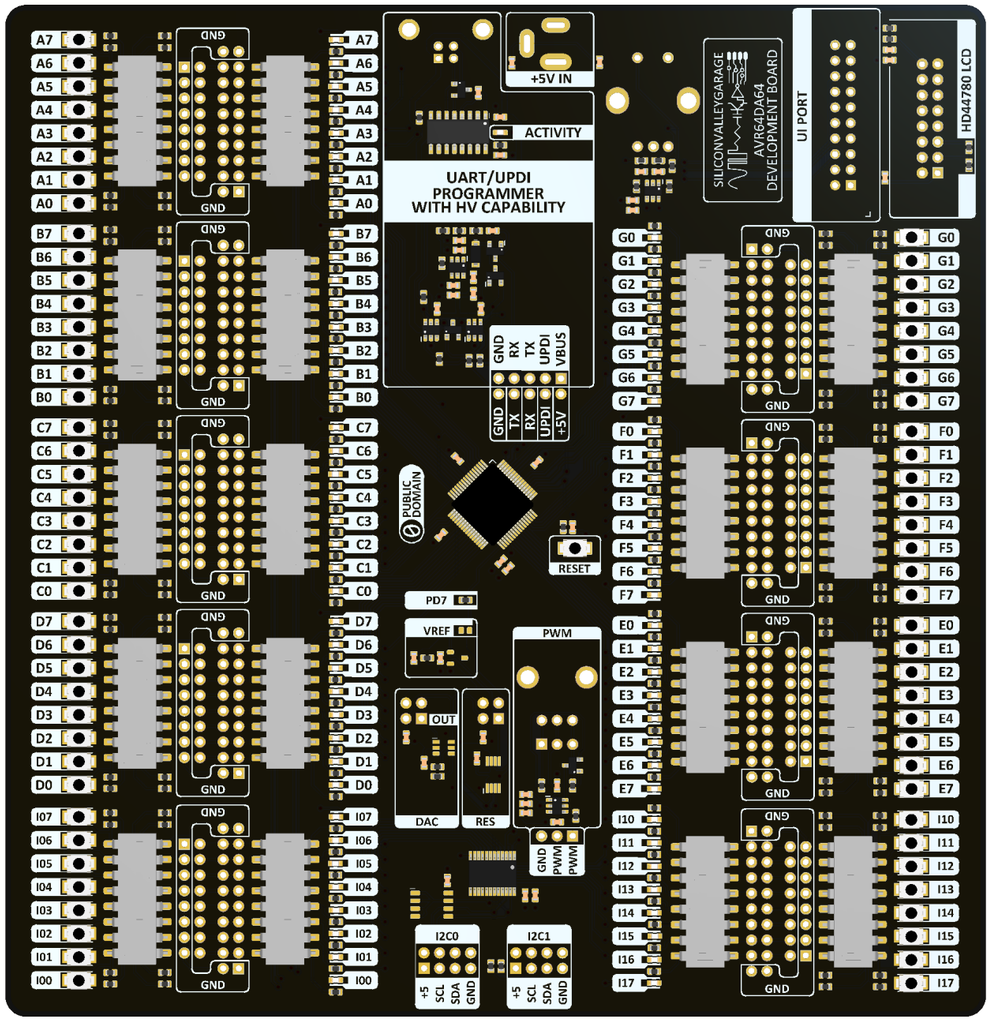
AVR64DA64-BREAKOUT.PrjPcb

Realistic View



Document Creation Date: 9/23/2025

Design : =SCHdrafter

SILICONVALLEYGARAGE

Breakout Board for AVR64Dx64 processor. Both DA and DB can be used.
BOM and Pick and Place is optimized for fabrication/assembly at JLCPCB. All thru-hole and non-basic components are omitted as those are too expensive to have installed. The exception is the UPDI interface and of course the processor itself. You may have to switch that manually in during project order between a DA and DB version depending on what is in stock

The PWM , 2.0248V reference, I2C DAC , Digital Potentiometer and FRAM are optional.

UPDI programmer : This implements a HV capable UPDI programmer RTS serves as the trigger for the HV pulse. This is compatible with most UPDI software out there.

THe DTR pin switches between UPDI and UART mode. When in UPDI mode the USB-Serial converter is connected to UART0.

J5 allows you to completely disconnect the programmer from the board. You can bridge all the signals or only some of the signals.

When the reference source for 2.048 Volt is in use, install R46 and remove R47. (move the resistor between locations.)

THe UI interface connector may not serve a purpose for general use. This is something custom for UI systems i use.

The LCD interface uses a standard 2x8 pinheader that mates with most 2x40 and some other displays with that pinout.

There is an extra bank of I/O pins on the I2C bus 0 behind a PCAL9555. You can use a PCA9555 as well, they are pin compatible. The L variant has extra I/O configuration registers as well as event-trapping ability.

Ever I/O bank has a LED and a button attached. You can enable/disable these with the adjacent dip-switches.

You can use either a 24Cxx EEpron or an FRAM device. They are pin and address compatible. The DAC requires the 2.048 volt reference generator to be installed. You do NOT need to connect the reference to the processor. It has its internal VREF, but you could optionally use the external one, or measure it using the built-in ADC of the processor.

SILICONVALLEYGARAGE
Instruments

AVR64Dx64
Breakout Board

PWM ADJUSTABLE OSCILLATOR 250HZ *

R38 10K
R1 1K 1/10W 1%
R2 1K 1/10W 1%
J1
D1
BAV99
U2B
U2C
R41 470R 1/10W 1%
J14
C1 X5R 16V 4u7
C30 X5R 16V 4u7
C31 X5R 16V 4u7
C32 X5R 16V 4u7
GND

* OPTIONAL BLOCK

5V DC INPUT, CENTER POSITIVE

J8
PJ002B
C34 X5R 16V 4u7
C35 X5R 16V 4u7
C7 X5R 16V 4u7
C8 X7R 50V 100nF
U7A VCC GND
U2A VCC GND
C10 X7R 50V 100nF
P5VD
GND

2.048V REFERENCE *

P5VD
R42 1K 1/10W 1%
C26 X5R 16V 4u7
C27 X7R 50V 100nF
U12 LM4040-2.048
VREF
R46 470R 1/10W 1%
GND

* OPTIONAL BLOCK

UPDI PROGRAMMER WITH HV PULSE / UART

VBUS
L1 4u7H 10uH
D2 B5819L
C13 X7R 50V 100nF
C38 X5R 16V 4u7
C39 X5R 16V 4u7
U3 MT3608 VIN SW EN FB GND
R15 18K 1/10W 1%
R43 1K 1/10W 1%
R45 1K 1/10W 1%
C36 X5R 16V 4u7
C37 X5R 16V 4u7
R44 10K 1/10W 1%
C40 X7R 50V 100nF
Q1 AO3401
D14 BAV99
RTS
C14 X7R 50V 100nF
U5 74V1G3157
R12 470R 1/10W 1%
D3 BAV99
R13 1K 1/10W 1%
C17 X7R 50V 100nF
R16 470R 1/10W 1%
U6 74V1G3157
C16 X5R 16V 4u7
C9 X7R 50V 100nF
J4
D4 PESD2USB5
R11 1K 1/10W 1%
C18 X7R 50V 100nF
U4 VCC USBDM USBDP RESET 3V3OUT GND TXD RXD RTS CTS DTR DSR DCD RI TNOW
R14 1K 1/10W 1%
LED PS
R17 10K 1/10W 1%
USBTX
USBRX
J15
UPDI
UART-RX
UART-TX

UI INTERFACE

J7

F-POWERON	3	4	F-SCL
F-LCDRS	5	6	F-SDA
	7	8	F-KEYINT-A
F-LCDE	9	10	F-KEYINT-B
F-LCD4	11	12	LED-ILIMIT
F-LCD5	13	14	LED-PLIMIT
F-LCD6	15	16	ROT-PHA
F-LCD7	17	18	ROT-PHB
GND	19	20	GND

P5VD P5VD

* OPTIONAL BLOCK

SW1 PEC12R-XX
R3 4K7 1/10W 1%
R4 4K7 1/10W 1%
R5 4K7 1/10W 1%
R6 4K7 1/10W 1%
U_PCAL9555IO PCAL9555IO.SchDoc
SCL SDA INT A0 A1 A2
F-SCL F-SDA
R7 4K7 1/10W 1%
R8 4K7 1/10W 1%
R9 4K7 1/10W 1%
R39 470R 1/10W 1%
R40 470R 1/10W 1%
C2 X7R 50V 100nF
C3 X7R 50V 100nF
ROT-PHA ROT-PHB
U7C SN74LVC2G14
U7B SN74LVC2G14
J2
J3
R47 470R 1/10W 1%

