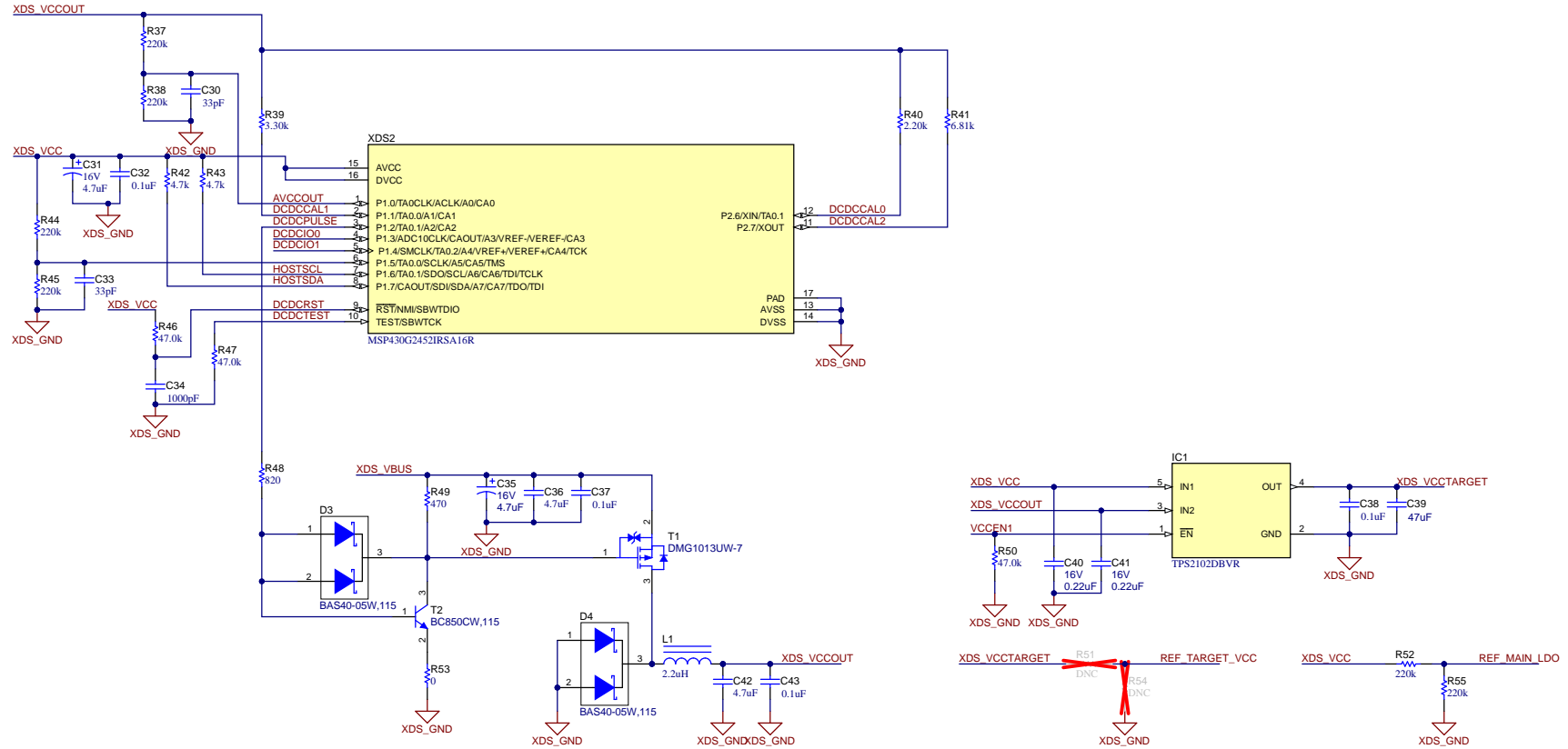




# Software-controlled DCDC converter

Energy measurement method protected under U.S. Patent Application 13/329,073 and subsequent patent applications



