


Title: 60V_Ind.SchDoc			
Desc:			
Size: Letter	Auth: *	Proj: 60V_Ind.PrtPcb	
Date: 2/7/2020	2:12:00 PM	Sheet * of *	www.uvmaero.org
File: C:\git\AERO_2019-2020\60V_IND\Altium\60V_Ind.SchDoc			

A

B

C

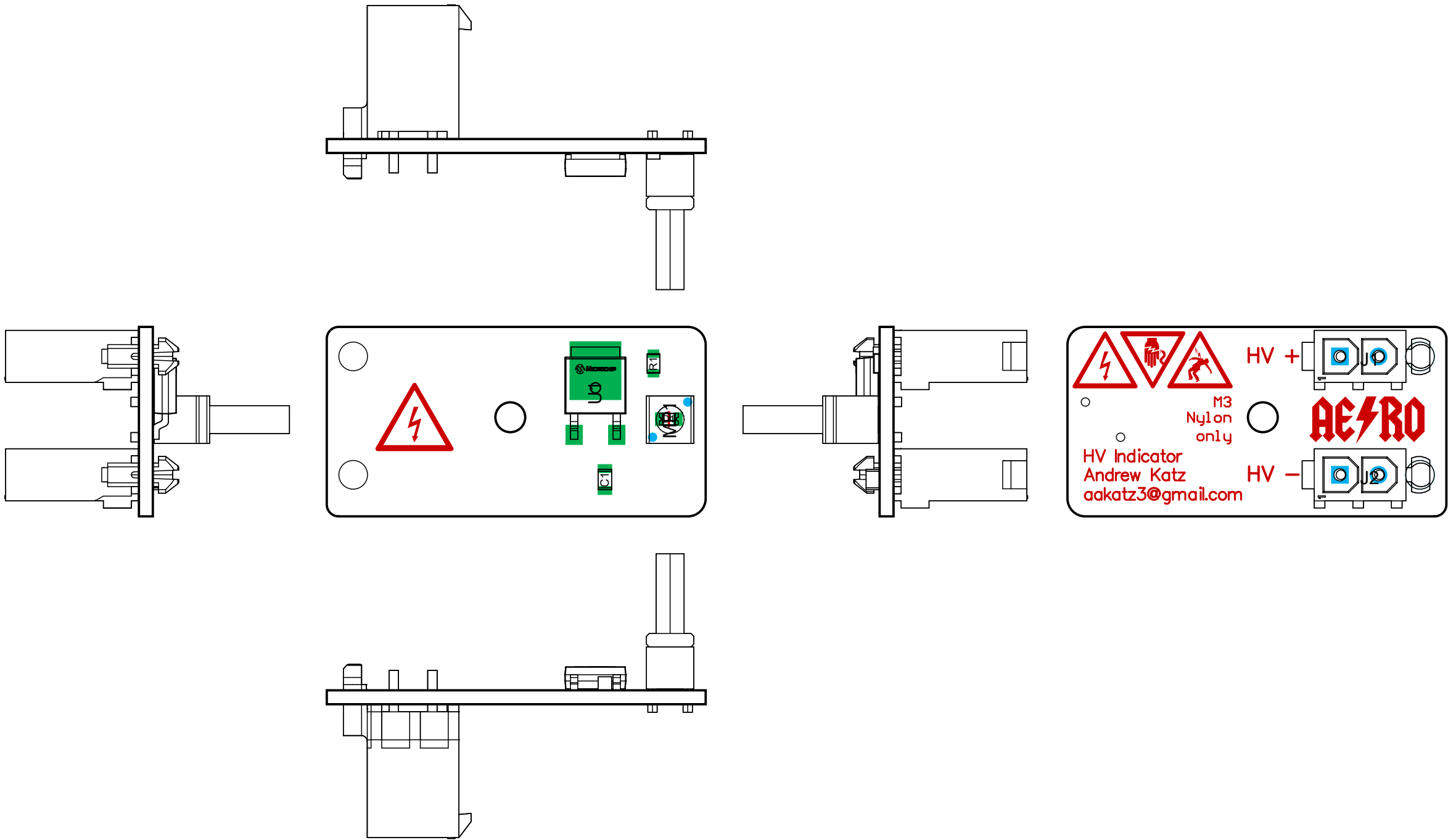
D

1

1

2

2



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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	UVM AERO		
		DIMENSIONS ARE IN INCHES		DRAWN	2/7/2020	60V Indicator		
		TOLERANCES:		CHECKED				
		FRACTIONAL±		ENG APPR.				
		ANGULAR: MACH± BEND ±		MFG APPR.				
		TWO PLACE DECIMAL ±		Q.A.		TITLE		
		THREE PLACE DECIMAL ±		COMMENTS:				
		INTERPRET GEOMETRIC TOLERANCING PER:				SIZE	DWG. NO.	
		MATERIAL						
		FINISH						
NEXT ASSY	USED ON							
APPLICATION		DO NOT SCALE DRAWING				SCALE: 1:1	WEIGHT:	SHEET 1 OF 1

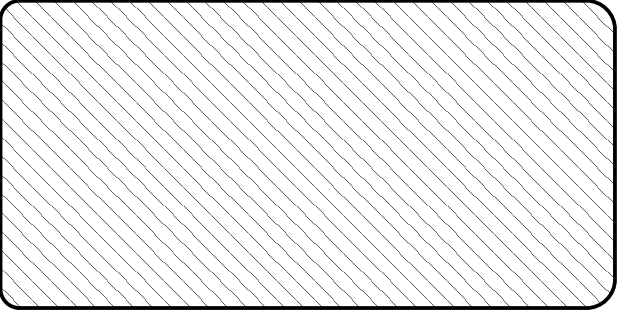
A

B

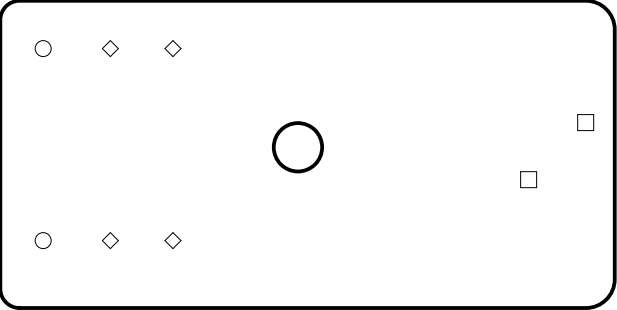
C

D

Region View (Scale 2:1)



Drill Drawing View (Scale 2:1)



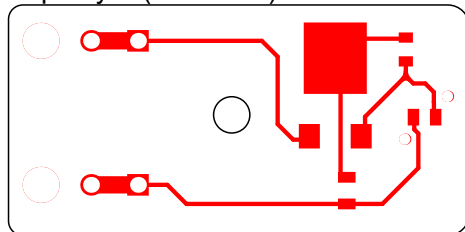
Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
□	2	39.37mil	Non-Plated	None
◇	4	55.00mil	Plated	None
○	2	125.00mil	Non-Plated	None
8 Total				

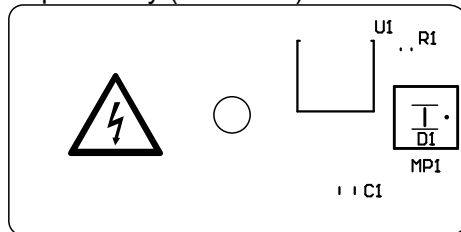
Layer Stack Legend

Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
	Surface Material	1.00mil(0mm)	SM-001	Solder Mask	GTS
PbSn	Top Surface Finish	0.79mil(0mm)		Surface Finish	
Cu	Top Layer	1.40mil(0mm)		Signal	GTL
Core		56.00mil(1mm)	FR-4	Dielectric	
Cu	Bottom Layer	1.40mil(0mm)		Signal	GBL
PbSn	Bottom Surface Finish	0.79mil(0mm)		Surface Finish	
Surface Material	Bottom Solder	1.00mil(0mm)	SM-001	Solder Mask	GBS
	Bottom Overlay			Legend	GBO
Total thickness: 62.37mil(2mm)					

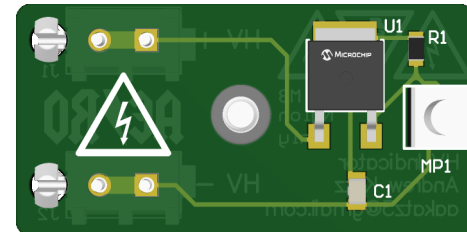
Top Layer (Scale 3:2)



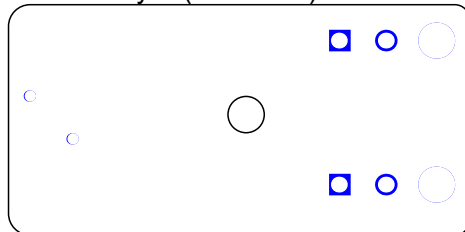
Top Overlay (Scale 3:2)



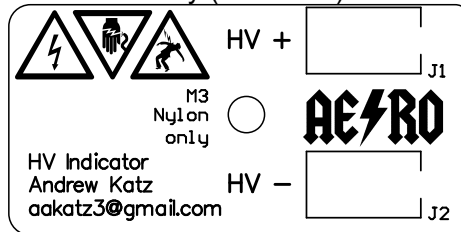
Realistic View



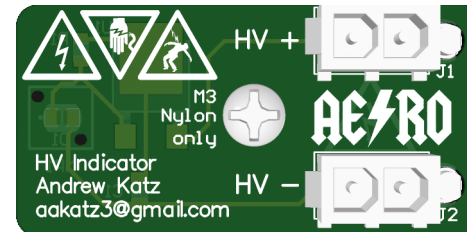
Bottom Layer (Scale 3:2)



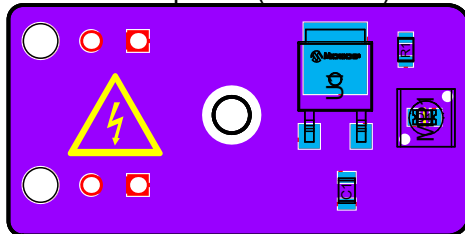
Bottom Overlay (Scale 3:2)



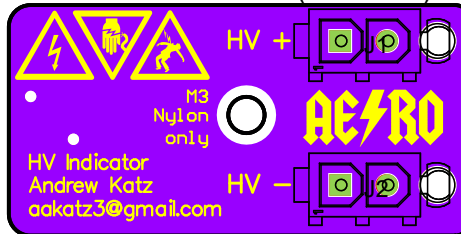
Realistic View

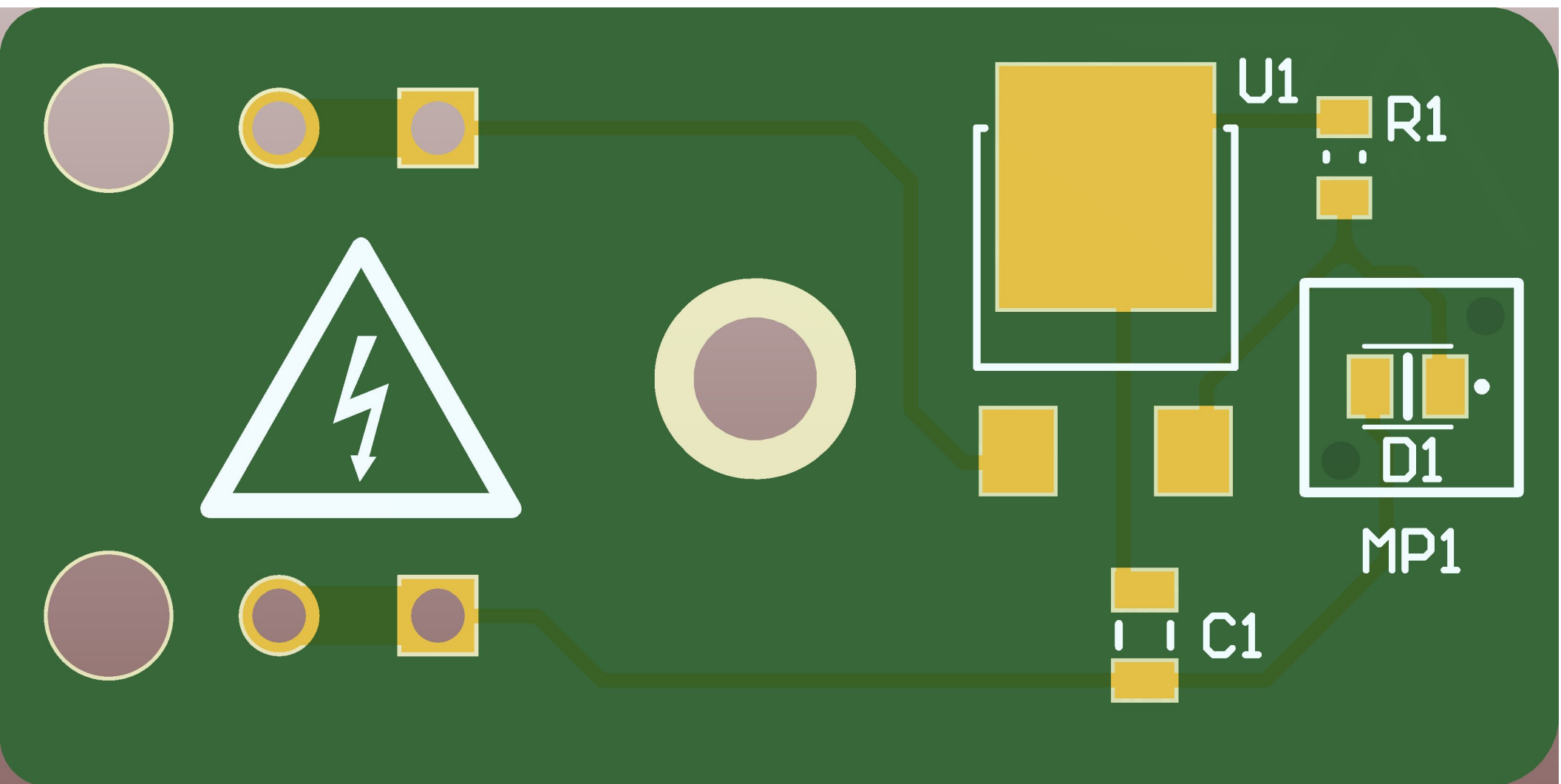


View from Top side (Scale 3:2)



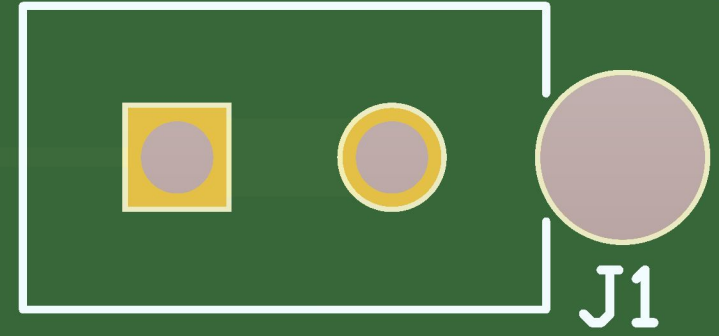
View from Bottom side (Scale 3:2)