U1 IC-ATMEL-AV64DA64-QFP64

VDD			6	
VDD			20	
VDD			56	
	USART0-TxD		62	
	USART0-RxD		63	
	TWI0-SDA(H)		64	SDA0
	TWI0-SCL(H)		1	SCL0
	PA4		2	PA4
AVDD	PA5		3	PA5
	PA6		4	PA6
	PA7		5	PA7
	PB0		8	PB0
	PB1		9	PB1
UPDI	PF6		51	
	TWI1-SDA(H)		50	SDA1
	TWI1-SCL(H)		10	SCL1
	PB4		11	PB4
	PB5		12	PB5
	PB6		13	PB6
	PB7		14	PB7
	PC0		15	PC0
	PC1		16	PC1
	PC2		17	PC2
	PC3		18	PC3
	PC4		19	PC4
	PC5		22	PC5
	PC6		23	PC6
	PC7		24	PC7
	PD0/AIN0		25	PD0
	PD1/AIN1		26	PD1
	PD2/AIN2		27	PD2
	PD3/AIN3		28	PD3
	PD4/AIN4		29	PD4
	PD5		30	PD5
	PD6		31	PD6
	PD7/VREFA		32	PD7
	PE0		33	PE0
	PE1		36	PE1
	PE2		37	PE2
	PE3		38	PE3
	PE4		39	PE4
	PE5		40	PE5
	PE6		41	PE6
	PE7		42	PE7
	PF0		43	PF0
	PF1		44	PF1
	PF2		45	PF2
	PF3		46	PF3
	PF4		47	PF4
	PF5		48	PF5
	PG0		49	PG0
	PG1		52	PG1
	PG2		53	PG2
	PG3		54	PG3
	PG4		55	PG4
	PG5		58	PG5
	PG6		59	PG6
	PG7		60	PG7
GND			7	
GND			21	
GND			35	
GND			57	
			61	

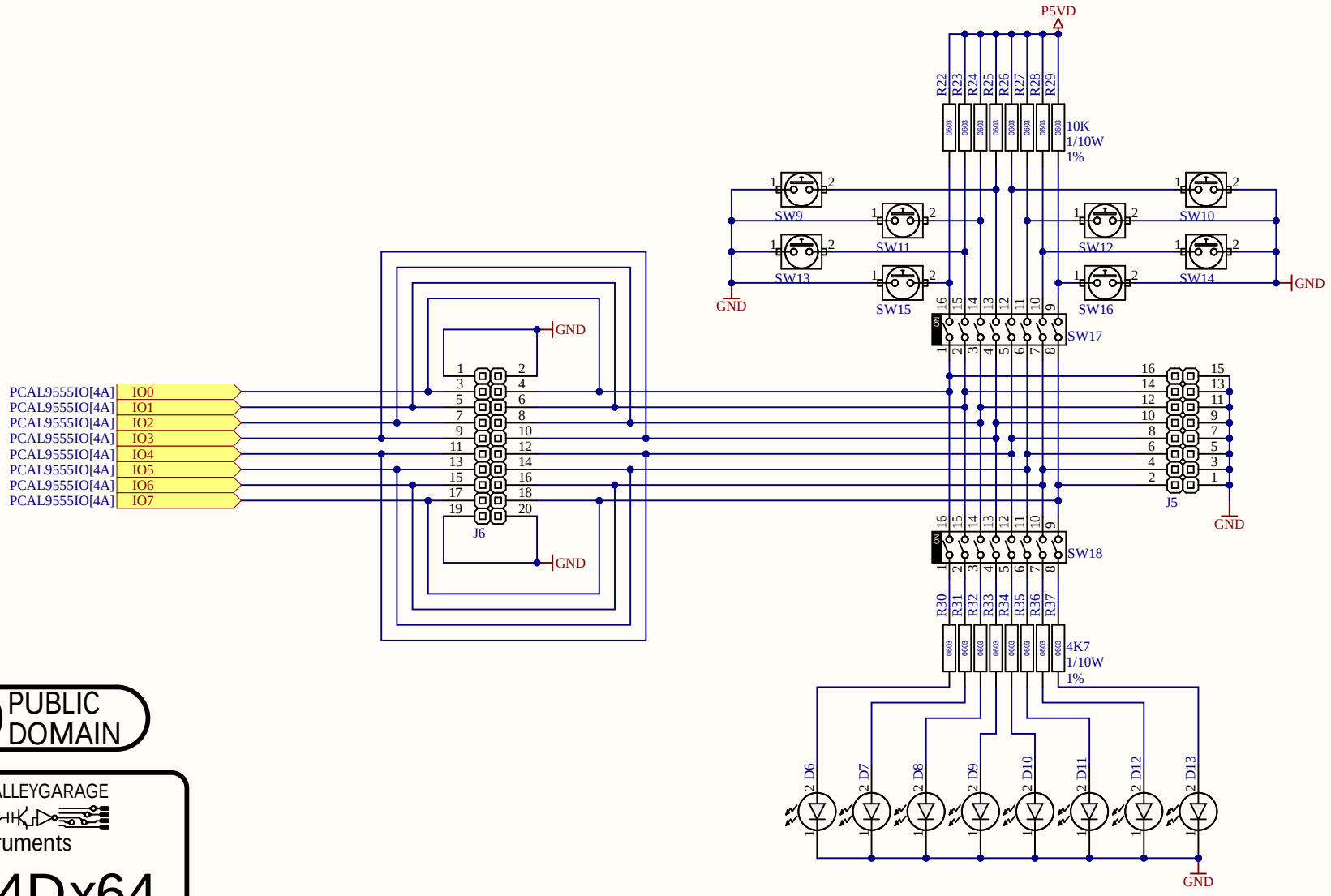
C4 X5R 16V 4u7
C5 X7R 50V 100nF
C6 X7R 50V 100nF
C11 X5R 16V 4u7
C12 X7R 50V 100nF
C15 X7R 50V 100nF
R10 470R 1/10W 1%
SW6

PORTA AVR64DA64-IO.SchDoc
PORTB AVR64DA64-IO.SchDoc
PORTC AVR64DA64-IO.SchDoc
PORTD AVR64DA64-IO.SchDoc
PORTE AVR64DA64-IO.SchDoc
PORTF AVR64DA64-IO.SchDoc
PORTG AVR64DA64-IO.SchDoc

LCD INTERFACE, 4-BIT, 2X16 PINHEADER FOR 2X40 LCD

R18 10K 1/10W 1%
R19 470R 1/10W 1%
C33 X5R 16V 4u7
C19 X5R 16V 4u7
C20 X7R 50V 100nF
F-LCDRS
F-LCDE
F-LCD4
F-LCD5
F-LCD6
F-LCD7
GND VCC CTR RS R/W D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15
R20 470R 1/10W 1%
R21 470R 1/10W 1%
DISP1

SILICONVALLEYGARAGE
Instruments
AVR64Dx64
Breakout Board



SILICONVALLEYGARAGE Instruments

AVR64Dx64

Breakout Board

PCAL1
AVR64DA64-IO.SchDoc

PCAL0
AVR64DA64-IO.SchDoc

IO7 IO6 IO5 IO4 IO3 IO2 IO1 IO0

U8

P1-7 P1-6 P1-5 P1-4 P1-3 P1-2 P1-1 P1-0
P0-7 P0-6 P0-5 P0-4 P0-3 P0-2 P0-1 P0-0

VCC
GND
SCL
SDA
INT
A0 A1 A2
0100_XXXR

P5VD
C23 X5R 16V 4u7
C24 X7R 50V 100nF
GND

AVR64DA64-BREAKOUT[7A] SCL
AVR64DA64-BREAKOUT[7A] SDA
AVR64DA64-BREAKOUT[7A] INT
AVR64DA64-BREAKOUT[7A] A0
AVR64DA64-BREAKOUT[7A] A1
AVR64DA64-BREAKOUT[7A] A2

I2C DAC

P5VD
C21 X7R 50V 100nF
C28 X7R 50V 100nF
VREF
GND
SCL SDA REF VCC OUT GND
U9 MCP4706A0T
J11

I2C DIGITAL POTENTIOMETER

P5VD
C22 X7R 50V 100nF
U10
VDD SCL SDA HVC/A0 VSS
0101_11XR
MCP4551T-103
J12
VREF C29 X7R 50V 100nF

I2C FRAM / EEPROM

P5VD
C25 X7R 50V 100nF
U11 FM24C64B-GTR
SCL SDA A0 A1 A2 VCC WP GND
1010_XXXR

SILICONVALLEYGARAGE Instruments

AVR64Dx64

Breakout Board

GENERAL

GENERAL

1. DO NOT ALTER SUPPLIED COPPER OR DRILL DATA
2. NO COPPER BALANCING OR REMOVAL OF UNUSED PADS ALLOWED.
3. SILKSCREEN MAY BE CLIPPED / TRIMMED TO EXPOSE COPPER
4. PCB DESIGN AND ACCEPTANCE CRITERIA SHALL FOLLOW THE REQUIREMENTS OF IPC-2221, IPC-2222, AND IPC-6012 CLASS 2
5. ALL SPECIFICATIONS SHALL BE THE LATEST STANDARDS, UNLESS OTHERWISE NOTED
6. ALL MODIFICATIONS MUST BE COMMUNICATED AND APPROVED IN WRITING.