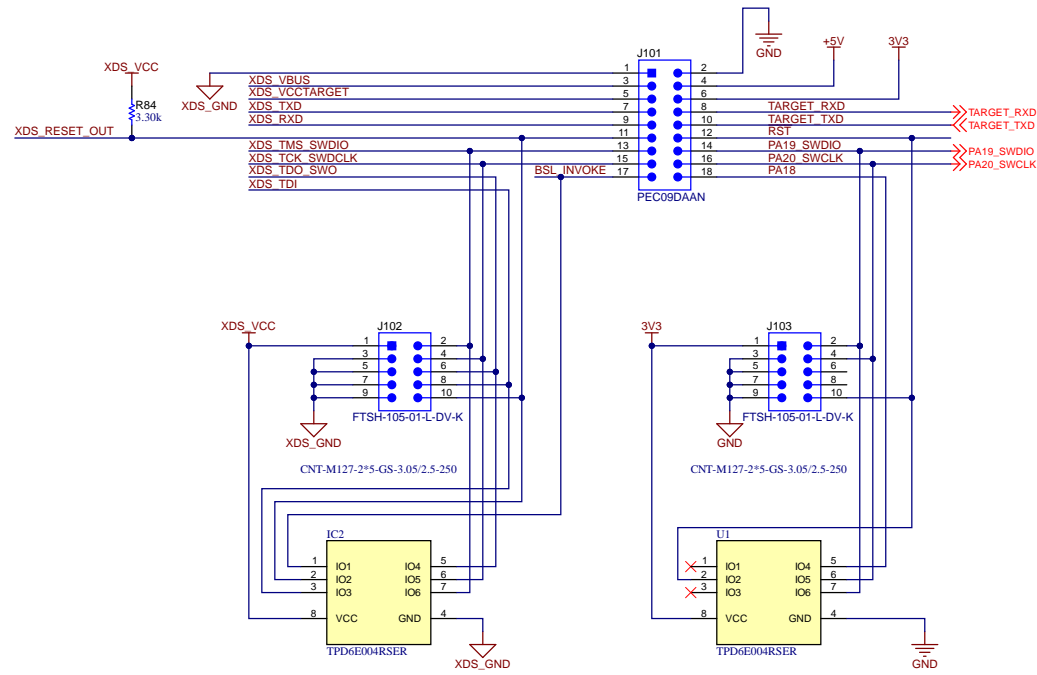
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Orderable: LP-MSPM0L1306	Designed for: Public Release	Mod. Date: 2022/10/13
TID #: N/A	Project Title: LP-MSPM0L1306	
Number: MCU099	Rev: A	Sheet Title: XDS110-ET_EnergyTrace
SVN Rev: Not in version control	Assembly Variant: Variant 1	Sheet: 3 of 6
Drawn By: Johnson He	File: MCU099_03_XDS110-ET_EnergyTrace.SchDoc	Size: B
Engineer: Johnson He	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	



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XDS110-ET <<----->> LaunchPad

