a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés dans le manuel d'usage et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

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2. Use EVMs only after User obtains the license of Test Radio Station as provided in Radio Law of Japan with respect to EVMs, or
3. Use of EVMs only after User obtains the Technical Regulations Conformity Certification as provided in Radio Law of Japan with respect to EVMs. Also, do not transfer EVMs, unless User gives the same notice above to the transferee. Please note that if User does not follow the instructions above, User will be subject to penalties of Radio Law of Japan.

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