MATERIALS

7. MATERIALS SHALL BE ACCORDING TO THE STACKUP DRAWING IN THIS DOCUMENT.
8. MATERIAL SHALL HAVE A FLAMABILITY RATING OF UL 94V-0 OR BETTER
9. SURFACE FINISH : HASL
10. SOLDER MASK COLOR : BLACK
11. SOLDERMASK MAX REGISTRATION ERROR : 0.05mm
12. SILKSCREEN COLOR : WHITE

STACKUP / IMPEDANCE CONTROL

13. THICKNESS LISTED IN LAYER STACK LEGEND REPRESENT FINAL PRESSED VALUES FOR THE PREPREG
14. IMPEDANCE CONTROL, IF ANY, SHALL BE PER LISTED TABLE WITH A MAX TOLERANCE OF +/-10%

QA, ELECTRICAL TEST AND MARKINGS

15. PCB SHALL BE 100% ELECTRICALLY TESTED FOR SHORTS AND CONTINUITY

SILICONVALLEYGARAGE

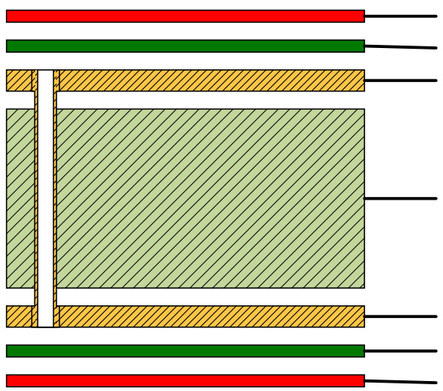
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

LAYER STACK

Layer Stack Legend



Material	Layer	Thickness	Dielectric Material	Type	Gerber	Dk	Weight	Constructions	Df	Resin
	Top Overlay			Legend	GTO					
Surface Material	Top Solder	0.010mm(0.400mil)	Solder Resist	Solder Mask	GTS	3.5				
Copper	**Top Layer**	**0.036mm(1.400mil)**		**Signal**	**GTL**		**1oz**			
		1.520mm(59.843mil)	*FR-4*	*Dielectric*		*4.8*				
Copper	**Bottom Layer**	**0.036mm(1.400mil)**		**Signal**	**GBL**		**1oz**			
Surface Material	Bottom Solder	0.010mm(0.400mil)	Solder Resist	Solder Mask	GBS	3.5				
	Bottom Overlay			Legend	GBO					

Total thickness: 1.611mm(63.443mil)

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Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

DRILL LEGEND

Drill Table

Symbol	Count	Hole Size	Plated	Hole Type	Drill Layer Pair	Via / Pad	Pad Shape	Description	Hole Tolerance	Via Type	Via Feature
◇	177	0.500mm(19.685mil)	Plated	Round	Top Layer - Bottom Layer	Via				Type 1B	Tenting Both
✡	4	0.920mm(36.221mil)	Plated	Round	Top Layer - Bottom Layer	Pad	(Mixed)				
□	408	1.000mm(39.370mil)	Plated	(Mixed)	Top Layer - Bottom Layer	Pad	(Mixed)				
⊠	3	1.100mm(43.307mil)	Plated	Round	Top Layer - Bottom Layer	Pad	Rounded				
▽	2	2.300mm(90.551mil)	Non-Plated	Round	Top Layer - Bottom Layer	Pad	Rounded				
○	2	2.300mm(90.551mil)	Plated	Round	Top Layer - Bottom Layer	Pad	Rounded				
⊠	2	2.600mm(102.362mil)	Plated	Round	Top Layer - Bottom Layer	Pad	Rounded				
	598 Total										

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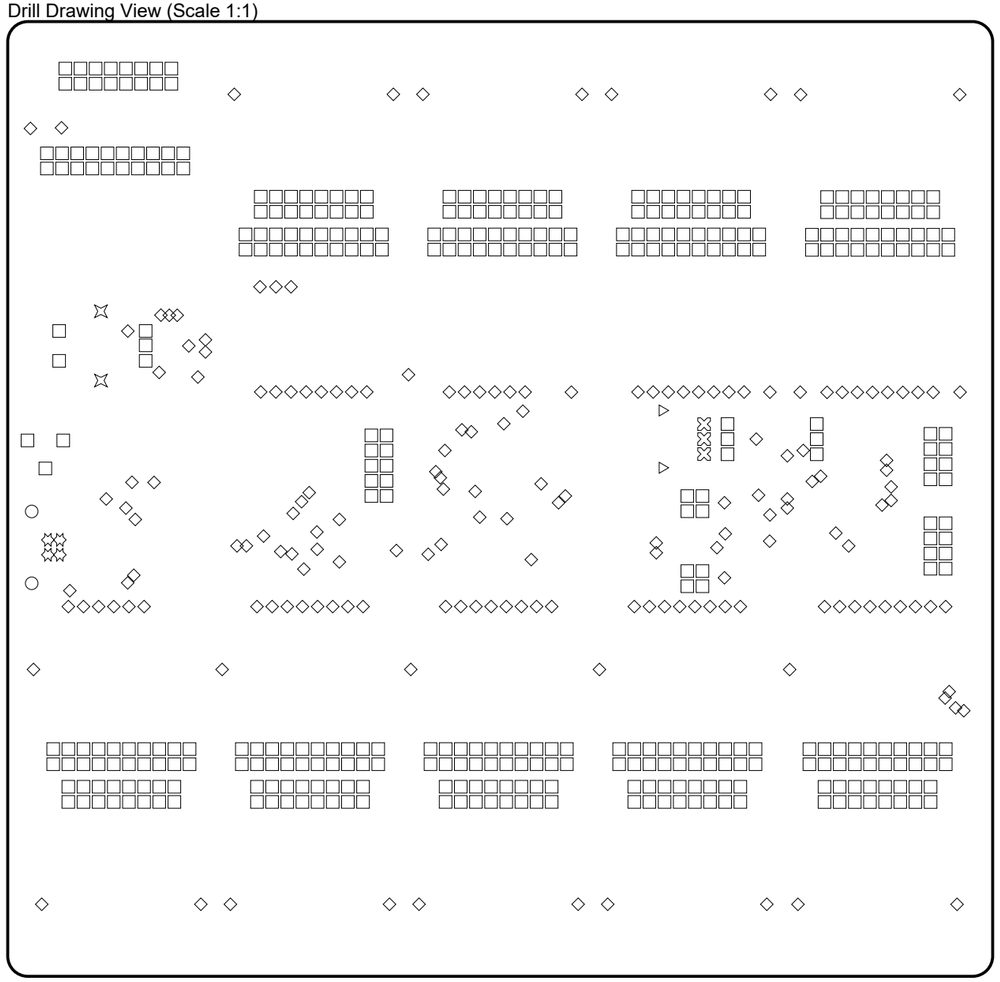
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

DRILL DRAWING

Drill Drawing View (Scale 1:1)



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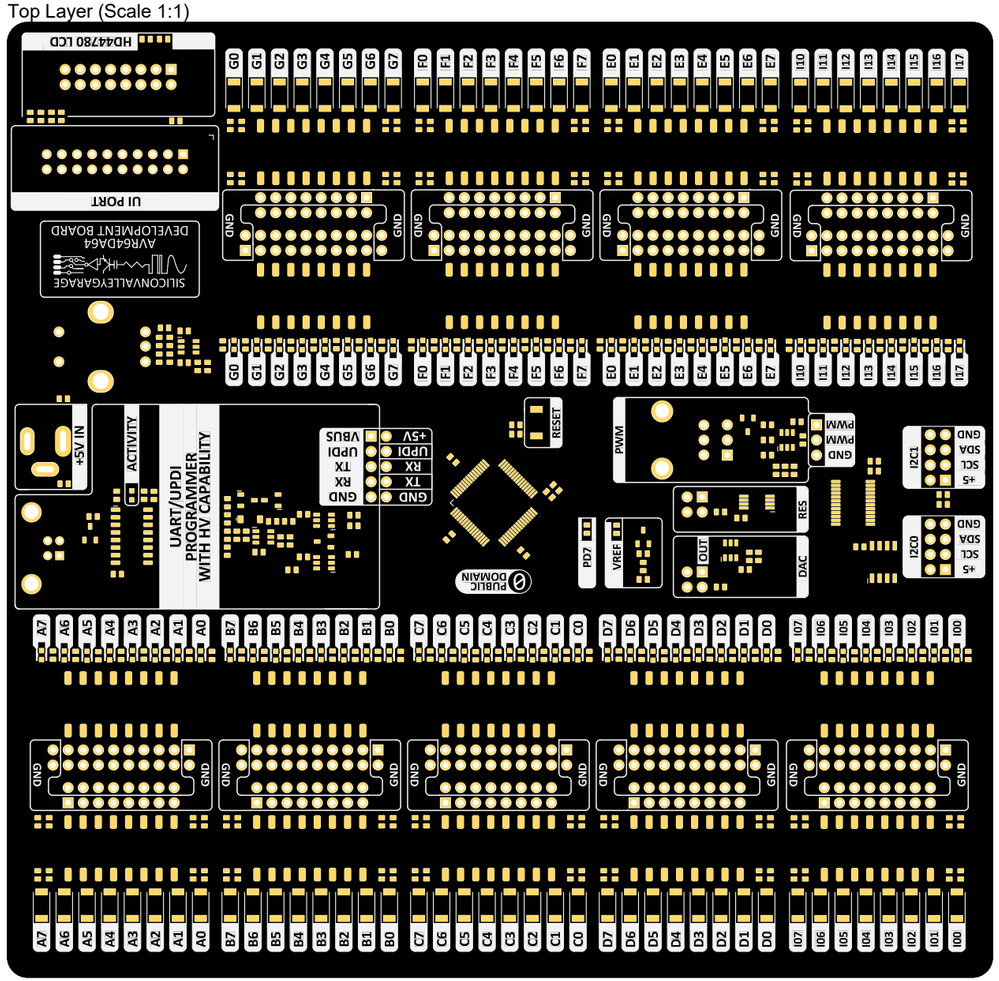
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

COMPOSITE VIEW FRONT

Top Layer (Scale 1:1)