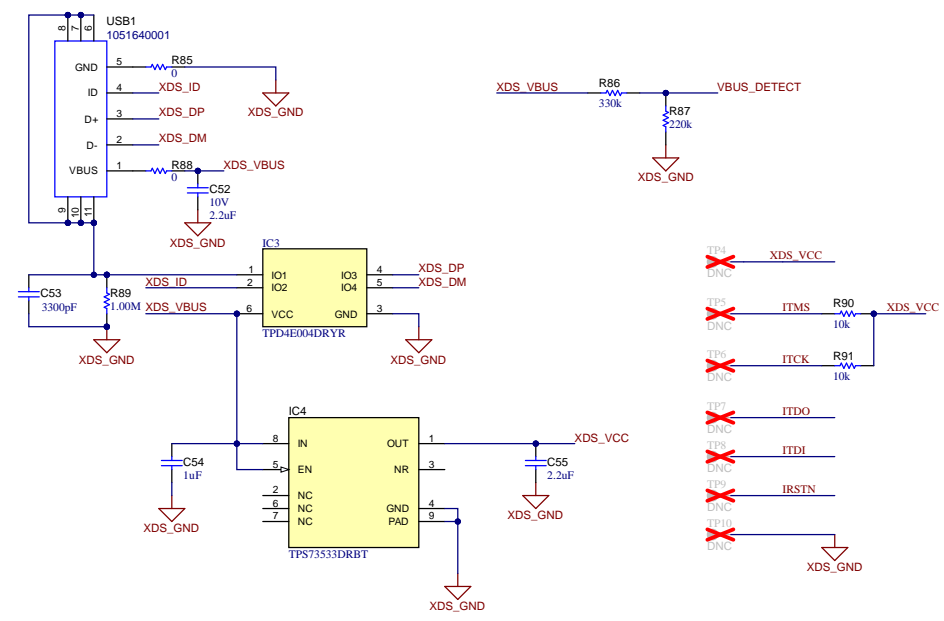


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Orderable: LP-MSPM0L1306	Designed for: Public Release	Mod. Date: 2022/10/13
TID #: N/A	Project Title: LP-MSPM0L1306	
Number: MCU099	Rev: A	Sheet Title: XDS110-ET Interface
SVN Rev: Not in version control	Assembly Variant: Variant 1	Sheet: 4 of 6
Drawn By: Johnson He	File: MCU099_04_XDS110_Target_Interface.SchDoc	Size: B
Engineer: Johnson He	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	



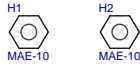
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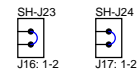
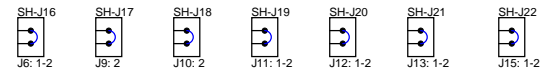
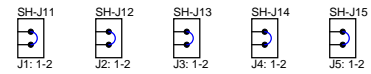
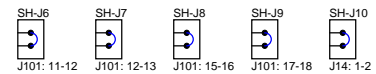
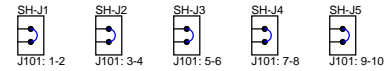
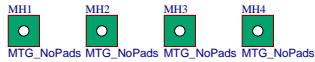
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Orderable: LP-MSPM0L1306	Designed for: Public Release	Mod. Date: 2022/10/13
TID #: N/A	Project Title: LP-MSPM0L1306	
Number: MCU099	Rev: A	Sheet Title: XDS110-ET USB Power
SVN Rev: Not in version control	Assembly Variant: Variant 1	Sheet: 5 of 6
Drawn By: Johnson He	File: MCU099_05_XDS110-ET_USB Power.SchDoc	Size: B
Engineer: Johnson He	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	<a href="http://www.ti.com">http://www.ti.com</a>





PCB Number: MCU099  
PCB Rev: A  
Printed Circuit Board



USB1  
MECH  
AK67421-0.3

ZZ1  
Assembly Note  
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ2  
Assembly Note  
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ3  
Assembly Note  
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

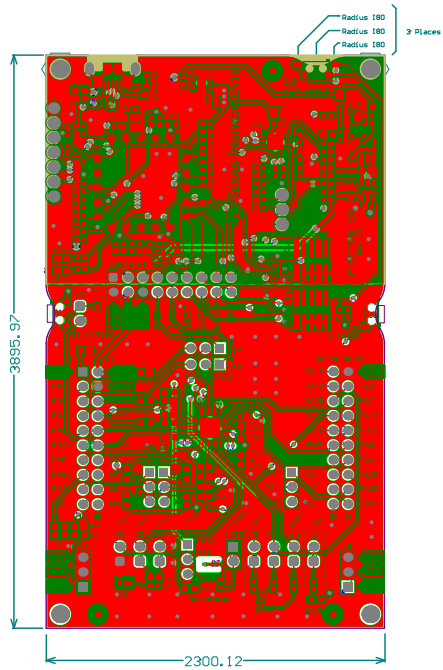
ZZ4  
Assembly Note  
Place a click-in Standoff (MAE-10, KangYang) in hole MH1/MH2

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Orderable: LP-MSPM0L1306	Designed for: Public Release	Mod. Date: 2022/10/13		
TID #: N/A	Project Title: LP-MSPM0L1306			
Number: MCU099	Rev: A	Sheet Title: Hardware		
SVN Rev: Not in version control		Assembly Variant: Variant 1		Sheet: 6 of 6
Drawn By: Johnson He		File: MCU099_06_Hardware.SchDoc		Size: B
Engineer: Johnson He		Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	<a href="http://www.ti.com">http://www.ti.com</a>	

- Z24 ■ Place a click-in Standoff (MSE-10, KangYang) in hole PMS/MS
- Z29 ■ These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.
- Z22 ■ These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