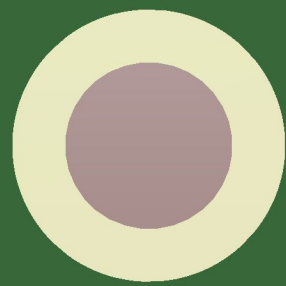




HV +



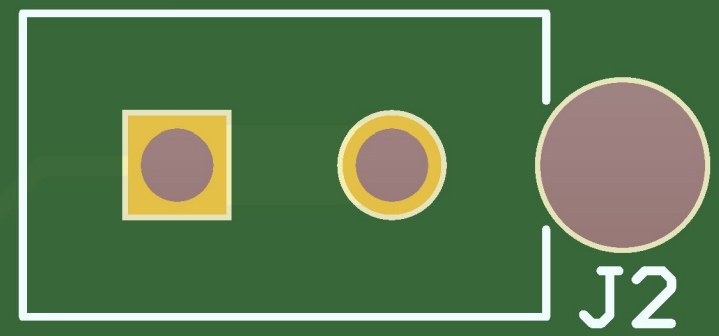
M3
Nylon
only



AE⚡RO

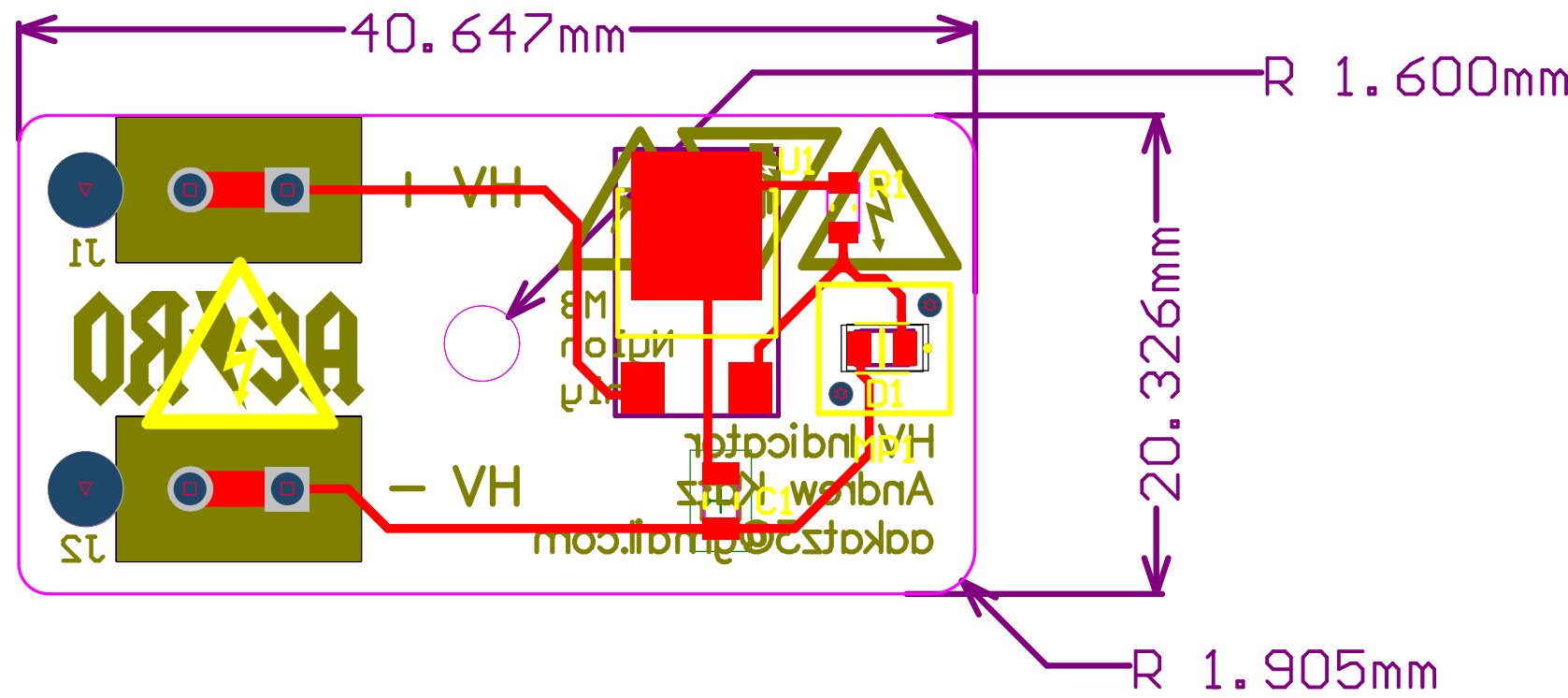
HV Indicator
Andrew Katz
aakatz3@gmail.com

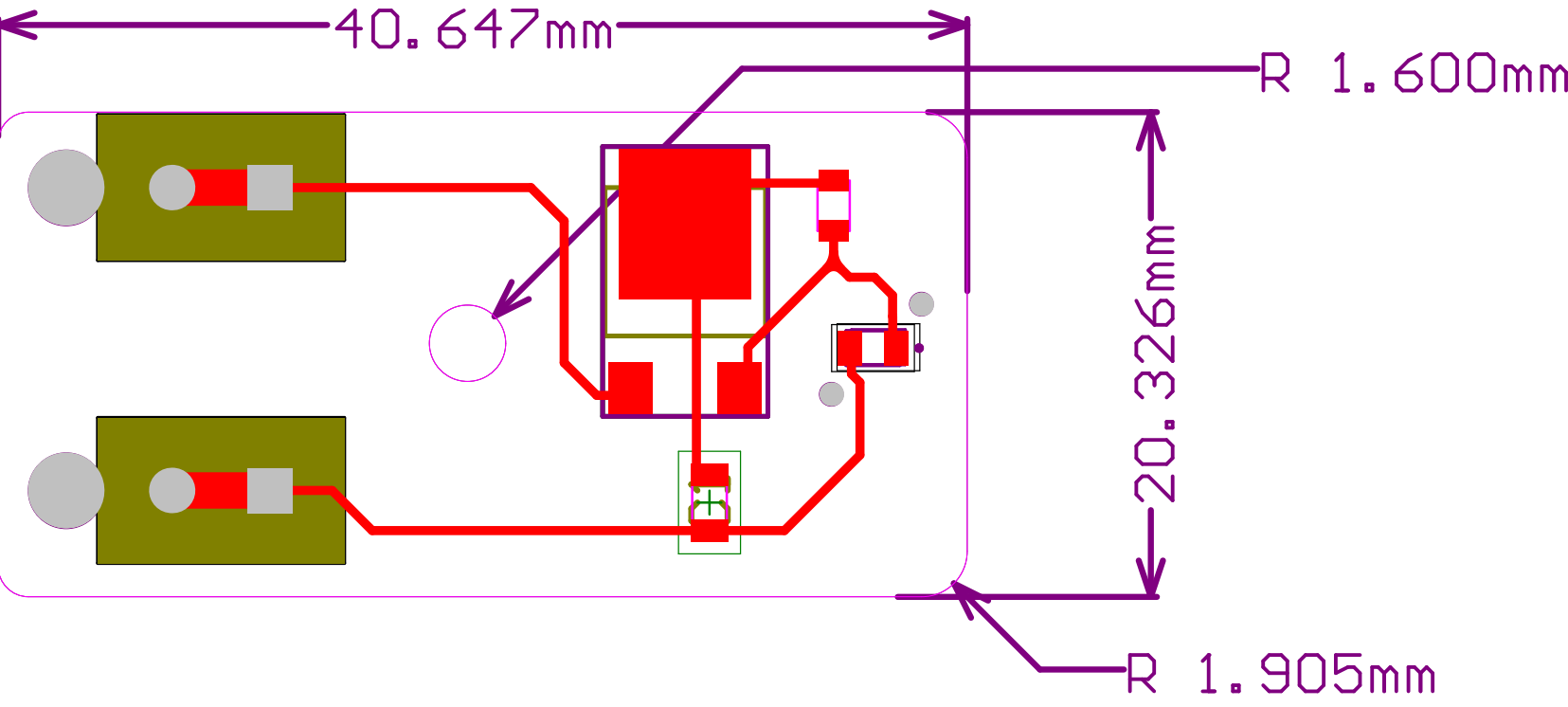
HV -



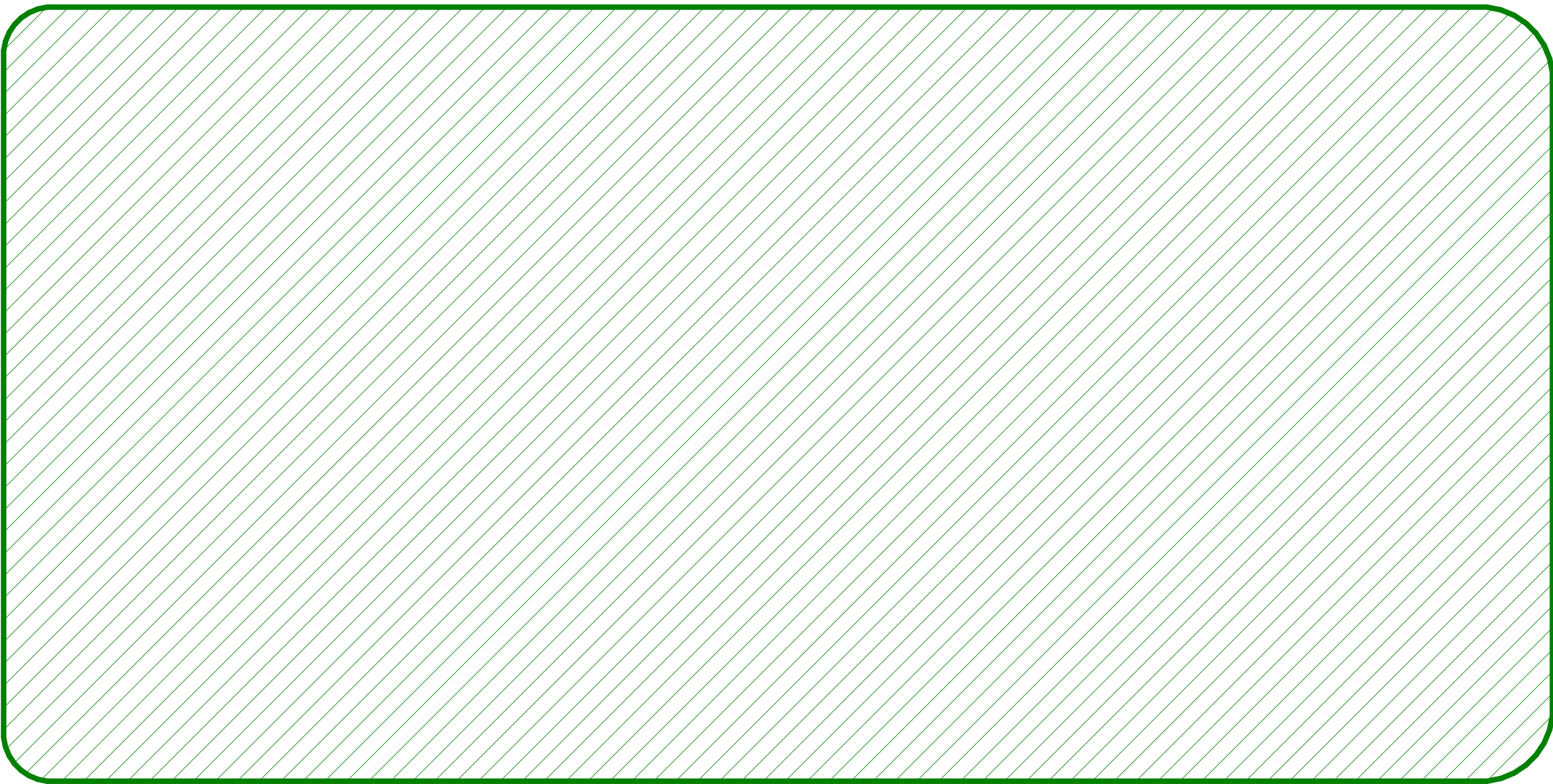
Symbol	Count	Hole Size	Plated	Hole Type	Drill Layer Pair	Via/Pad	Pad Shape	Template
☆	2	39.37mil (1.000mm)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c100hn100m0p354
▽	2	125.00mil (3.175mm)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c318hn318
□	4	55.00mil (1.397mm)	PTH	Round	Top Layer - Bottom Layer	Pad	<Mixed>	<Mixed>
	8 Total							

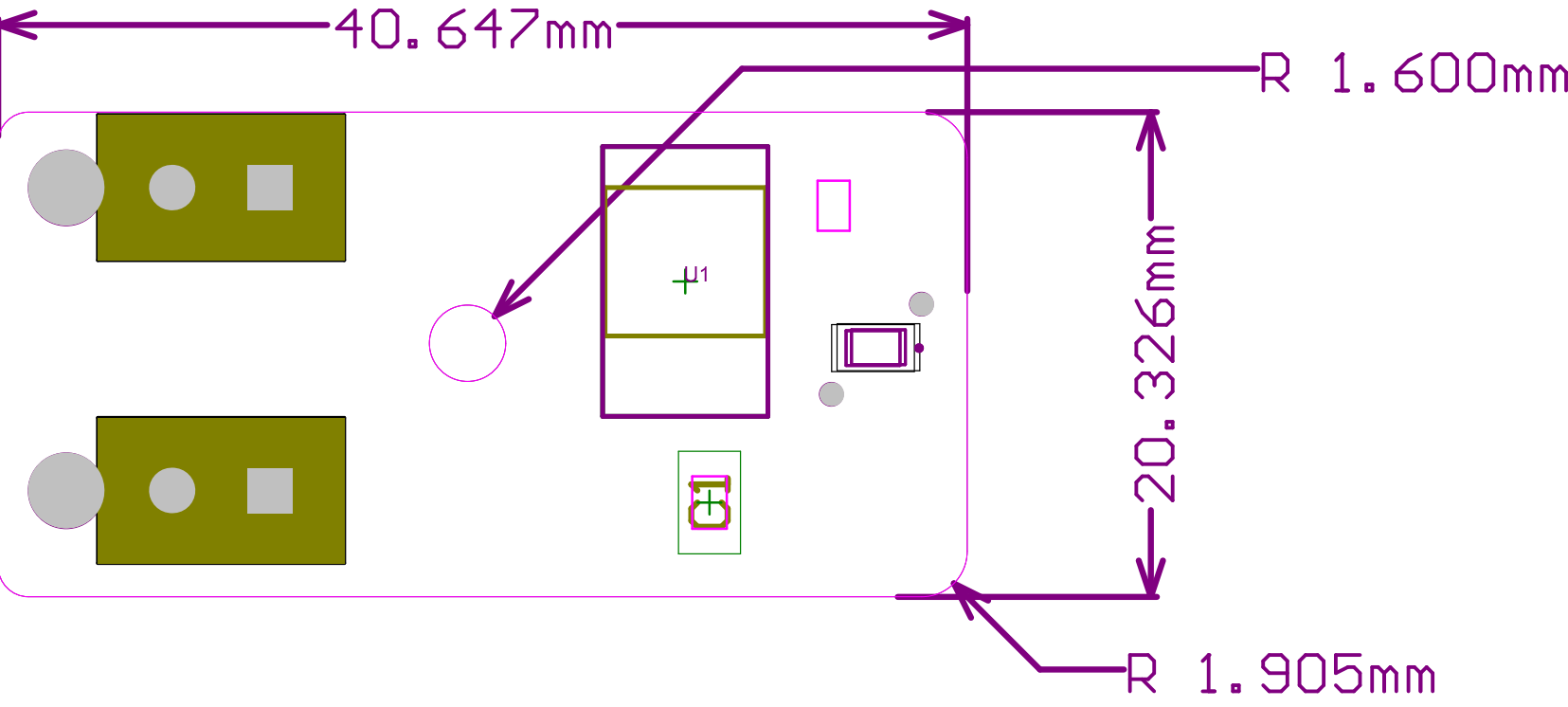
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				