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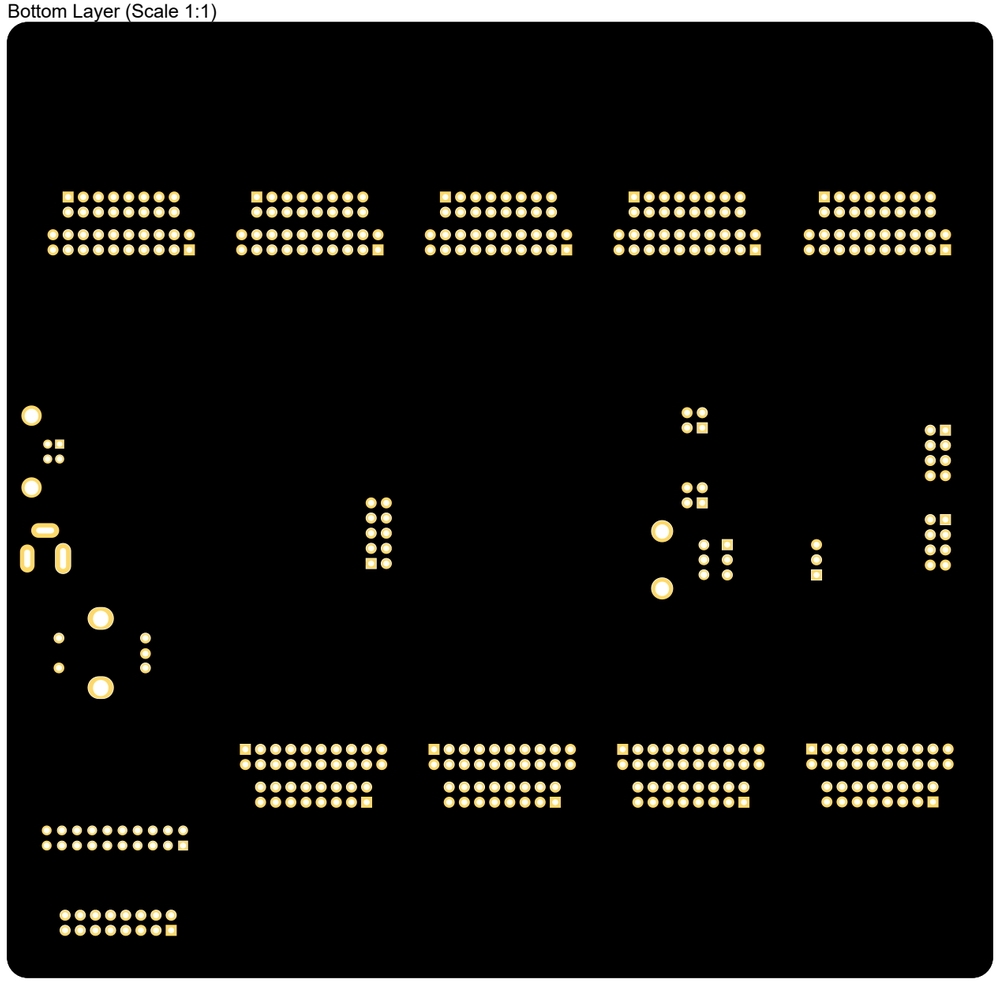
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

COMPOSITE VIEW BACK

Bottom Layer (Scale 1:1)



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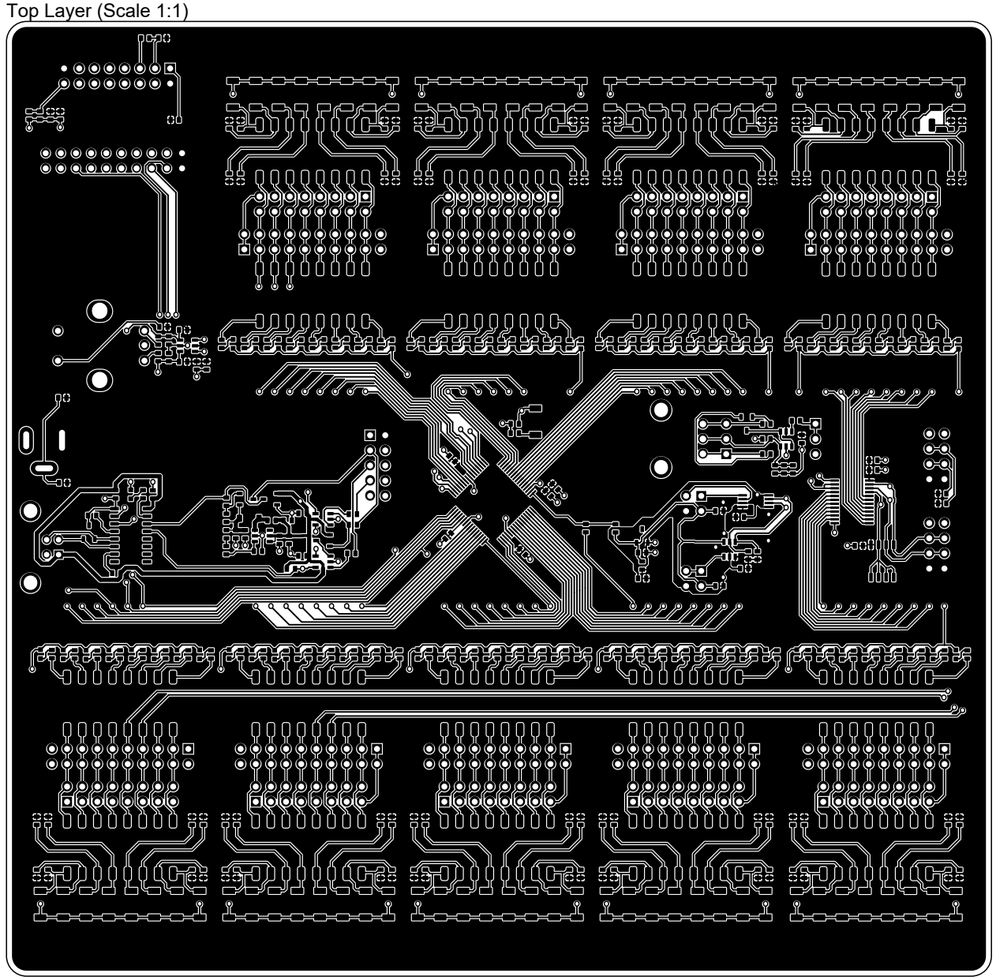
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

LAYER VIEW : TOP LAYER

Top Layer (Scale 1:1)



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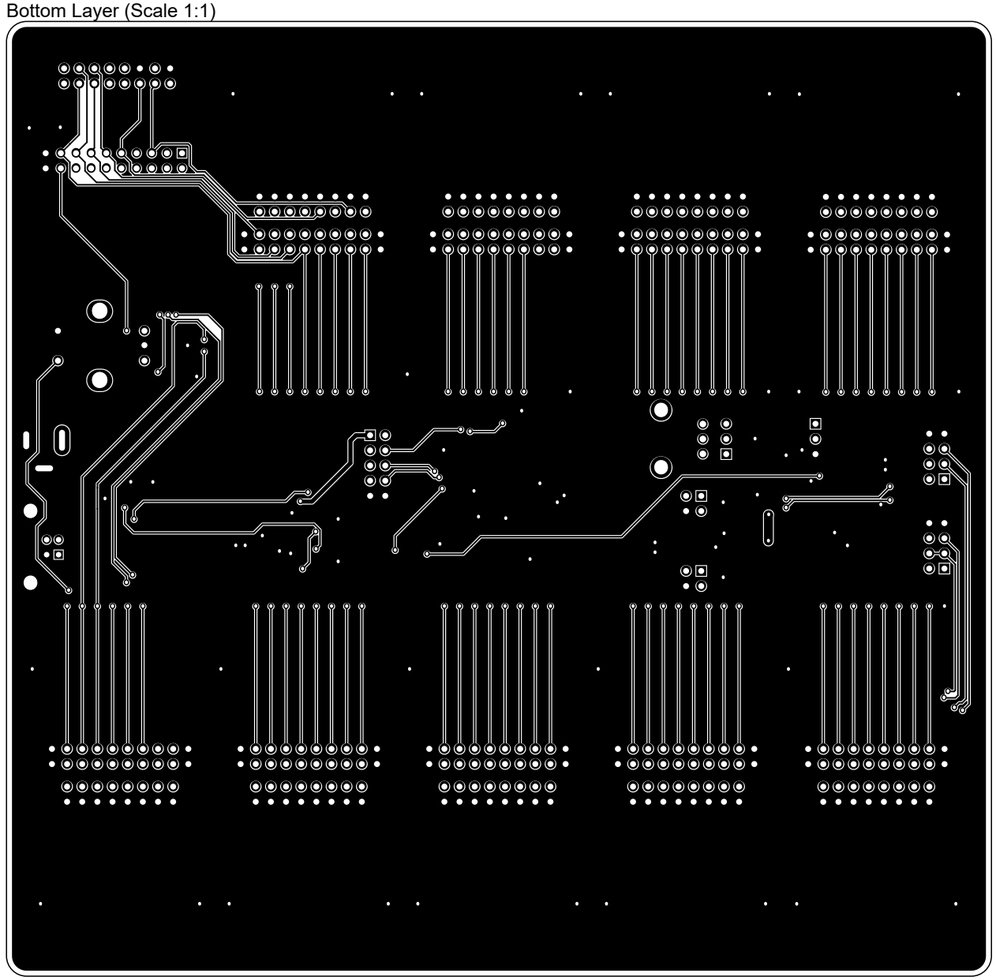
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