Layer Name	Material	Thickness	Constant	Board Layer Stack
Top Overlay	Solder Resist	0.40mil	3.5	
Top Solder	Solder Resist	0.40mil	3.5	
1	Top Layer	1.40mil		
Dielectric 2	FR-4	8.43mil	4.2	
2	Top Layer	1.40mil		
Dielectric 3	FR-4	8.43mil	4.2	
3	Top Layer	1.40mil		
Dielectric 4	FR-4	8.43mil	4.2	
4	Bottom Layer	1.40mil		
Bottom Solder	Solder Resist	0.40mil	3.5	
Bottom Overlay	Solder Resist	0.40mil	3.5	



DESIGN INFORMATION

MIN. TRACK WIDTH: 8 MIL  
 MIN. CLEARANCE: 0.2 mm  
 MIN. VIA PAD SIZE: 24 MIL

MINIMUM ANNUAL RING: 0.05mm (2ML) EXTERNAL  
 PER: IPC-D-275 CLASS 2 LEVEL C

REGISTRATION TOLERANCES: METAL +/- 5 MIL HOLES +/- 3 MIL  
 HOLE SIZE TOLERANCE (UNLESS OTHERWISE SPECIFIED): +/- 3 MIL

MATERIAL:  
 FR-408  FR-4 High Tg  OTHER \_\_\_\_\_

THICKNESS:  62 MIL (1.6mm) +/-10%  OTHER \_\_\_\_\_

TOLERANCE:  ANS IPC-6012 TYPE 3 CLASS 2  
 OTHER +/- \_\_\_\_\_

BOW & TWIST:  ANS IPC-6012 TYPE 3 CLASS 2  
 OTHER +/- \_\_\_\_\_

DRILLING:  AS SHOWN  NC DRILL FILES

PTH COPPER THICKNESS:  20-30 um  OTHER \_\_\_\_\_

BOARD FINISH:  
 SUGSCREEN:  TOP  BOTTOM  
 SUGSCREEN COLOR:  WHITE  OTHER \_\_\_\_\_  
 SOLDER RESIST COLOR:  GREEN  OTHER RED  
 WHITE  SEMI-GLOSS

SURFACE FINISH:  AMERSON GOLD (ENIG)  ENERP  
 IM. TMS/SLUR OR ECUV  OTHER \_\_\_\_\_

ARRAY/PANEL:  CUT AND TRIM PER MT BOARD OUTLINE  
 NC ROUTE  V. SCORE

CERTIFICATION: MATERIALS AND WORKMANSHIP FOR ALL PCBs TO MEET OR EXCEED THE REQUIREMENTS ON:  
 ANS IPC-A-601F CLASS 2 ->  1  2  3  
 RoHS  OTHER PER ORDER

ALL BOARDS MUST MEET OR EXCEED UL94-V0 REQUIREMENTS.  
 PCB MUST BEAR THE UL94-V0 UL REGISTERED MATERIAL ID NUMBER

ADDITIONAL REQUIREMENTS:  
 MICROSECTION:  YES  NONE  REQUIRED  PER ORDER  
 BARE BOARD ELEC. TEST:  NONE  REQUIRED  PER ORDER



PROJECT TITLE: LP-HSPML1306

DESIGNED FOR: Public Release

FILE NAME: HCU099\_HSPML1306\_PCB.PcbDoc

DESIGNER: Johnson He  
 LAYOUT BY: Johnson He

SCALE: 1:00  
 ALT. DESIGNER VERSION: 23.9.2.47



COMPONENTS MARKED 'IMP' SHOULD NOT BE POPULATED.  
 ASSEMBLY VARIANTS (No Variations)

DATE: 2024/11/26  
 TIME: 10:30:00

PCB NUMBER: 1306-0001	REV: 1	DATE: 2024/11/26	TIME: 10:30:00	DESIGNER: Johnson He	LAYOUT BY: Johnson He
LAYER NAME: TOP	TID: 1306	REV: 1	DATE: 2024/11/26	TIME: 10:30:00	DESIGNER: Johnson He
PLOT NAME: 1306_PCB.PcbDoc	GENERATED: 2024/11/26	DATE: 2024/11/26	TIME: 10:30:00	DESIGNER: Johnson He	LAYOUT BY: Johnson He

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