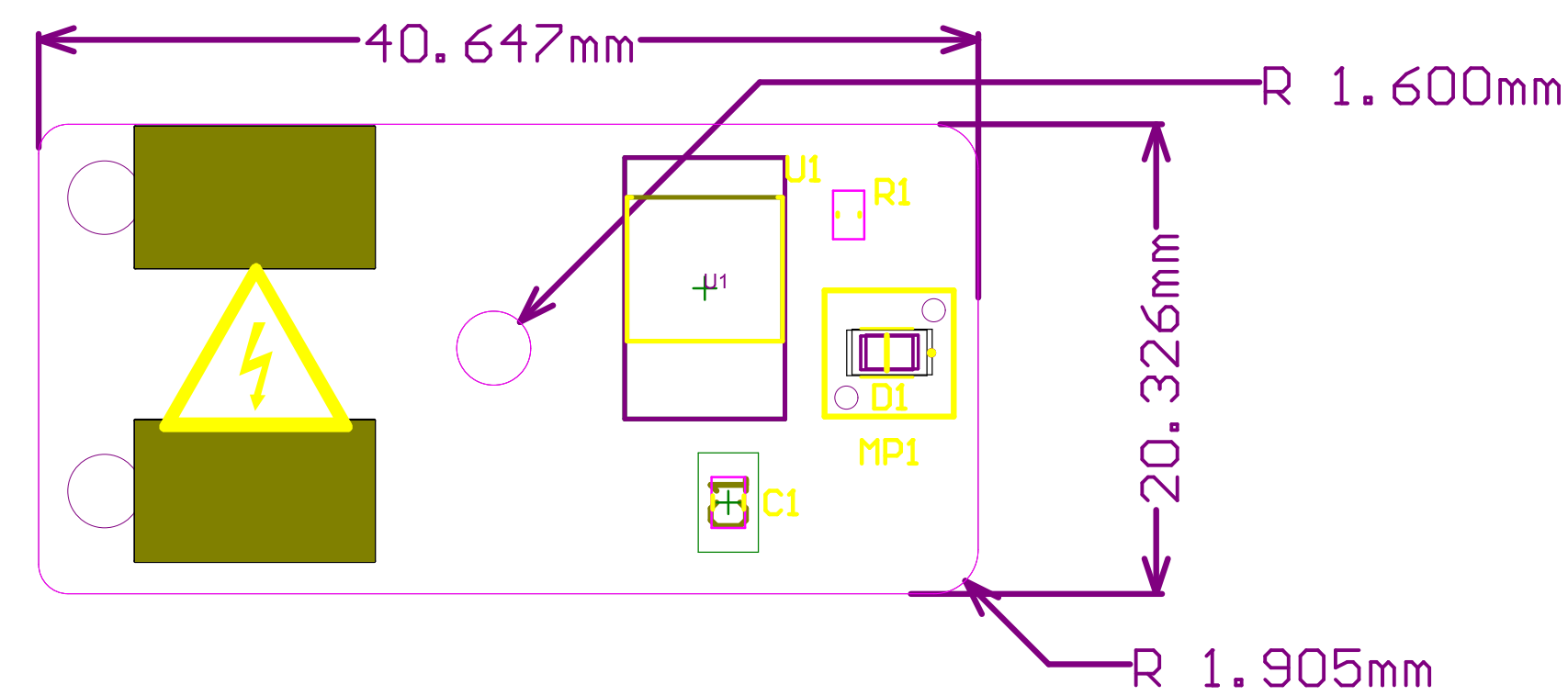
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				






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	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				

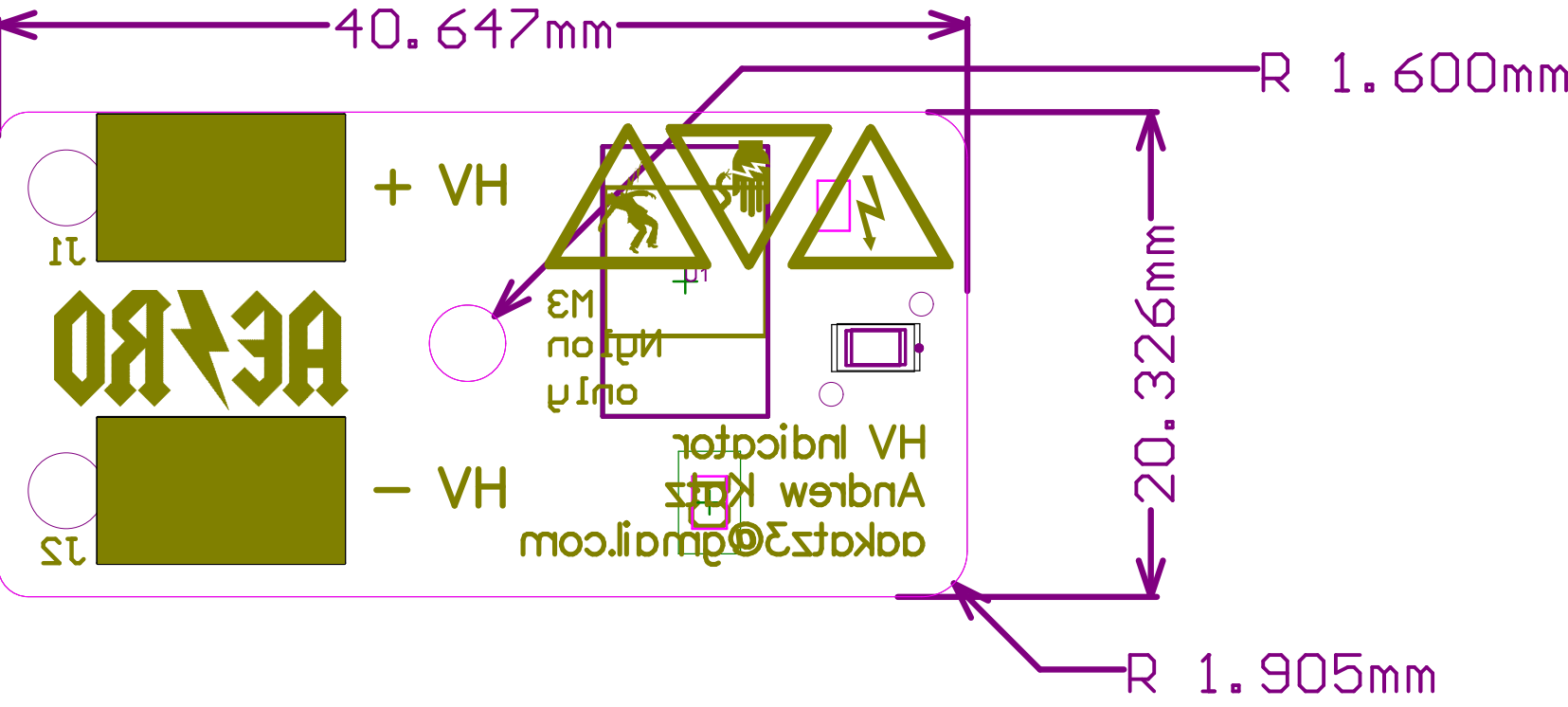




Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				

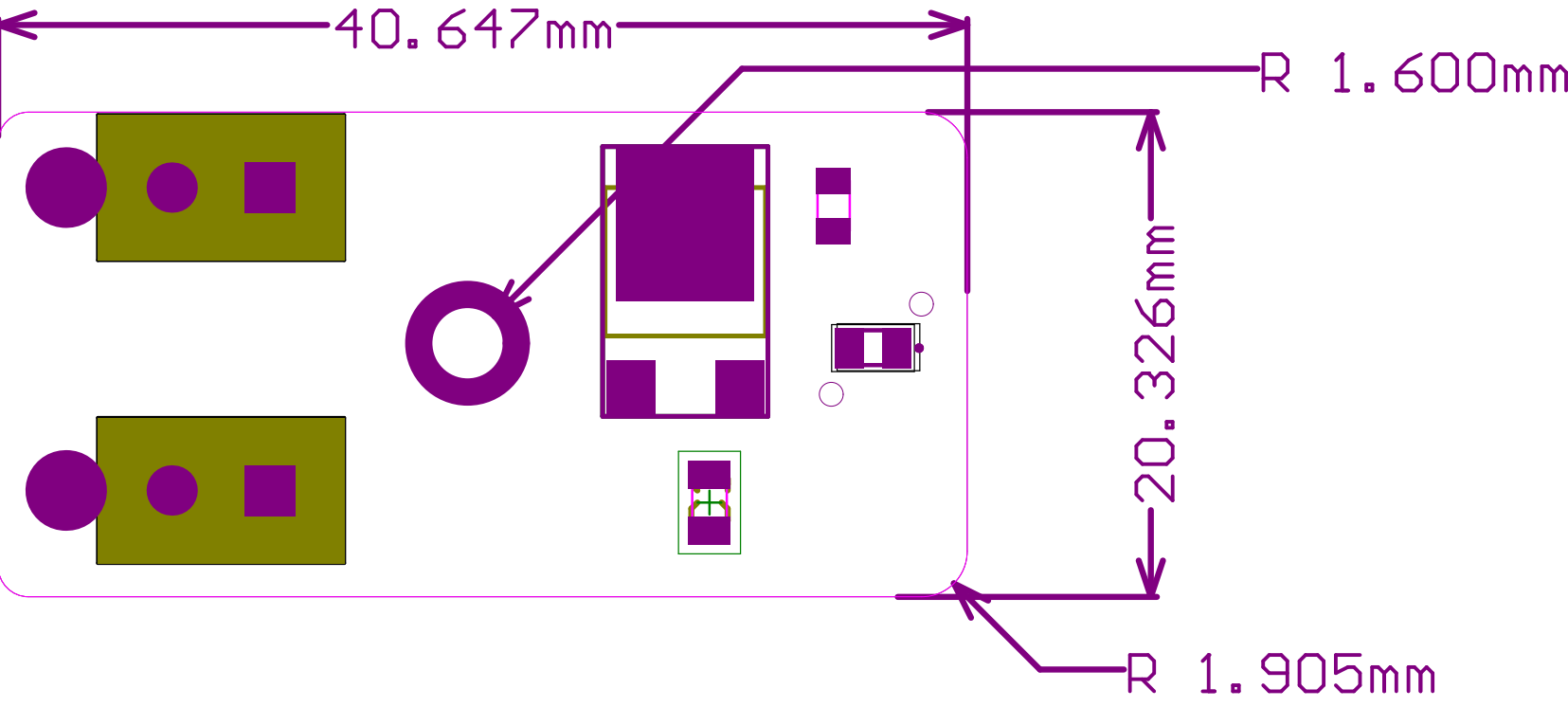


Title 60V HV Indicator		Designer: Andrew Katz aakatz3@gmail.com	
Size: Letter	Number:	Revision:	
Date: Time: 2/7/2020		Sheet of	
File: 60V_Ind.PcbDoc			



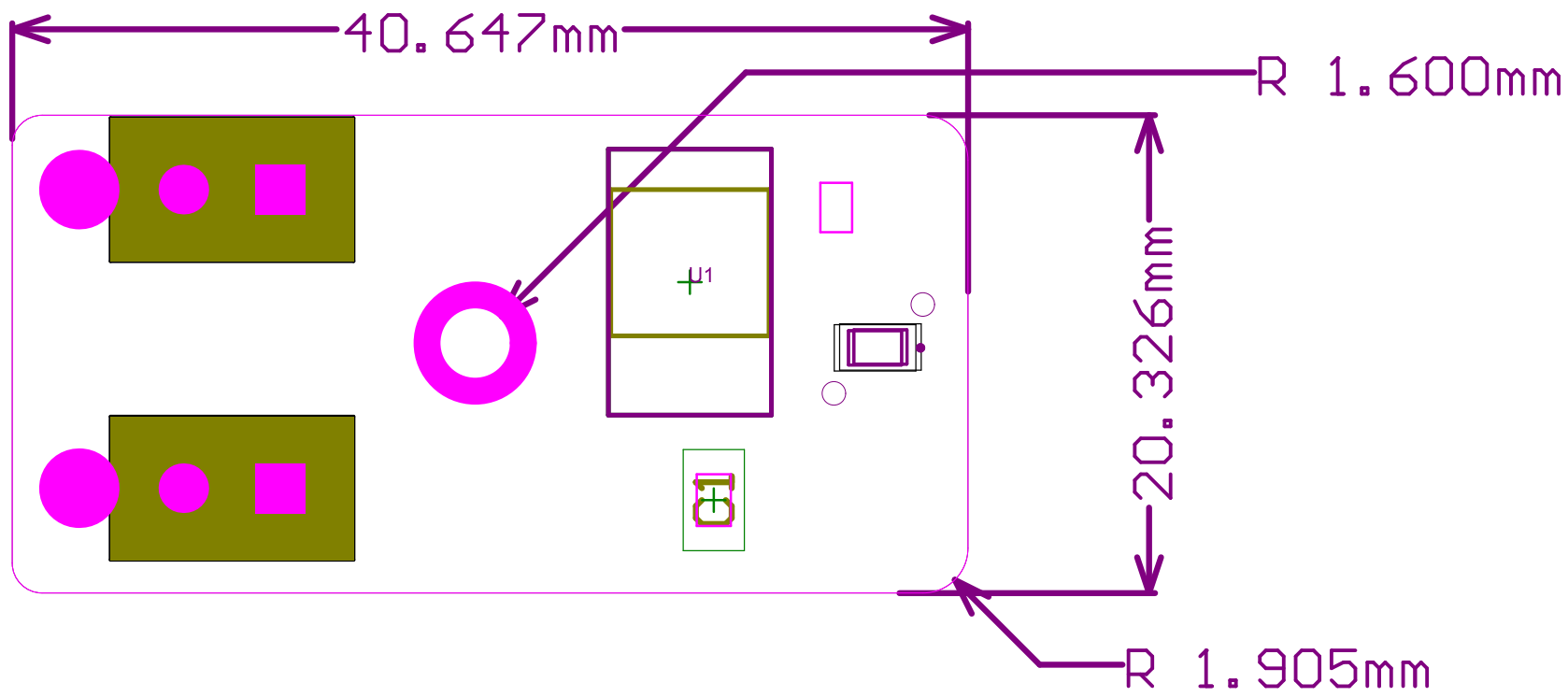
Layer	Name	Material	Thickness	Constant	Board Layer Stack
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	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