LAYER VIEW : BOTTOM LAYER

Bottom Layer (Scale 1:1)



SILICONVALLEYGARAGE

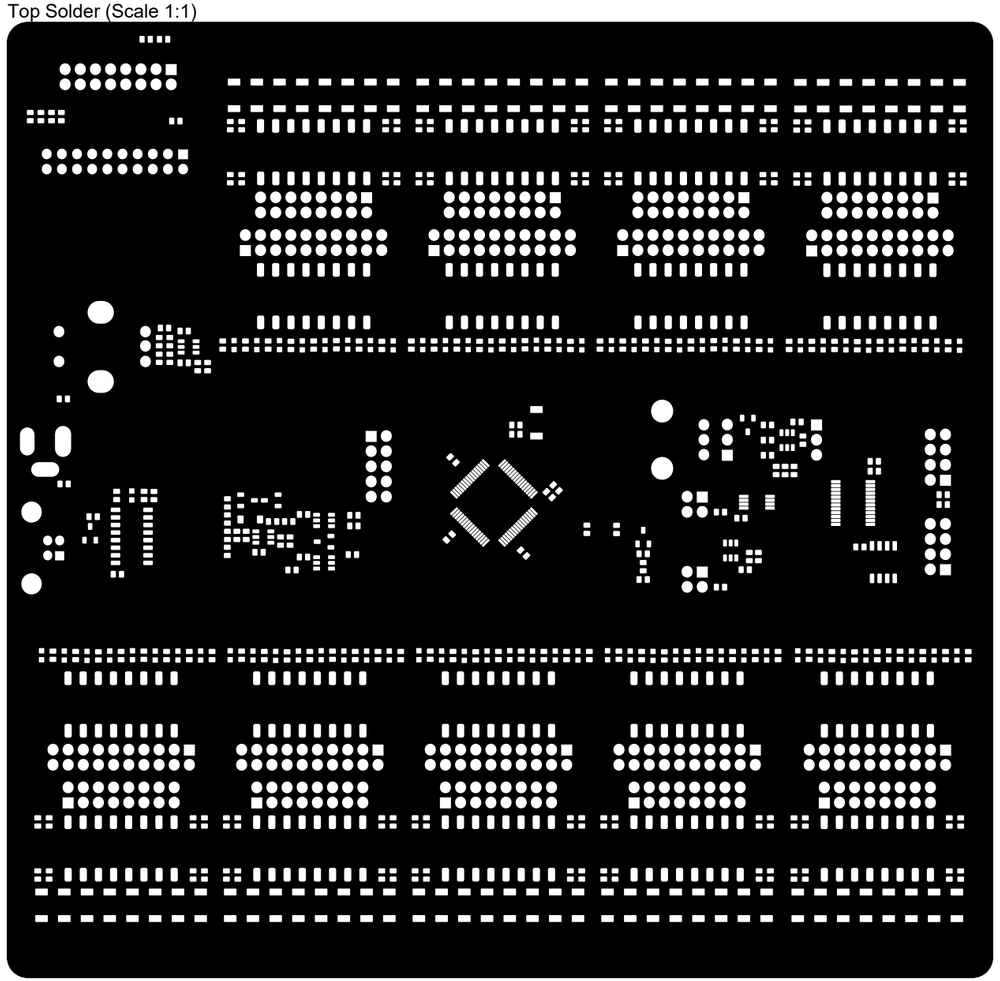
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

LAYER VIEW : TOP SOLDER MASK

Top Solder (Scale 1:1)



SILICONVALLEYGARAGE

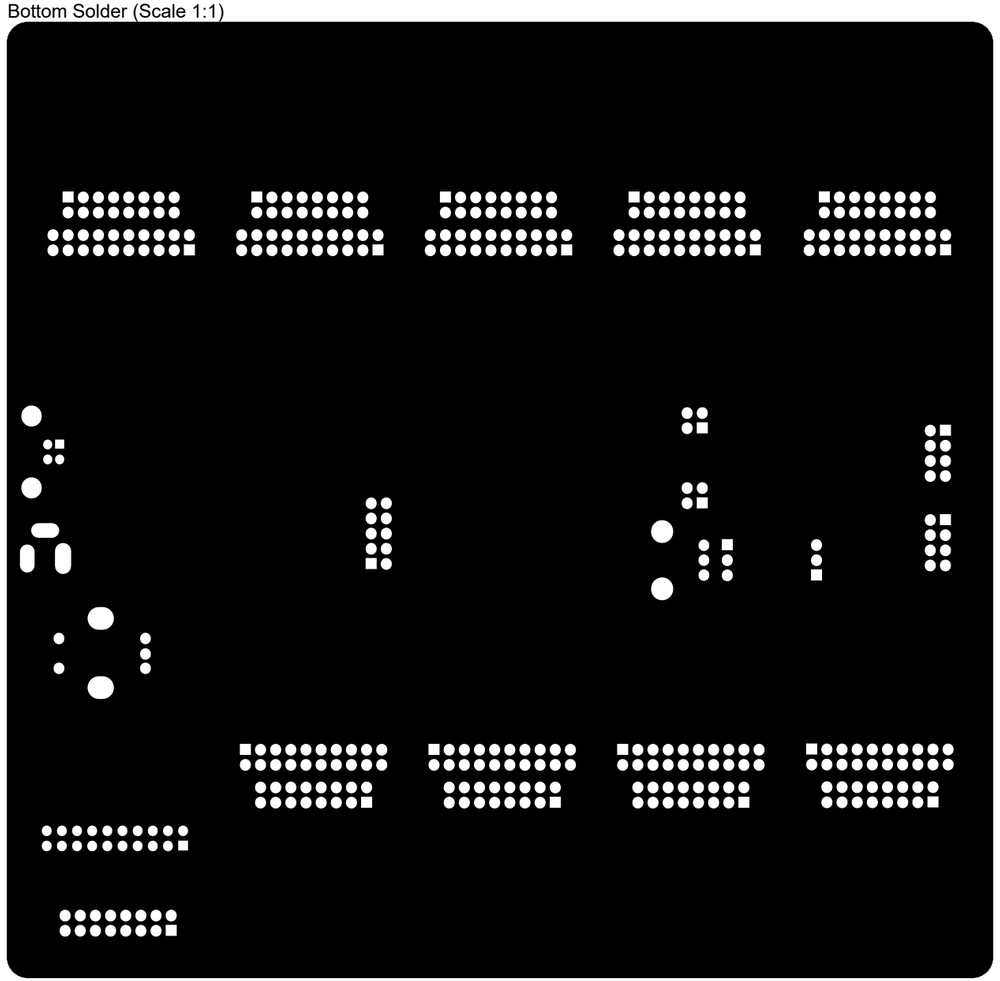
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

LAYER VIEW : BOTTOM SOLDER MASK

Bottom Solder (Scale 1:1)



SILICONVALLEYGARAGE

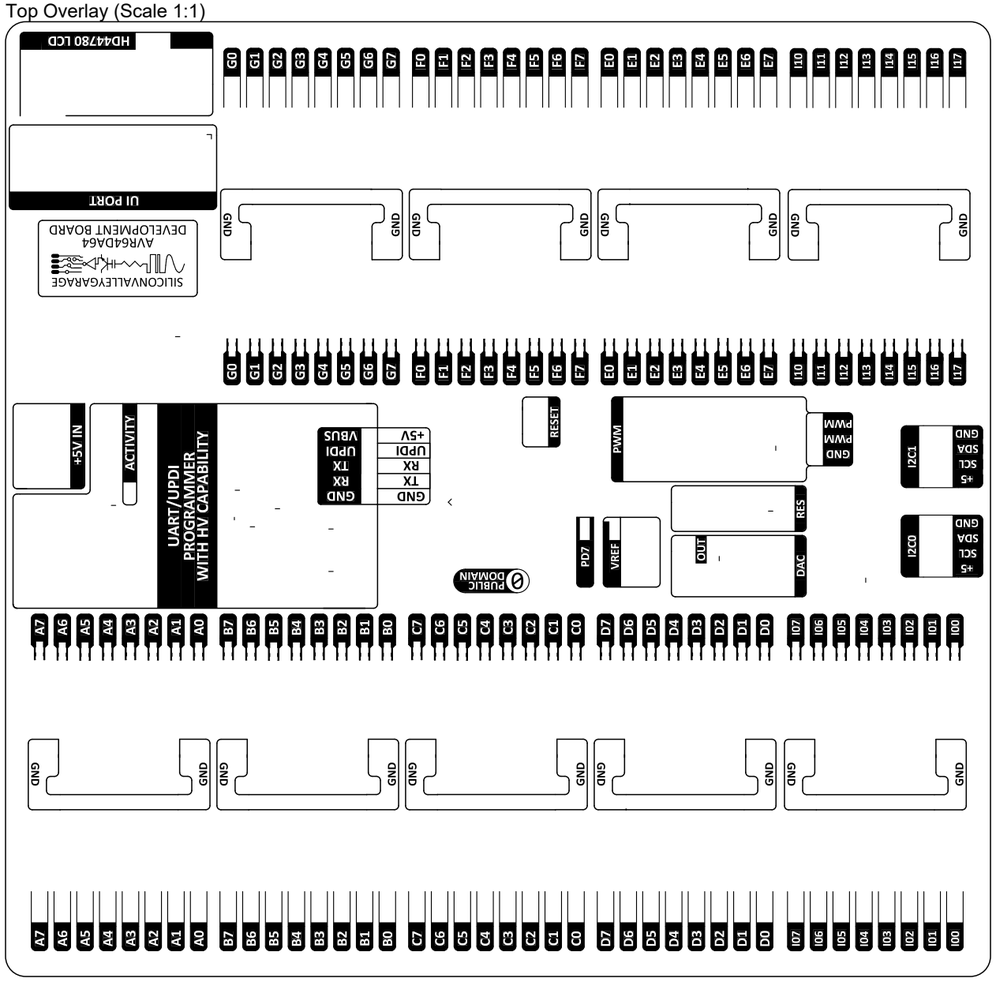
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

LAYER VIEW : TOP SILKSCREEN (LEGEND)

Top Overlay (Scale 1:1)



SILICONVALLEYGARAGE

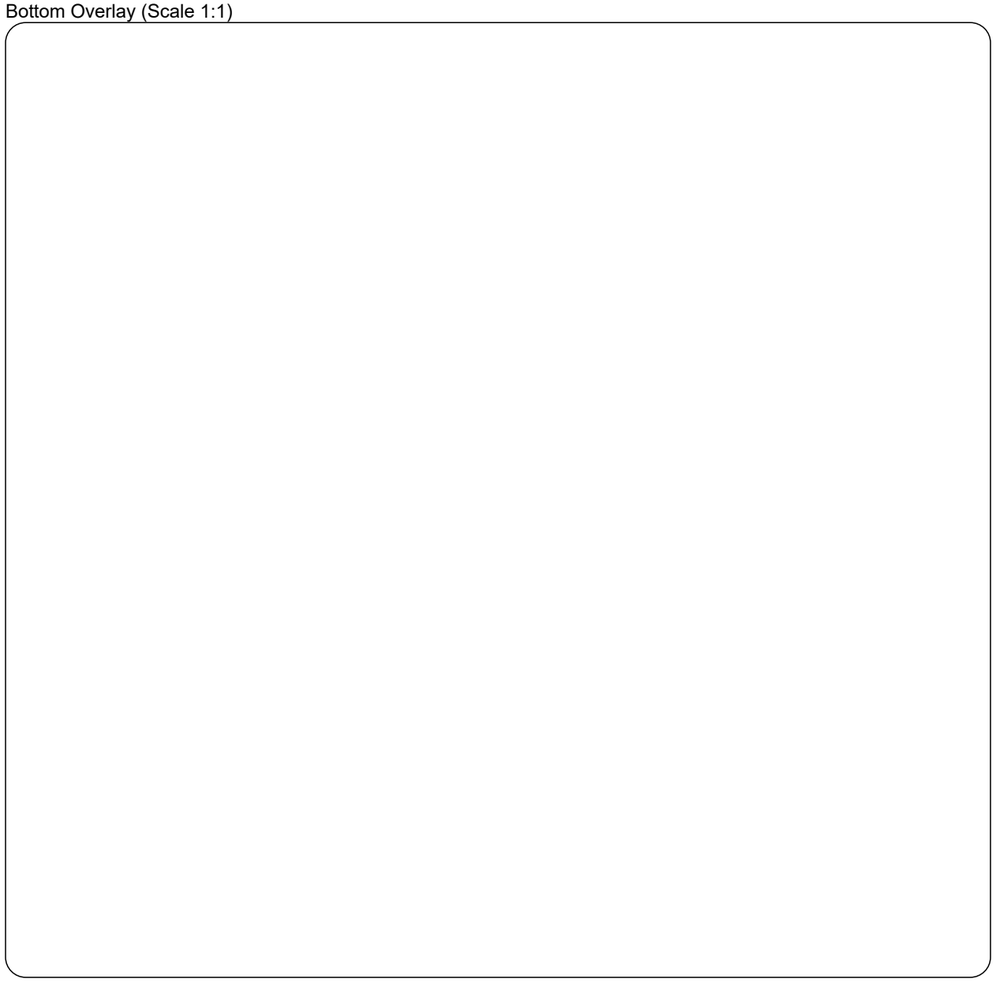
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

LAYER VIEW : BOTTOM SILKSCREEN (LEGEND)

Bottom Overlay (Scale 1:1)



SILICONVALLEYGARAGE

Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

FABRICATION DRAWING

GENERAL

Unless otherwise specified the following rules apply:

1. DO NOT DEVIATE FROM ARTWORK OR BOM WITHOUT PRIOR AUTHORIZATION.
2. ASSEMBLE AND INSPECT PER IPC-610 CLASS 2

Bill of Materials and Material Handling

3. THE BOM CONTAINED IN THIS DOCUMENT IS AS-BUILT. NON-INSTALLED PARTS HAVE BEEN REMOVED. ADDITIONAL BOM FORMATS ARE AVAILABLE IN THE PROJECT FILES
4. ANY PART SUBSTITUTIONS MUST BE APPROVED IN WRITING BEFORE ASSEMBLY
5. ALL MATERIALS MUST BE PROCURED FROM MANUFACTURER AUTHORIZED DISTRIBUTORS OR THE ORIGINAL MANUFACTURER
6. ALL COMPONENTS AND BOARDS TO BE HANDLED AND STORED ACCORDING TO IPC GUIDELINES
7. ESD CONTROL PER IPC RULES

Soldering

8. SOLDERING TO BE DONE USING SN37PB63 ALLOY USING ALLOY MANUFACTURER RECOMMENDED NO-CLEAN FLUX
9. BGA COMPONENTS WITH LEAD-FREE CONNECTIONS NEED TO BE REBALLED WITH SN63PB37. MIXING OF ALLOYS IS NOT PERMITTED.
10. SOLDERING PREFERRABLY TO BE DONE USING NITROGEN ATMOSPHERE
11. SURPLUS COMPONENTS TO VACUUM SEALED WITH DESSICANT IN ANTISTATIC BAGS
12. INCOMING MATERIAL (BOARDS AND COMPONENTS) NEEDS TO BE INSPECTED FOR HUMIDITY AND BAKED IF NEEDED PRIOR TO USE.
13. MANUAL REWORK / TOUCHUP TO BE DONE USING SAME ALLOY AND APPROPRIATE FLUX. FLUX MUST BE REMOVED.

SILICONVALLEYGARAGE

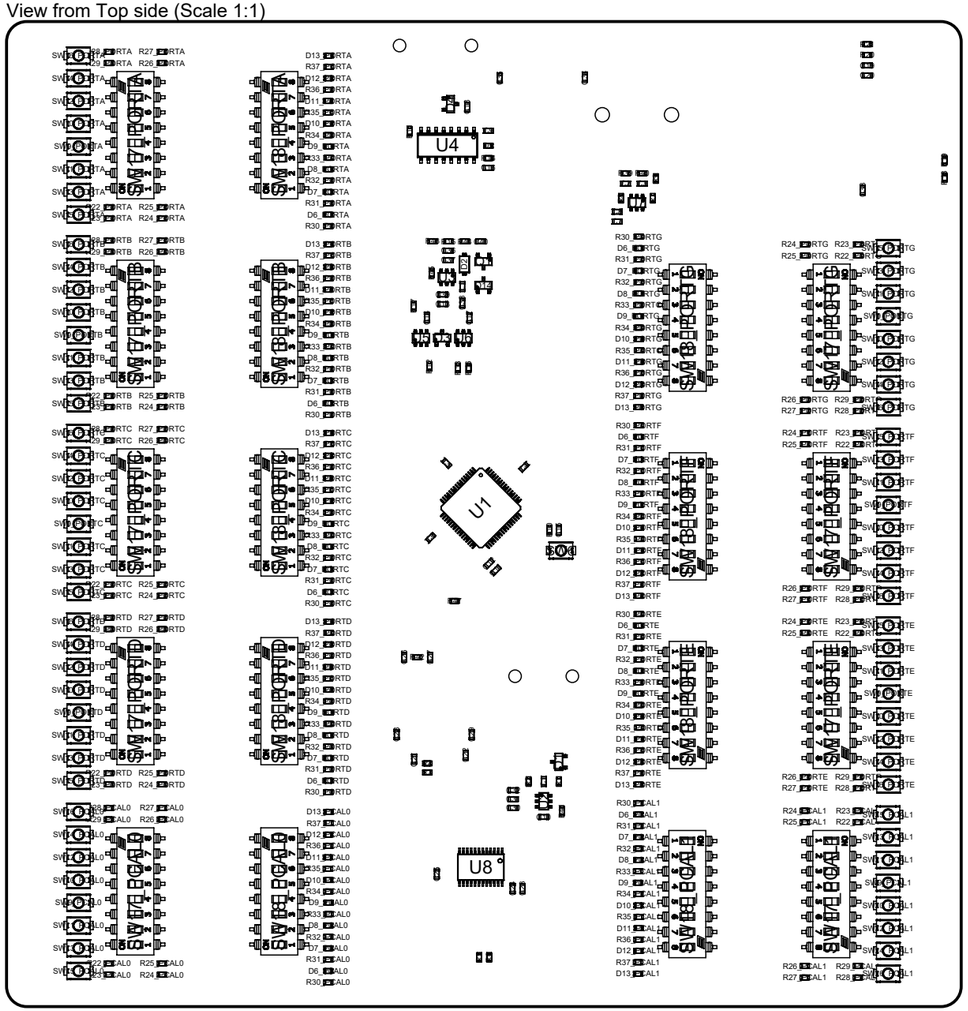
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