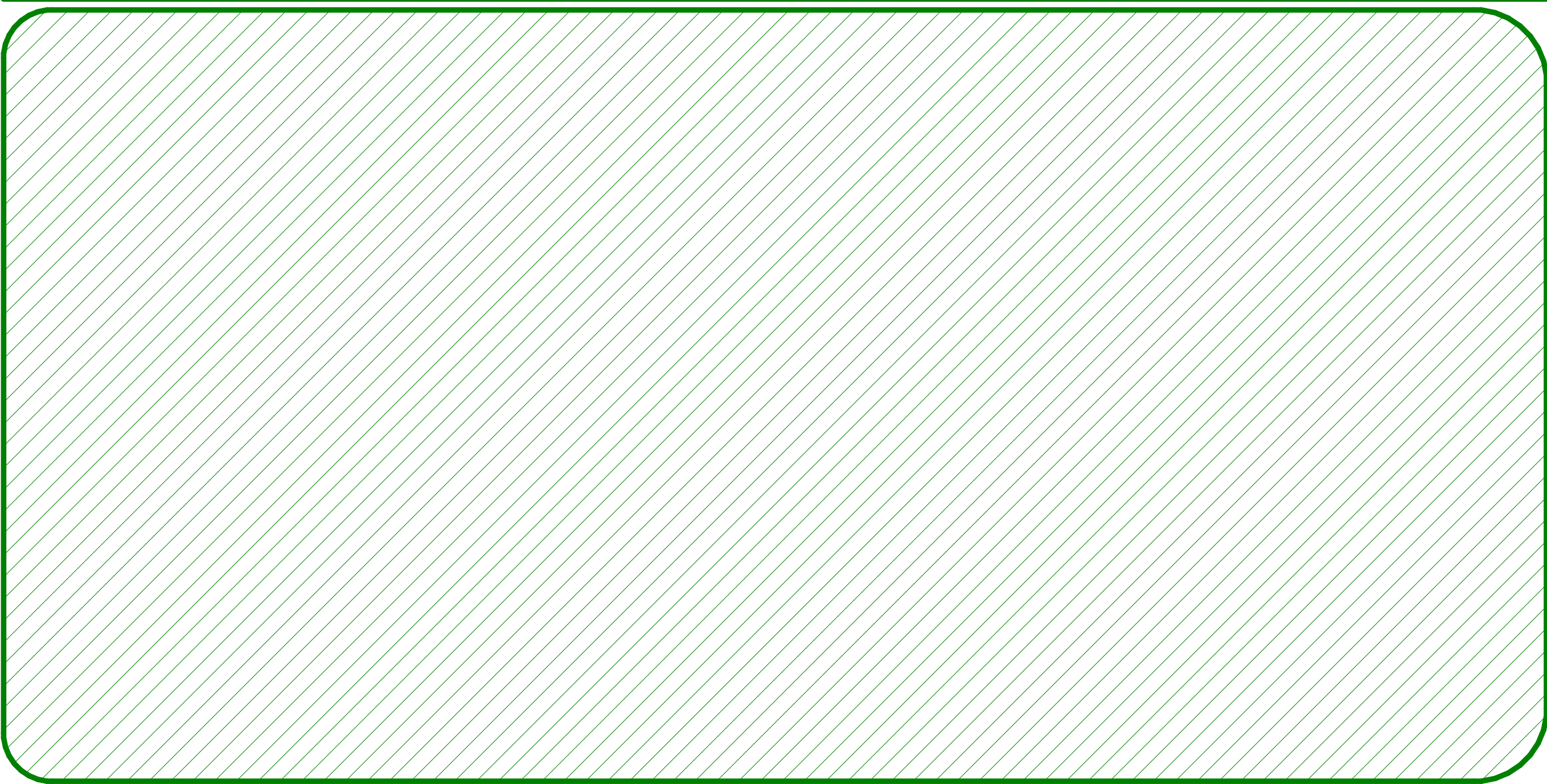


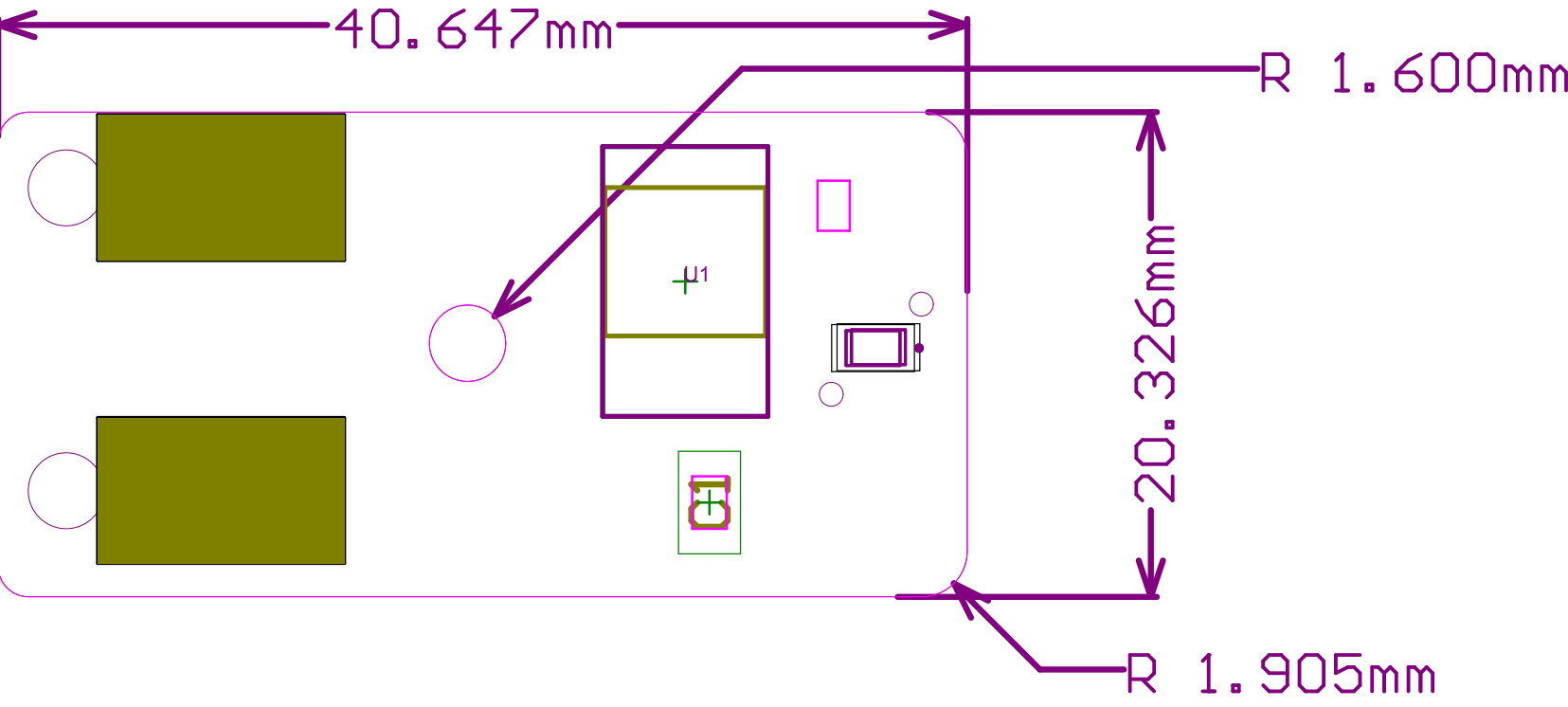
Layer	Name	Material	Thickness	Constant	Board Layer Stack
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	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
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	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



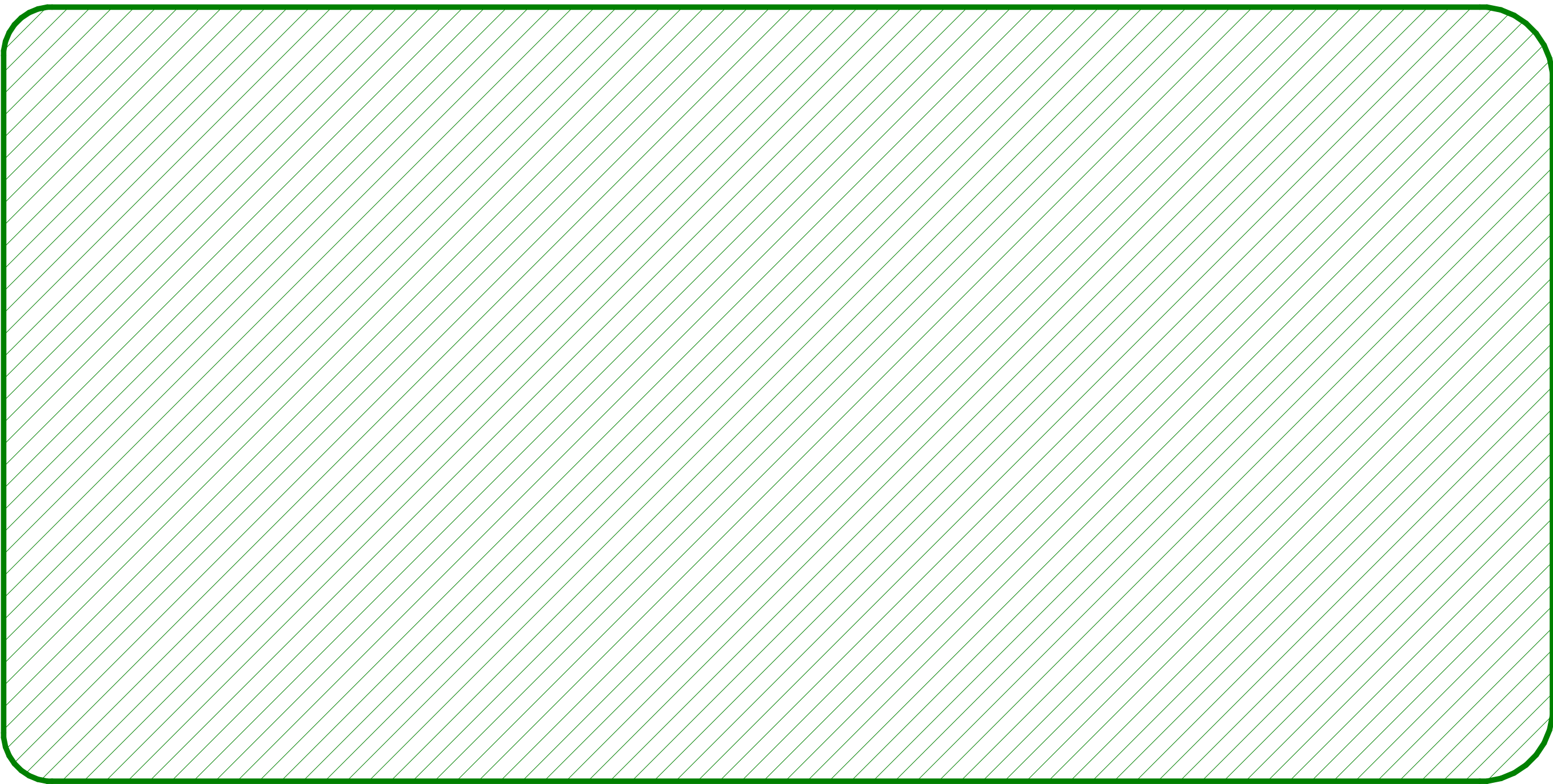


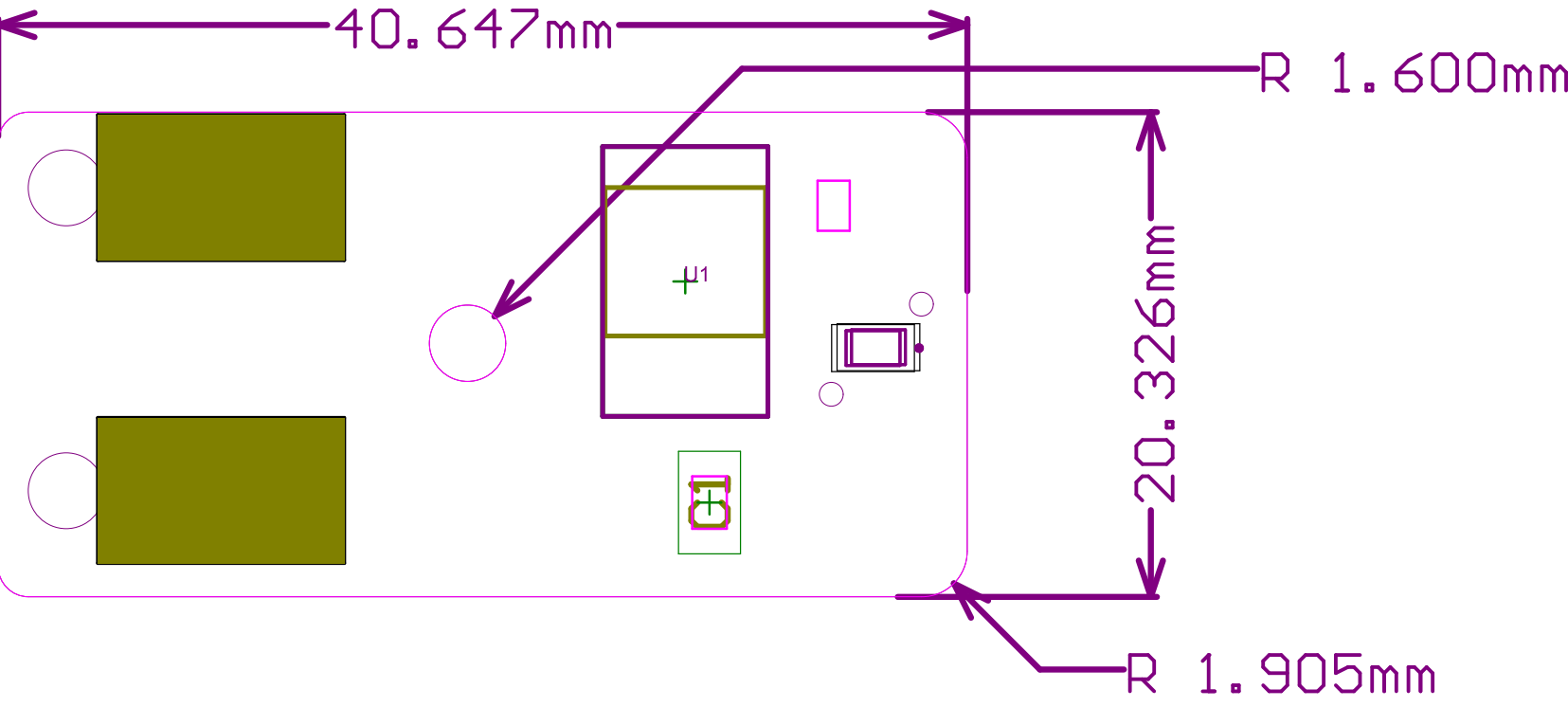
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	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