ASSEMBLY DRAWING

2D VIEW

View from Top side (Scale 1:1)



SILICONVALLEYGARAGE

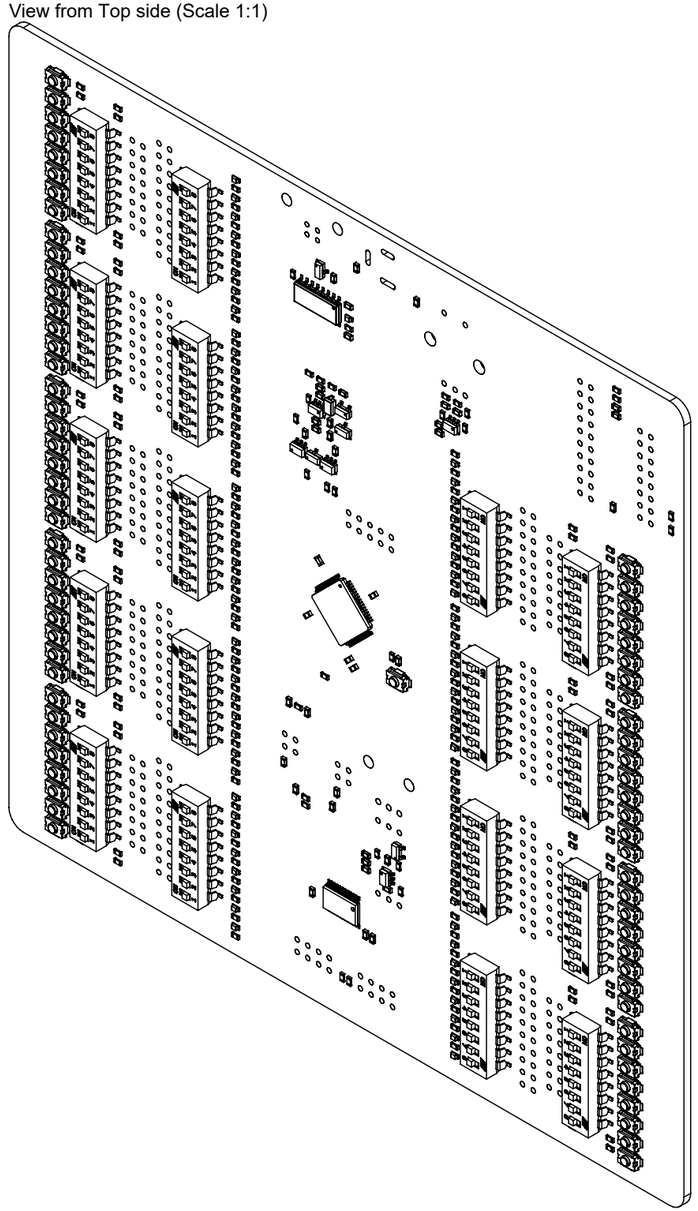
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

ASSEMBLY DRAWING

3D VIEW

View from Top side (Scale 1:1)



SILICONVALLEYGARAGE

Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

ASSEMBLY DRAWING

Bill Of Materials

Quantity	Designator	Description	LCSC
18	C1, C4, C7, C11, C16, C19, C23, C26, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39	CAPACITOR,CERAMIC,4u7,16V,X5R,0603	C19666
22	C2, C3, C5, C6, C8, C9, C10, C12, C13, C14, C15, C17, C18, C20, C21, C22, C24, C25, C27, C28, C29, C40	CAPACITOR,CERAMIC,100nF,50V,X7R,0603	C14663
3	D1, D3, D14	DIODE,75V,215mA,SOT23,LOW LEAKAGE	C2500
1	D2	DIODE,SCHOTTKY,40V,1,B5819,SOD123	C8598
1	D4	DIODE,TVS,DUAL,NIDIRETIONAL,USB,PESD2USB5UX-TR,SOT23	C3709087
73	D5, D6_PCAL0, D6_PCAL1, D6_PORTA, D6_PORTB, D6_PORTC, D6_PORTD, D6_PORTE, D6_PORTF, D6_PORTG, D7_PCAL0, D7_PCAL1, D7_PORTA, D7_PORTB, D7_PORTC, D7_PORTD, D7_PORTE, D7_PORTF, D7_PORTG, D8_PCAL0, D8_PCAL1, D8_PORTA, D8_PORTB, D8_PORTC, D8_PORTD, D8_PORTE, D8_PORTF, D8_PORTG, D9_PCAL0, D9_PCAL1, D9_PORTA, D9_PORTB, D9_PORTC, D9_PORTD, D9_PORTE, D9_PORTF, D9_PORTG, D10_PCAL0, D10_PCAL1, D10_PORTA, D10_PORTB, D10_PORTC, D10_PORTD, D10_PORTE, D10_PORTF, D10_PORTG, D11_PCAL0, D11_PCAL1, D11_PORTA, D11_PORTB, D11_PORTC, D11_PORTD, D11_PORTE, D11_PORTF, D11_PORTG, D12_PCAL0, D12_PCAL1, D12_PORTA, D12_PORTB, D12_PORTC, D12_PORTD, D12_PORTE, D12_PORTF, D12_PORTG, D13_PCAL0, D13_PCAL1, D13_PORTA, D13_PORTB, D13_PORTC, D13_PORTD, D13_PORTE, D13_PORTF, D13_PORTG	LED,SMD,WHITE,42mCd,0603	C2290
1	L1	IND,4u7H,0.6A,0603, LLQM18PN4R7MFRL	C114862
1	Q1	XSTR,PMOS,30V,4A,AO3401,SOT23	C15127
8	R1, R2, R11, R13, R14, R42, R43, R45	RESISTOR,1K,1%,100mW,0603 (1608)	C21190
79	R3, R4, R5, R6, R7, R8, R9, R30_PCAL0, R30_PCAL1, R30_PORTA, R30_PORTB, R30_PORTC, R30_PORTD, R30_PORTE, R30_PORTF, R30_PORTG, R31_PCAL0, R31_PCAL1, R31_PORTA, R31_PORTB, R31_PORTC, R31_PORTD, R31_PORTE, R31_PORTF, R31_PORTG, R32_PCAL0, R32_PCAL1, R32_PORTA, R32_PORTB, R32_PORTC, R32_PORTD, R32_PORTE, R32_PORTF, R32_PORTG, R33_PCAL0, R33_PCAL1, R33_PORTA, R33_PORTB, R33_PORTC, R33_PORTD, R33_PORTE, R33_PORTF, R33_PORTG, R34_PCAL0, R34_PCAL1, R34_PORTA, R34_PORTB, R34_PORTC, R34_PORTD, R34_PORTE, R34_PORTF, R34_PORTG, R35_PCAL0, R35_PCAL1, R35_PORTA, R35_PORTB, R35_PORTC, R35_PORTD, R35_PORTE, R35_PORTF, R35_PORTG, R36_PCAL0, R36_PCAL1, R36_PORTA, R36_PORTB, R36_PORTC, R36_PORTD, R36_PORTE, R36_PORTF, R36_PORTG, R37_PCAL0, R37_PCAL1, R37_PORTA, R37_PORTB, R37_PORTC, R37_PORTD, R37_PORTE, R37_PORTF, R37_PORTG	RESISTOR,4K7,1%,100mW,0603 (1608)	C23162
10	R10, R12, R16, R19, R20, R21, R39, R40, R41, R47	RESISTOR,470R,1%,100mW,0603 (1608)	C23179
1	R15	RESISTOR,18K,1%,100mW,0603 (1608)	C25810

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Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

ASSEMBLY DRAWING

Bill Of Materials

Quantity	Designator	Description	LCSC
75	R17, R18, R22_PCAL0, R22_PCAL1, R22_PORTA, R22_PORTB, R22_PORTC, R22_PORTD, R22_PORTE, R22_PORTF, R22_PORTG, R23_PCAL0, R23_PCAL1, R23_PORTA, R23_PORTB, R23_PORTC, R23_PORTD, R23_PORTE, R23_PORTF, R23_PORTG, R24_PCAL0, R24_PCAL1, R24_PORTA, R24_PORTB, R24_PORTC, R24_PORTD, R24_PORTE, R24_PORTF, R24_PORTG, R25_PCAL0, R25_PCAL1, R25_PORTA, R25_PORTB, R25_PORTC, R25_PORTD, R25_PORTE, R25_PORTF, R25_PORTG, R26_PCAL0, R26_PCAL1, R26_PORTA, R26_PORTB, R26_PORTC, R26_PORTD, R26_PORTE, R26_PORTF, R26_PORTG, R27_PCAL0, R27_PCAL1, R27_PORTA, R27_PORTB, R27_PORTC, R27_PORTD, R27_PORTE, R27_PORTF, R27_PORTG, R28_PCAL0, R28_PCAL1, R28_PORTA, R28_PORTB, R28_PORTC, R28_PORTD, R28_PORTE, R28_PORTF, R28_PORTG, R29_PCAL0, R29_PCAL1, R29_PORTA, R29_PORTB, R29_PORTC, R29_PORTD, R29_PORTE, R29_PORTF, R29_PORTG, R44	RESISTOR,10K,1%,100mW,0603 (1608)	C25804
73	SW6, SW9_PCAL0, SW9_PCAL1, SW9_PORTA, SW9_PORTB, SW9_PORTC, SW9_PORTD, SW9_PORTE, SW9_PORTF, SW9_PORTG, SW10_PCAL0, SW10_PCAL1, SW10_PORTA, SW10_PORTB, SW10_PORTC, SW10_PORTD, SW10_PORTE, SW10_PORTF, SW10_PORTG, SW11_PCAL0, SW11_PCAL1, SW11_PORTA, SW11_PORTB, SW11_PORTC, SW11_PORTD, SW11_PORTE, SW11_PORTF, SW11_PORTG, SW12_PCAL0, SW12_PCAL1, SW12_PORTA, SW12_PORTB, SW12_PORTC, SW12_PORTD, SW12_PORTE, SW12_PORTF, SW12_PORTG, SW13_PCAL0, SW13_PCAL1, SW13_PORTA, SW13_PORTB, SW13_PORTC, SW13_PORTD, SW13_PORTE, SW13_PORTF, SW13_PORTG, SW14_PCAL0, SW14_PCAL1, SW14_PORTA, SW14_PORTB, SW14_PORTC, SW14_PORTD, SW14_PORTE, SW14_PORTF, SW14_PORTG, SW15_PCAL0, SW15_PCAL1, SW15_PORTA, SW15_PORTB, SW15_PORTC, SW15_PORTD, SW15_PORTE, SW15_PORTF, SW15_PORTG, SW16_PCAL0, SW16_PCAL1, SW16_PORTA, SW16_PORTB, SW16_PORTC, SW16_PORTD, SW16_PORTE, SW16_PORTF, SW16_PORTG	SWITCH,TACT,SMD,2PIN,SMT,TOP ACTUATOR	C720477
18	SW17_PCAL0, SW17_PCAL1, SW17_PORTA, SW17_PORTB, SW17_PORTC, SW17_PORTD, SW17_PORTE, SW17_PORTF, SW17_PORTG, SW18_PCAL0, SW18_PCAL1, SW18_PORTA, SW18_PORTB, SW18_PORTC, SW18_PORTD, SW18_PORTE, SW18_PORTF, SW18_PORTG	SWITCH,DIP,NOX8,SMD,2.54	C319032
1	U1	IC,CPU,ATMEL,AVR64DA64,TQFP64	C5227841
2	U2, U7	IC,LOGIC,SINGLEGATE,DUAL SCHMITT-TRIGER,INVERTER,SOT23-6	C19829598
1	U3	IC,REG,BOOST,AEROSEMI,MT3608	C84817
1	U4	IC,XCVR,USB UART WITH XTAL AND EEPROM,WCH,CH340G-SO16	CH340B
2	U5, U6	IC,ANALOG,SPDT ANALOG SWITCH,SINGLEGATE,TI,SN74LVC1G3157DBVR,SOT23-6	C2673494
1	U8	I2C,16BIT AGILE I/O EXPANDER,INT,NEXPERIA,PCAL95555,TSSOP24	C2669740

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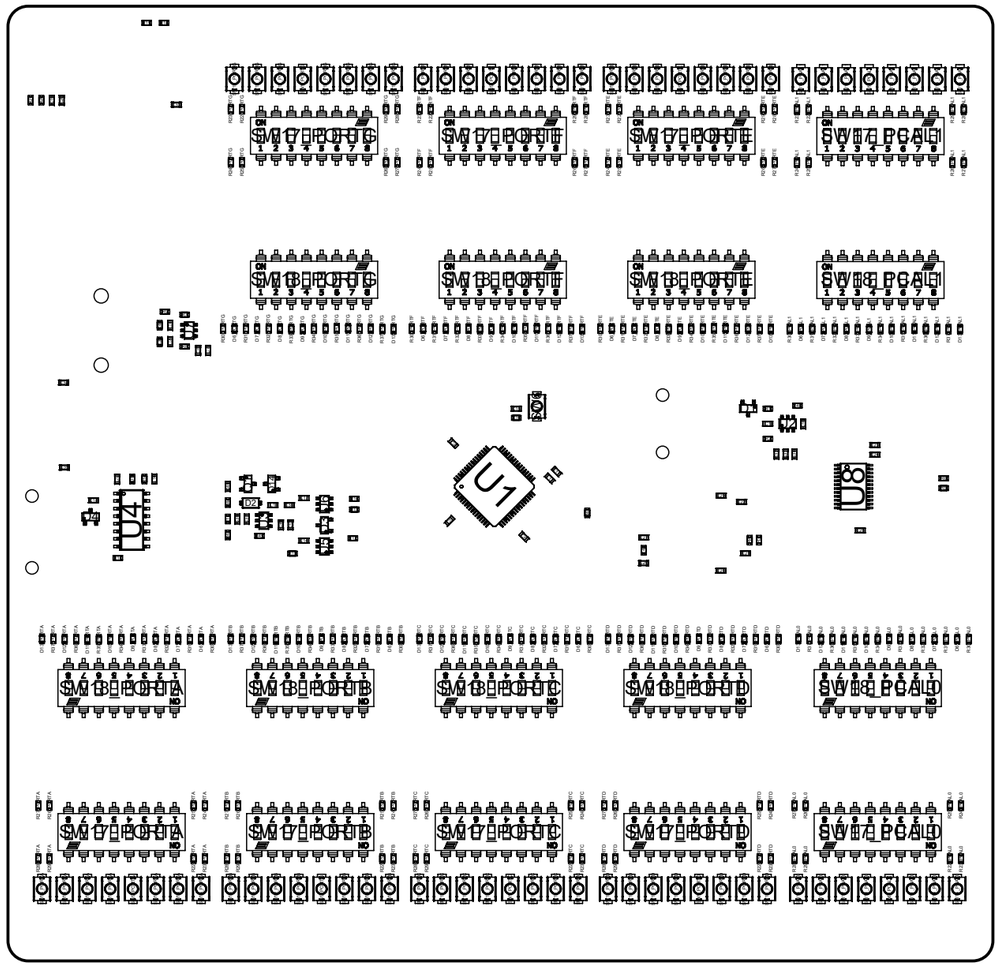
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

ASSEMBLY DRAWING

DESIGNATORS FRONT

View from Top side (Scale 1:1)



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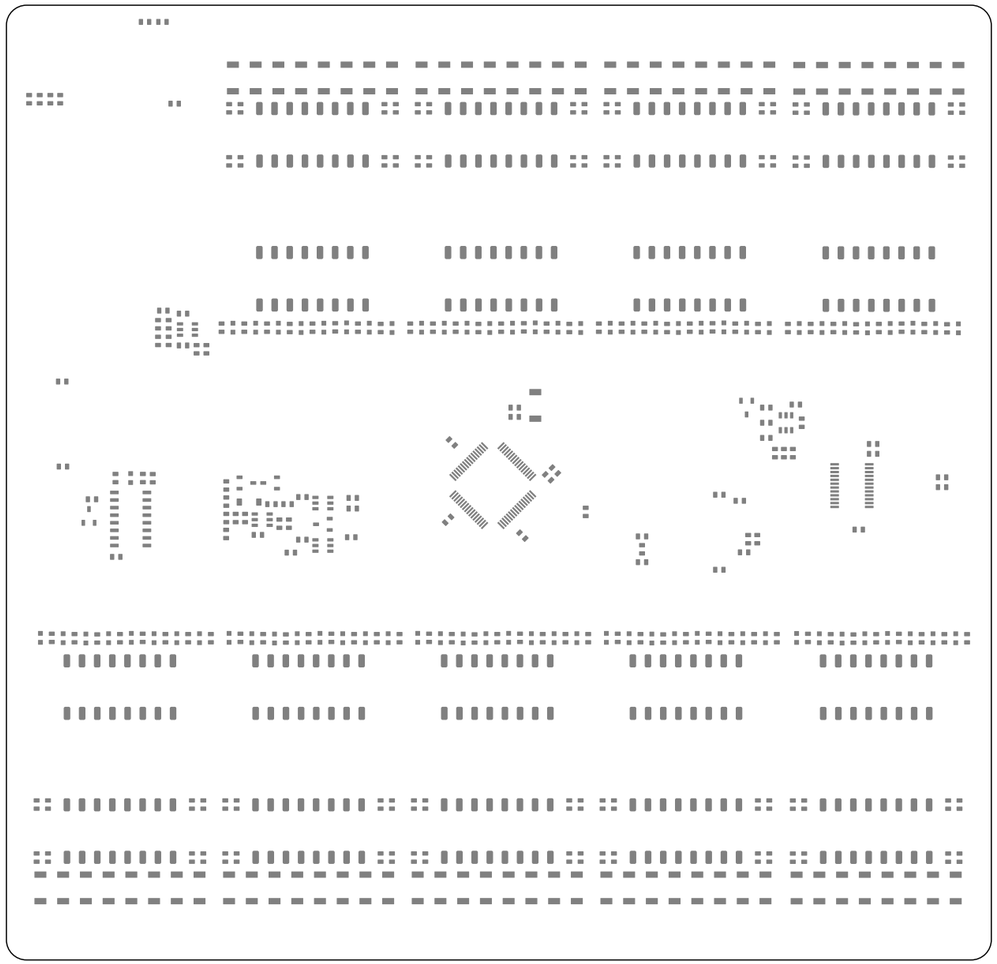
Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

ASSEMBLY DRAWING

PASTE MASK TOP

Top Paste (Scale 1:1)



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Project AVR64DA64-BREAKOUT.PrjPcb

Version: | Variant AVR64DA64-BREAKOUT-JLCPCB

ASSEMBLY DRAWING