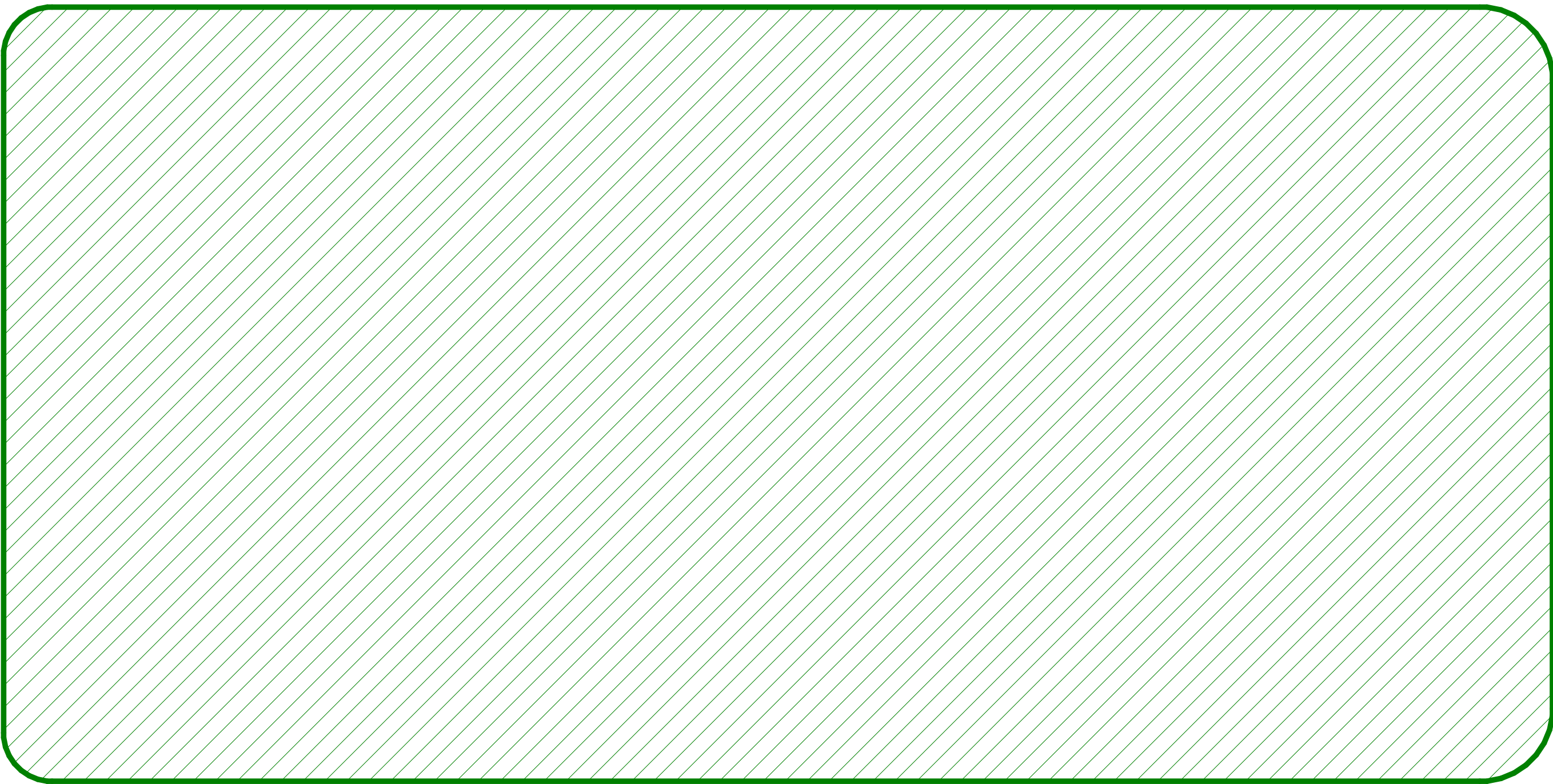


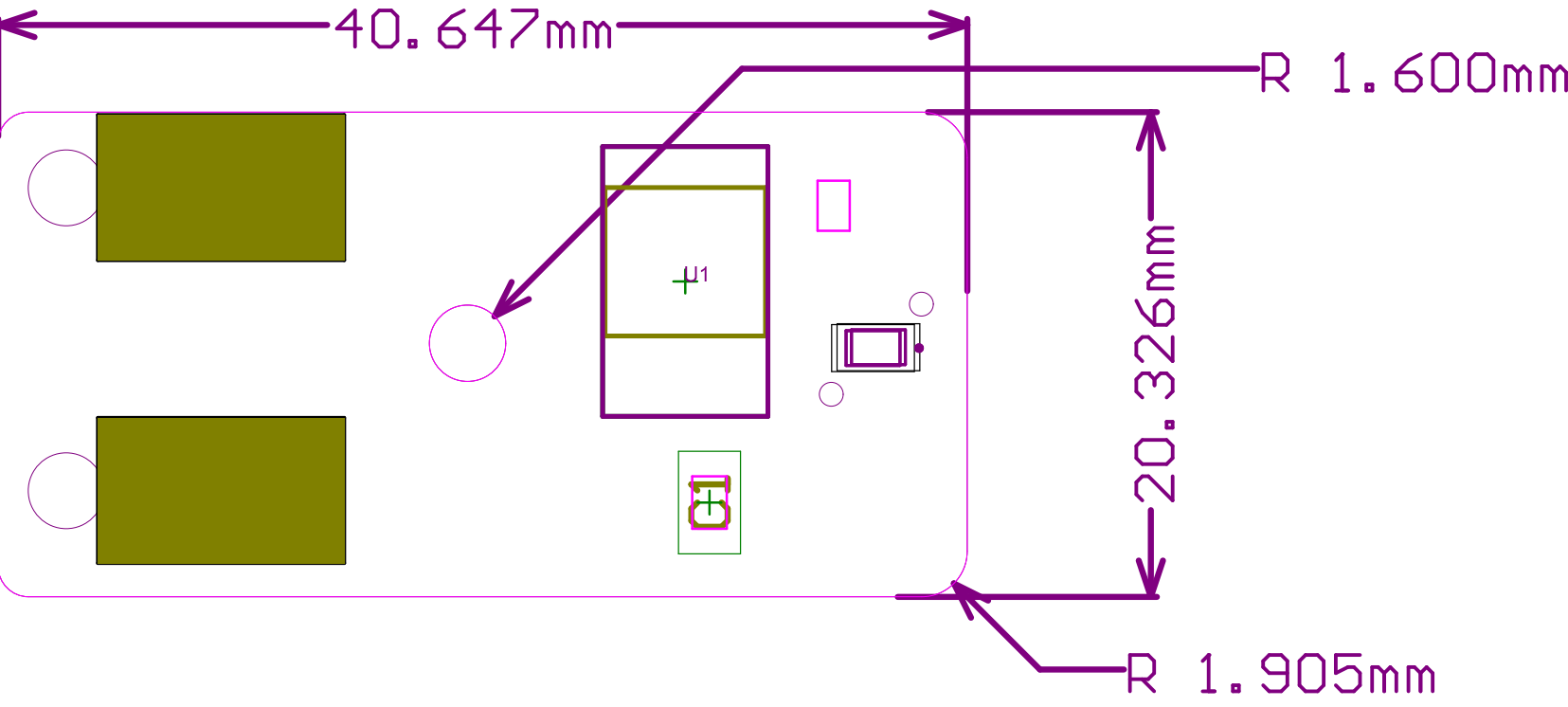
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	Bottom Solder	SM-001	1.00mil	4	
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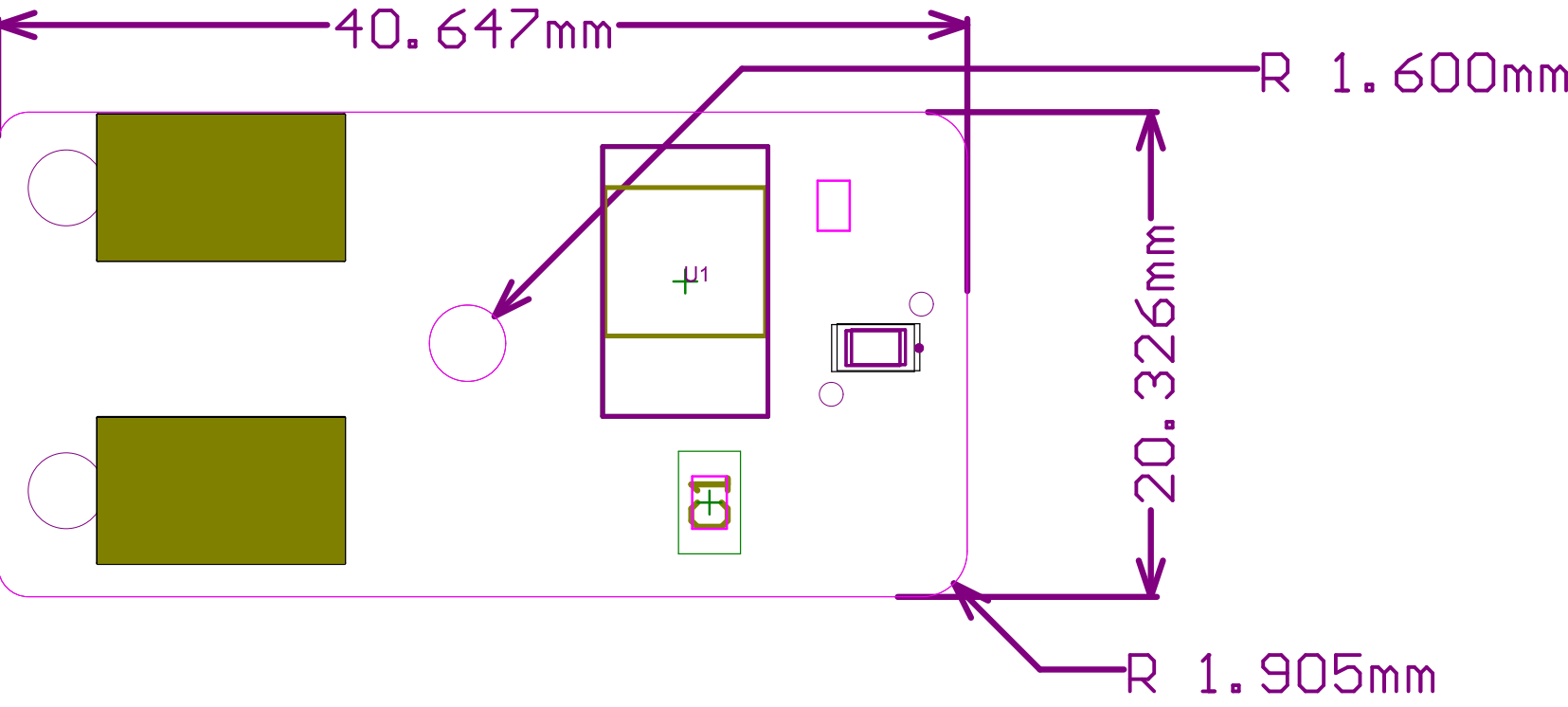
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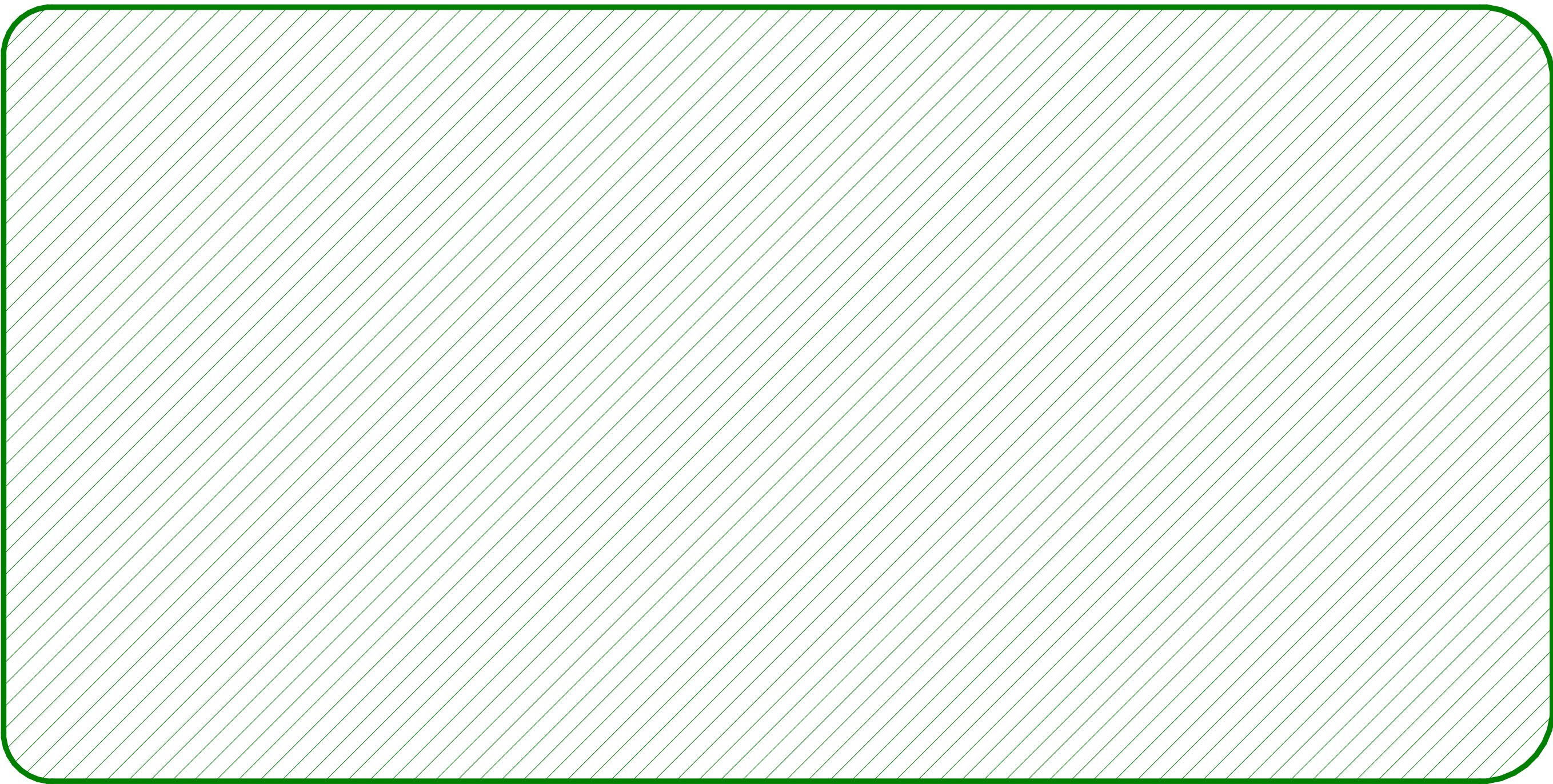


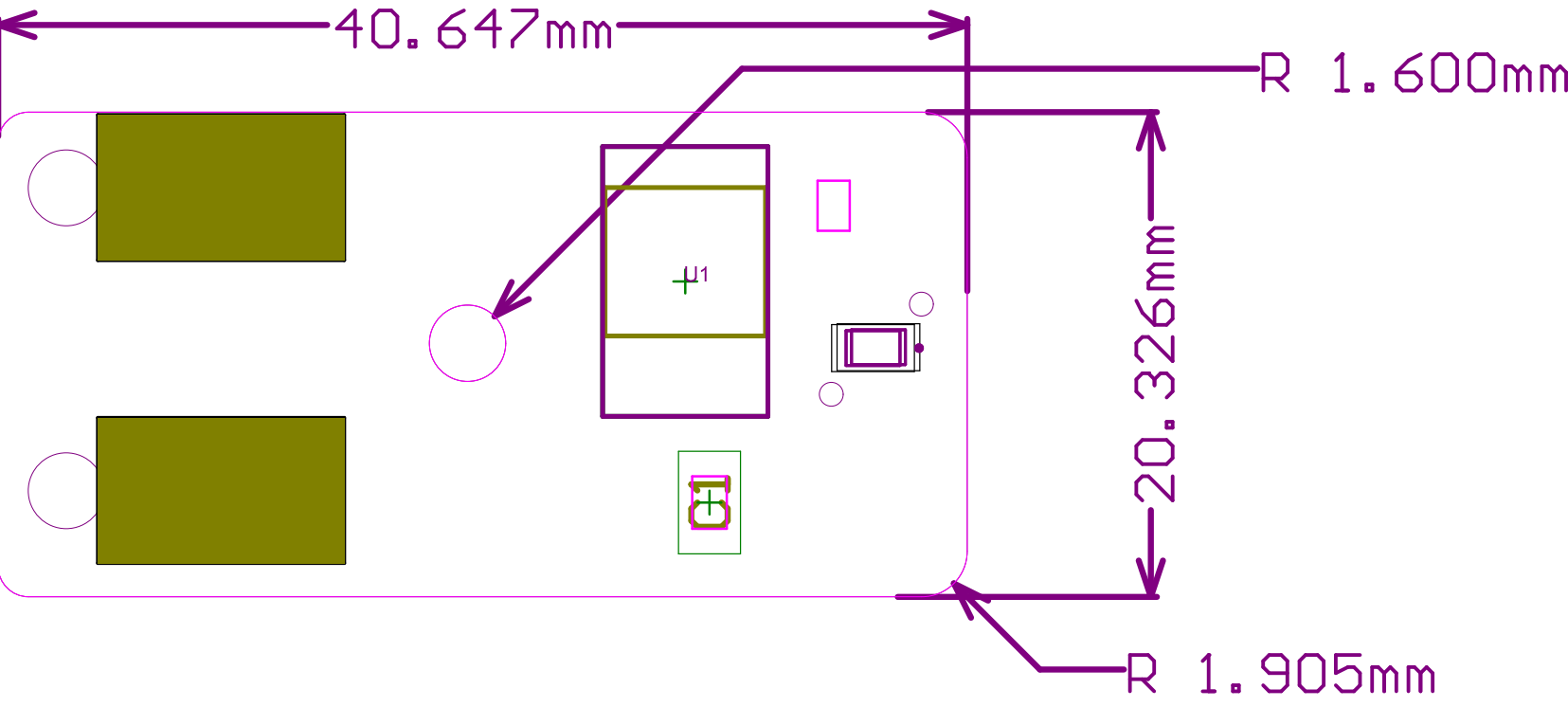
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	Bottom Overlay				



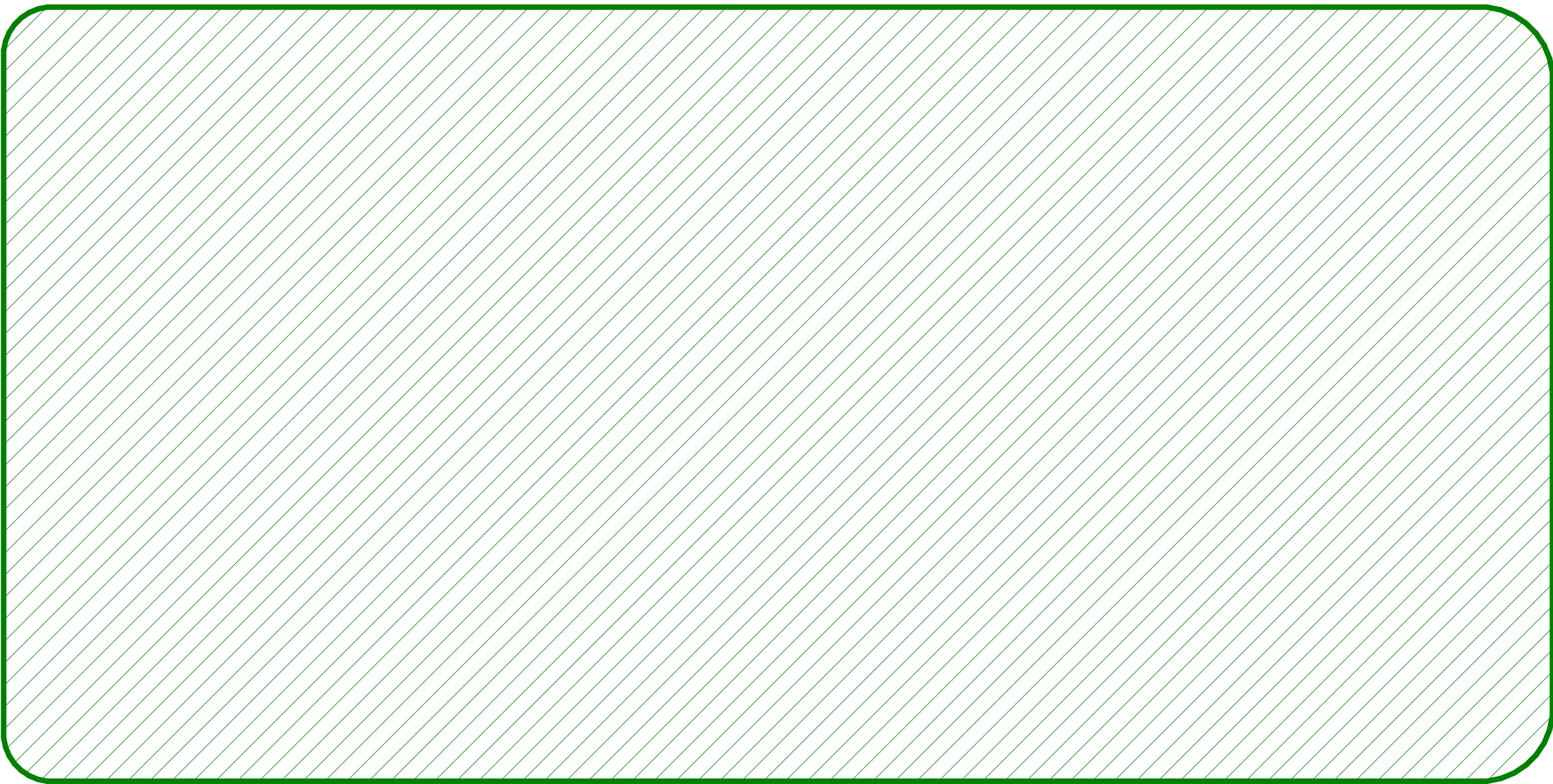


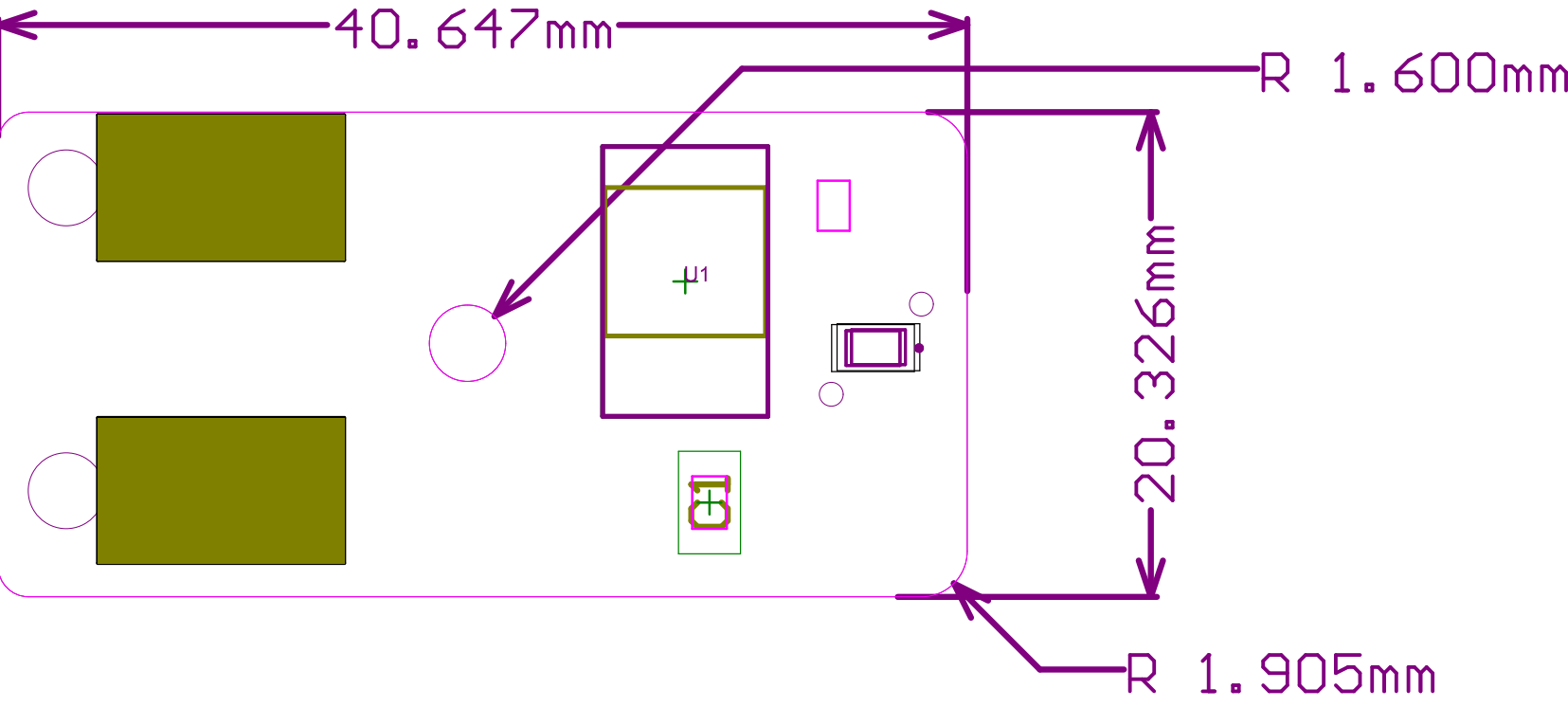
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	Bottom Overlay				



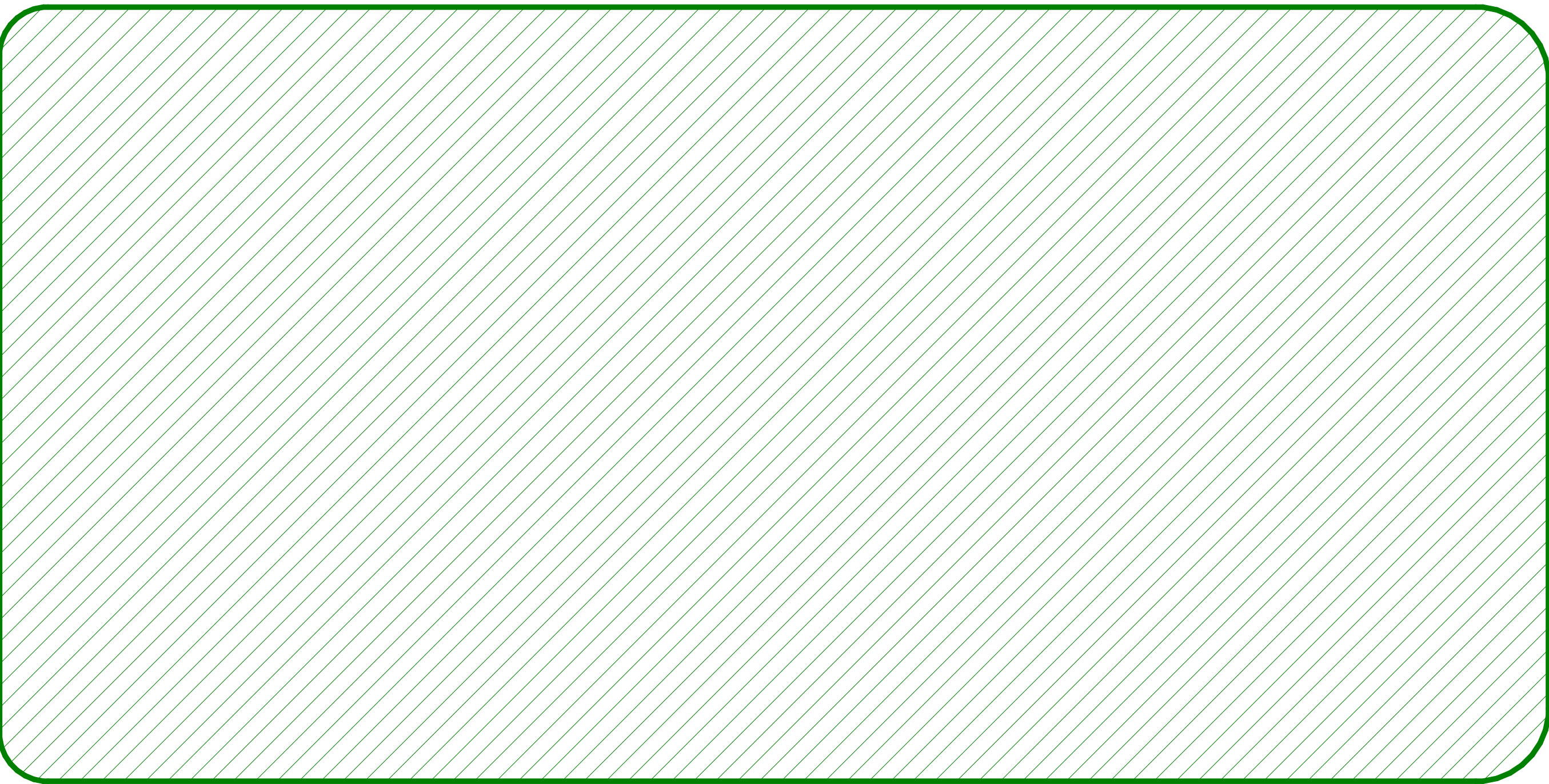


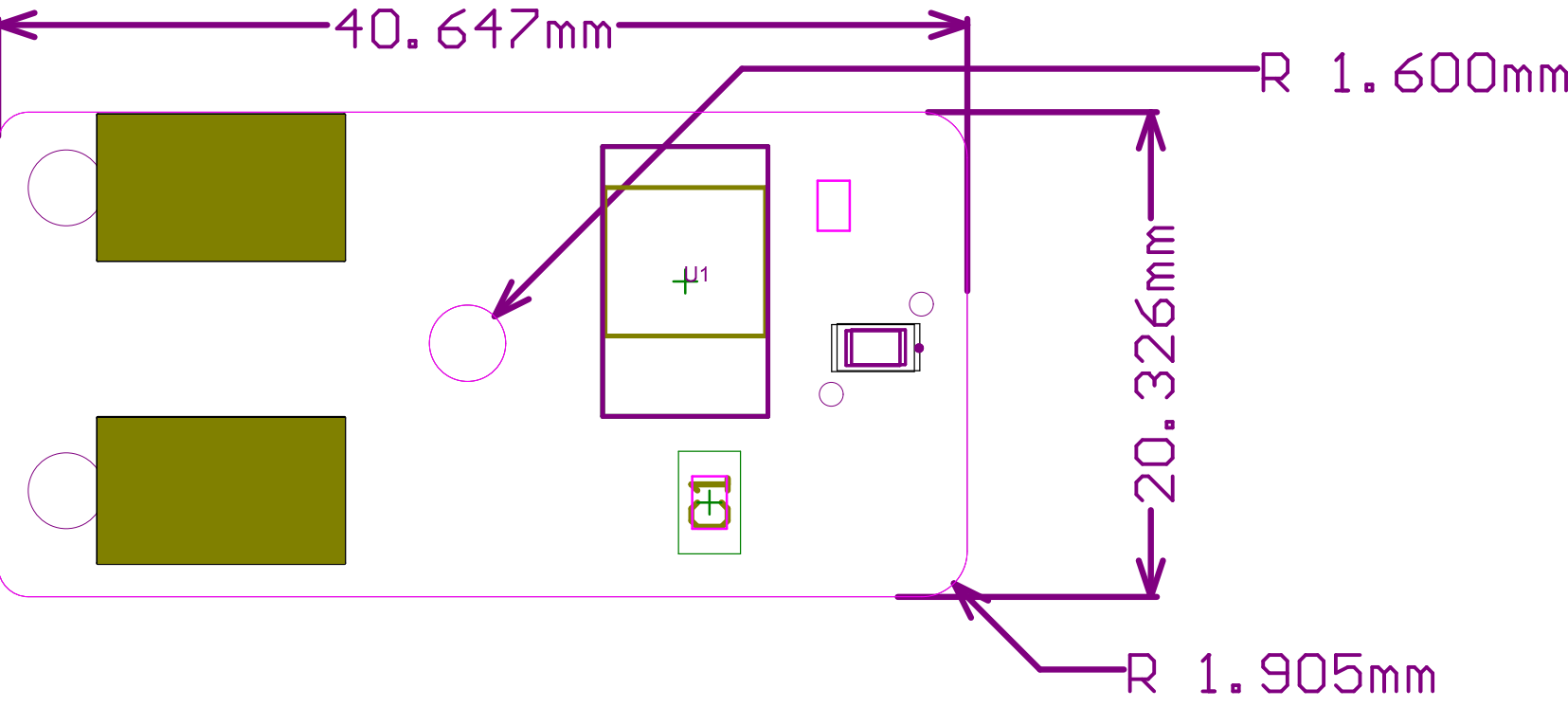
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	Bottom Overlay				



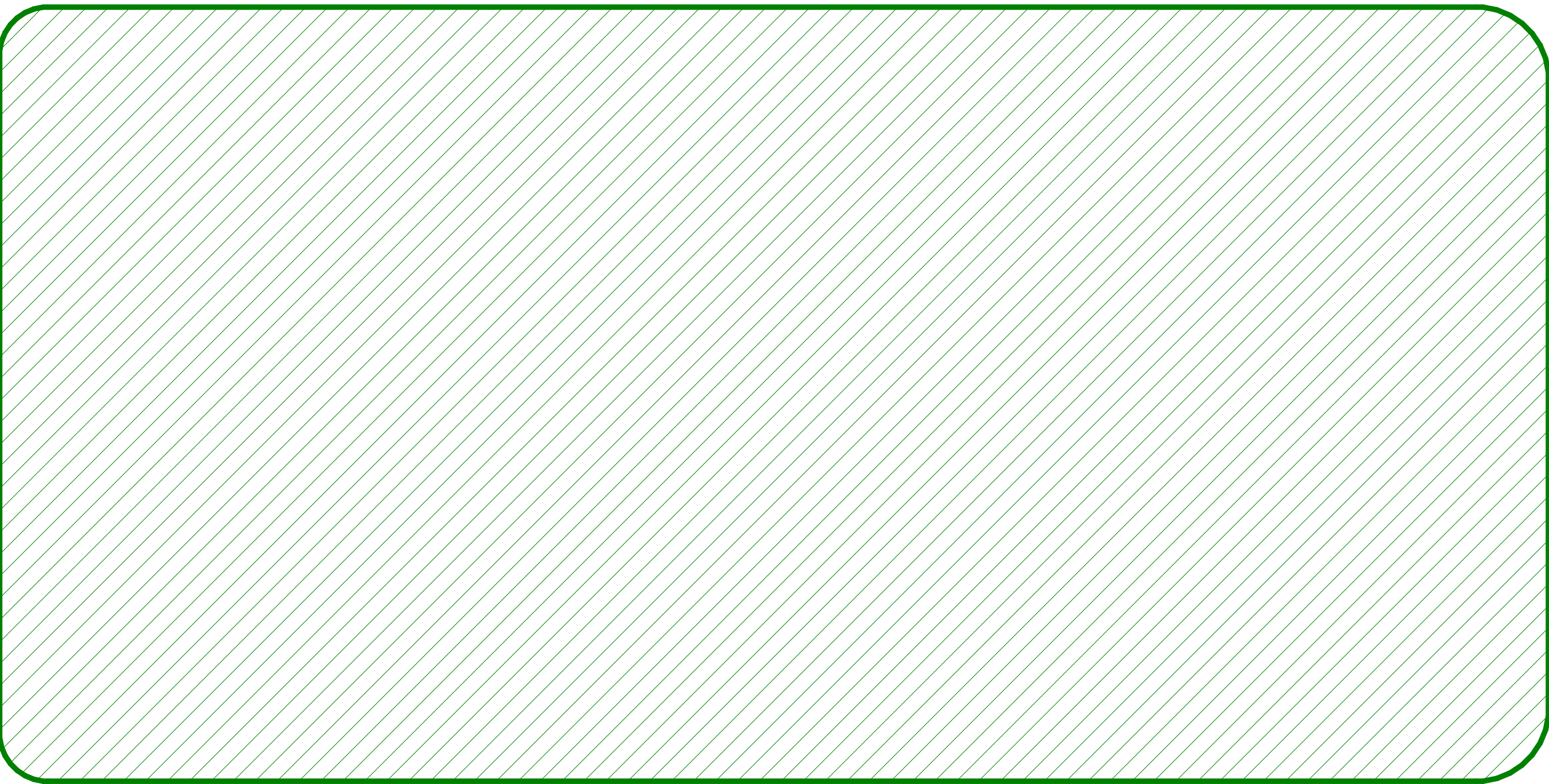


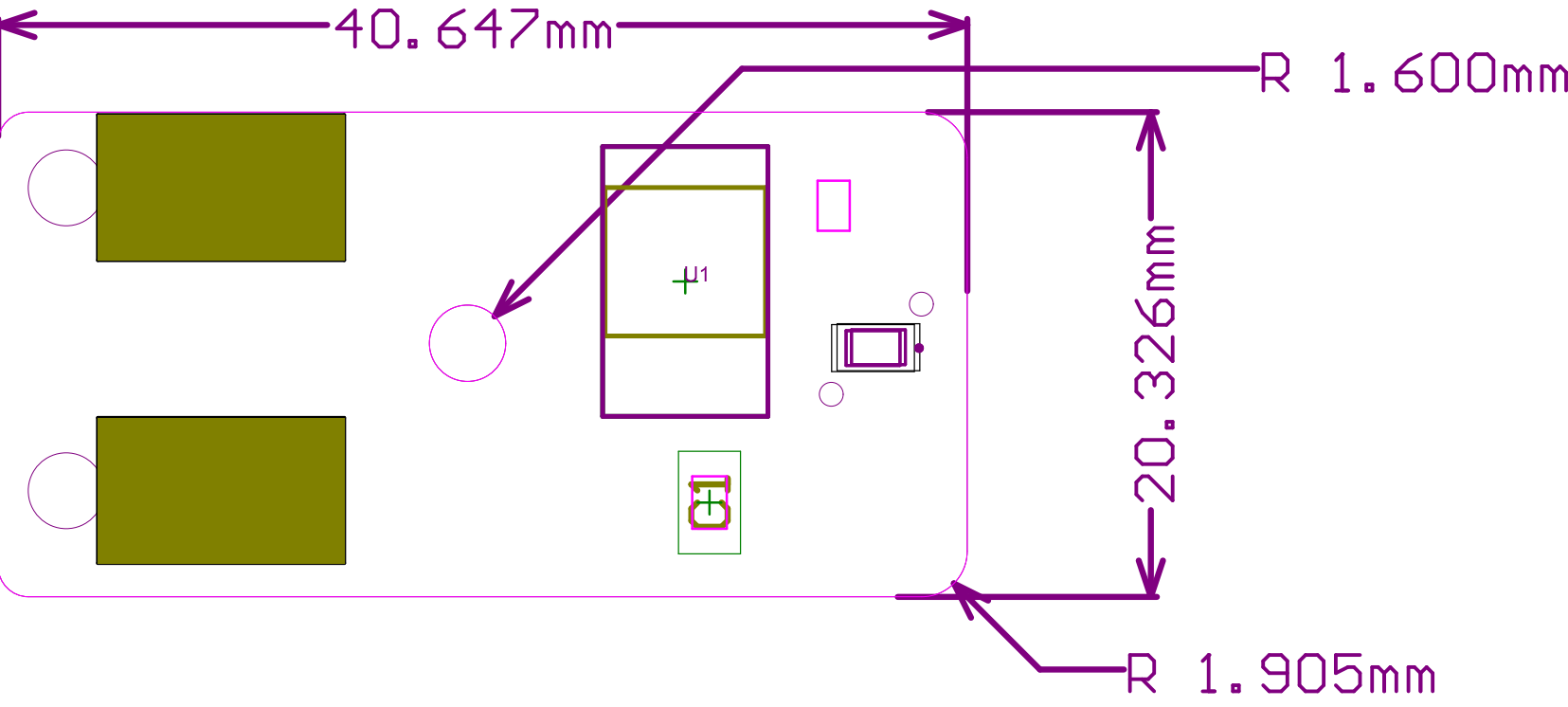
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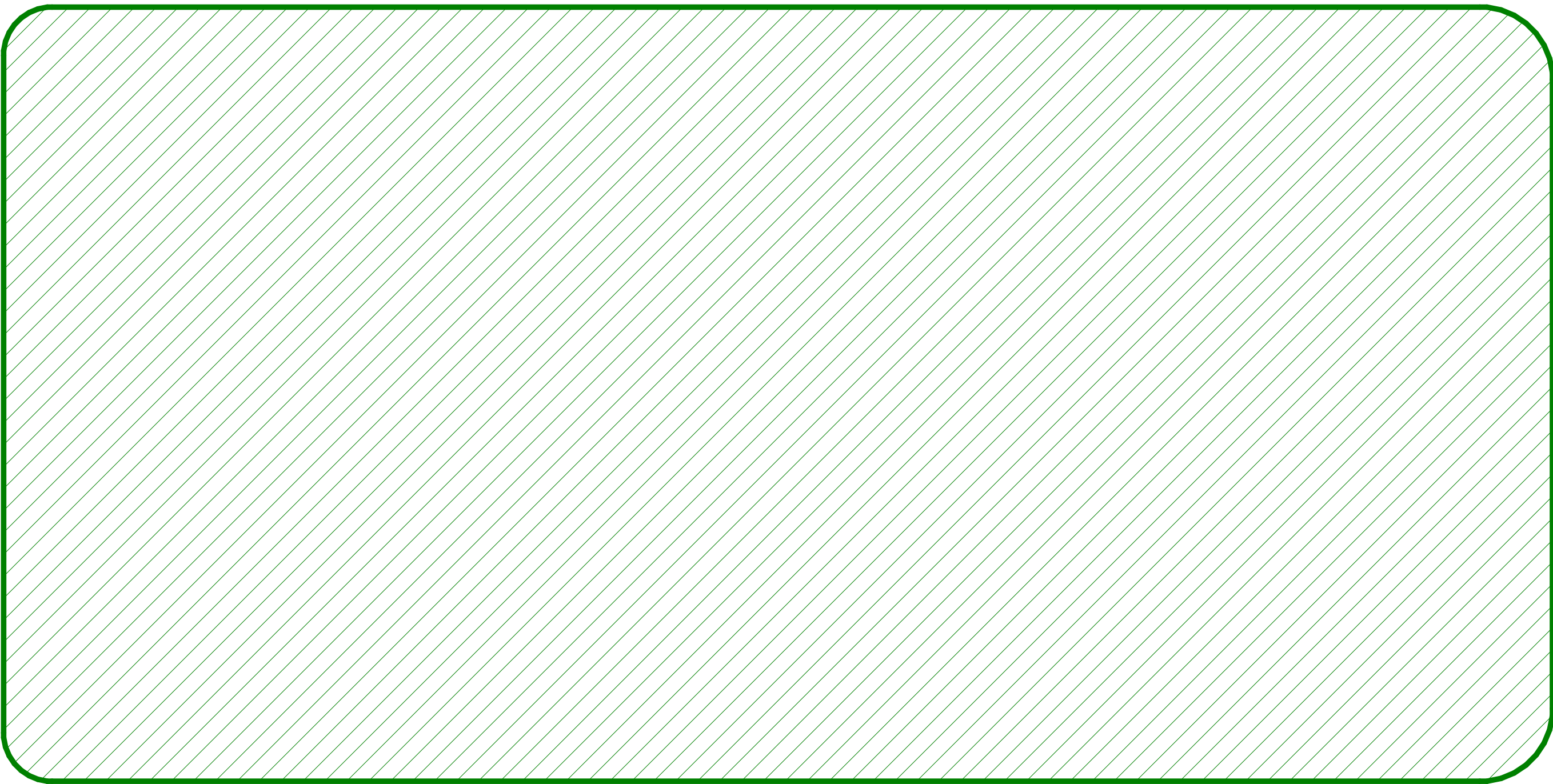


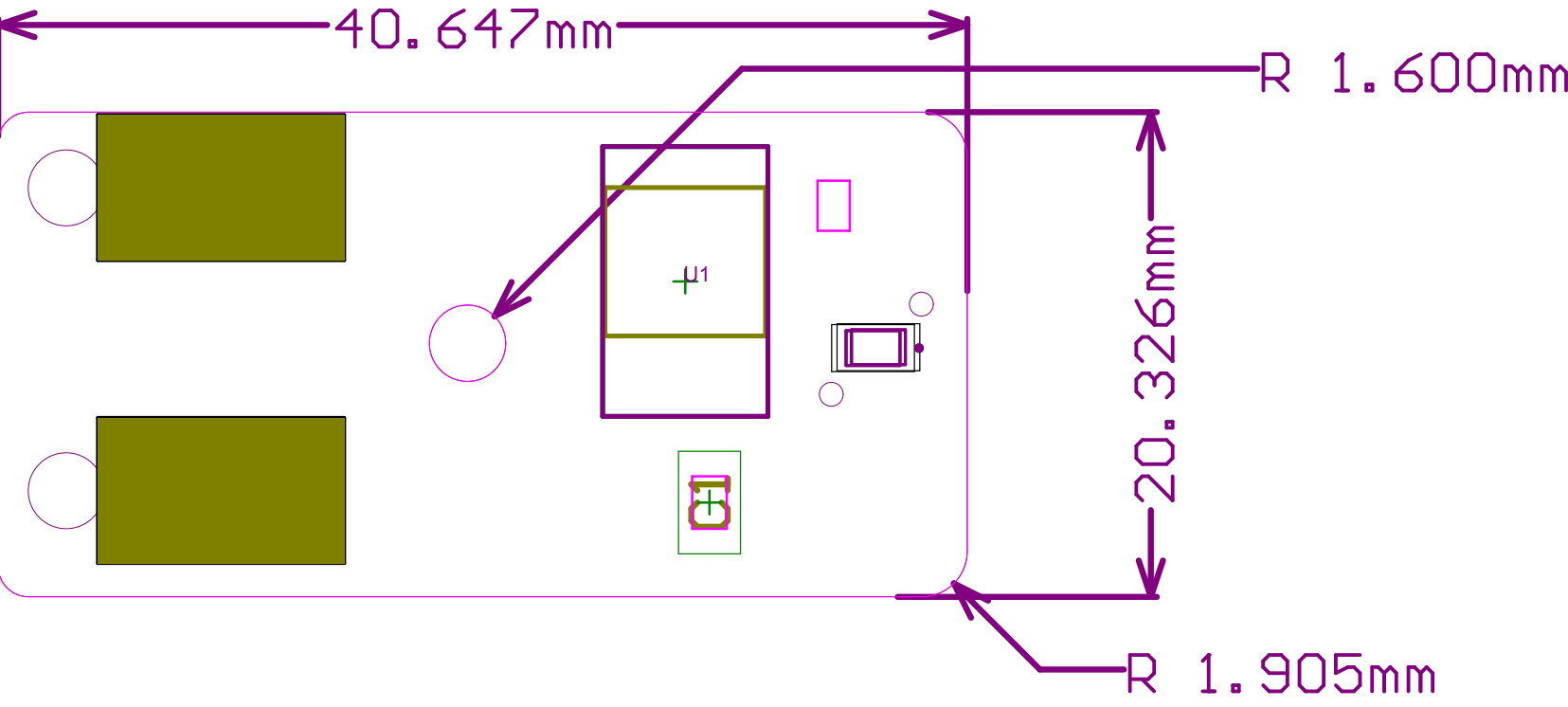
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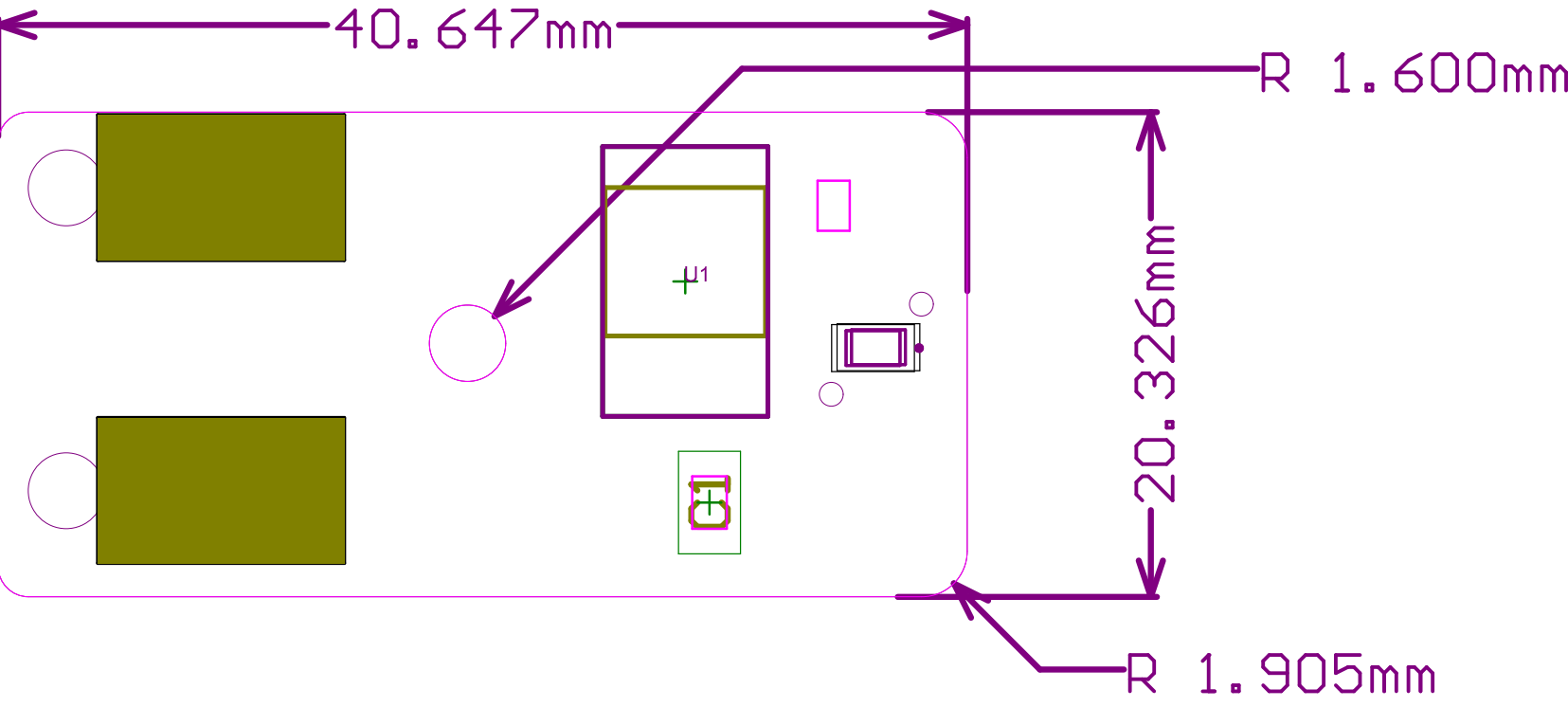
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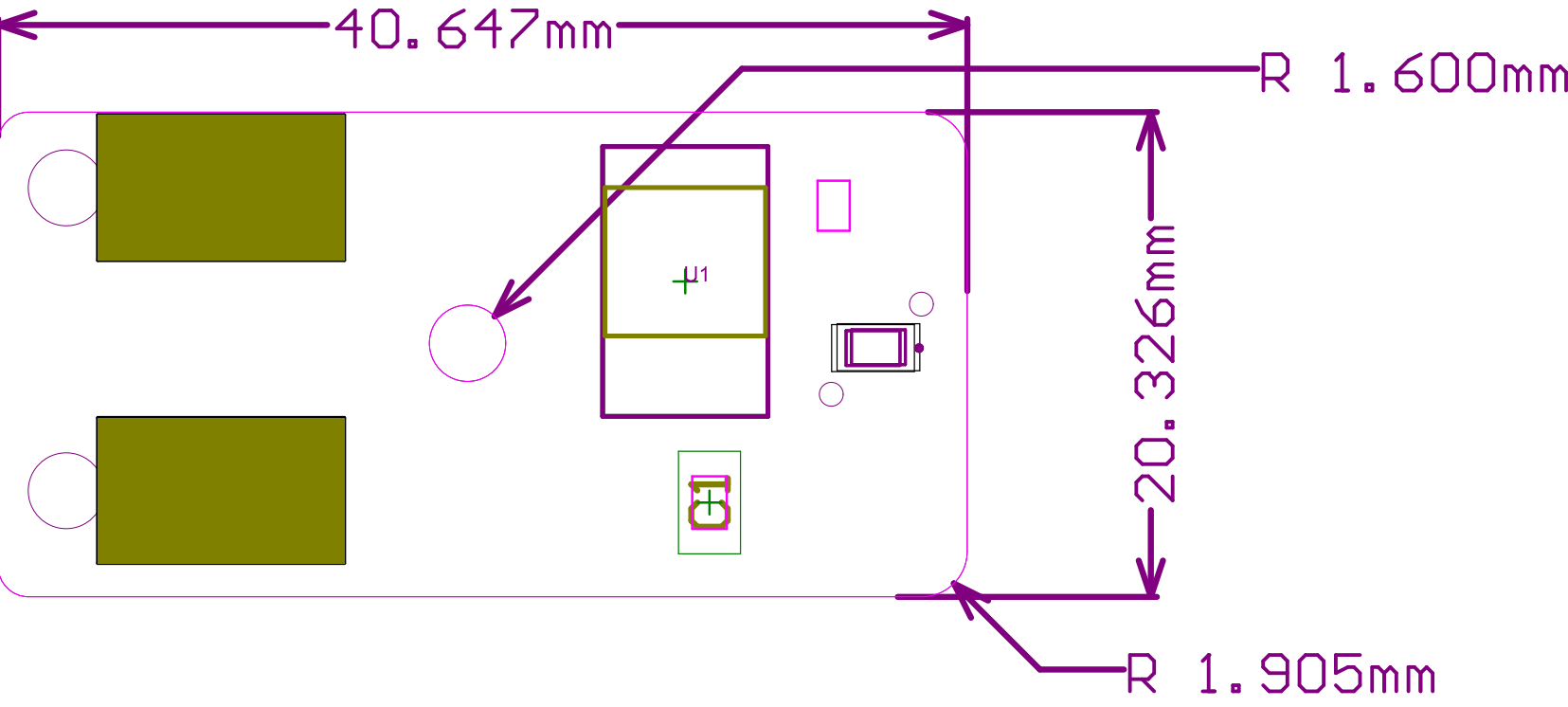
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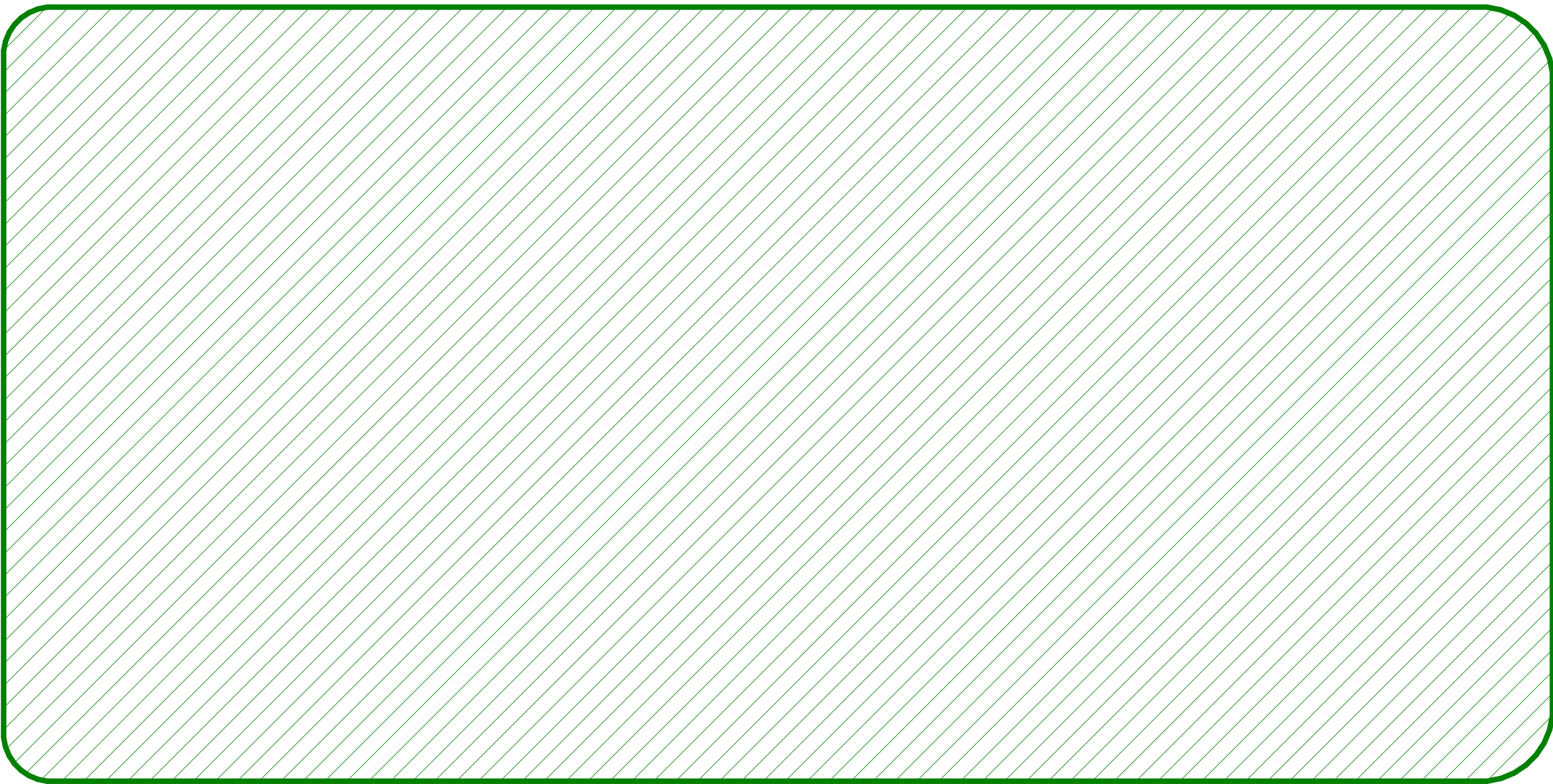


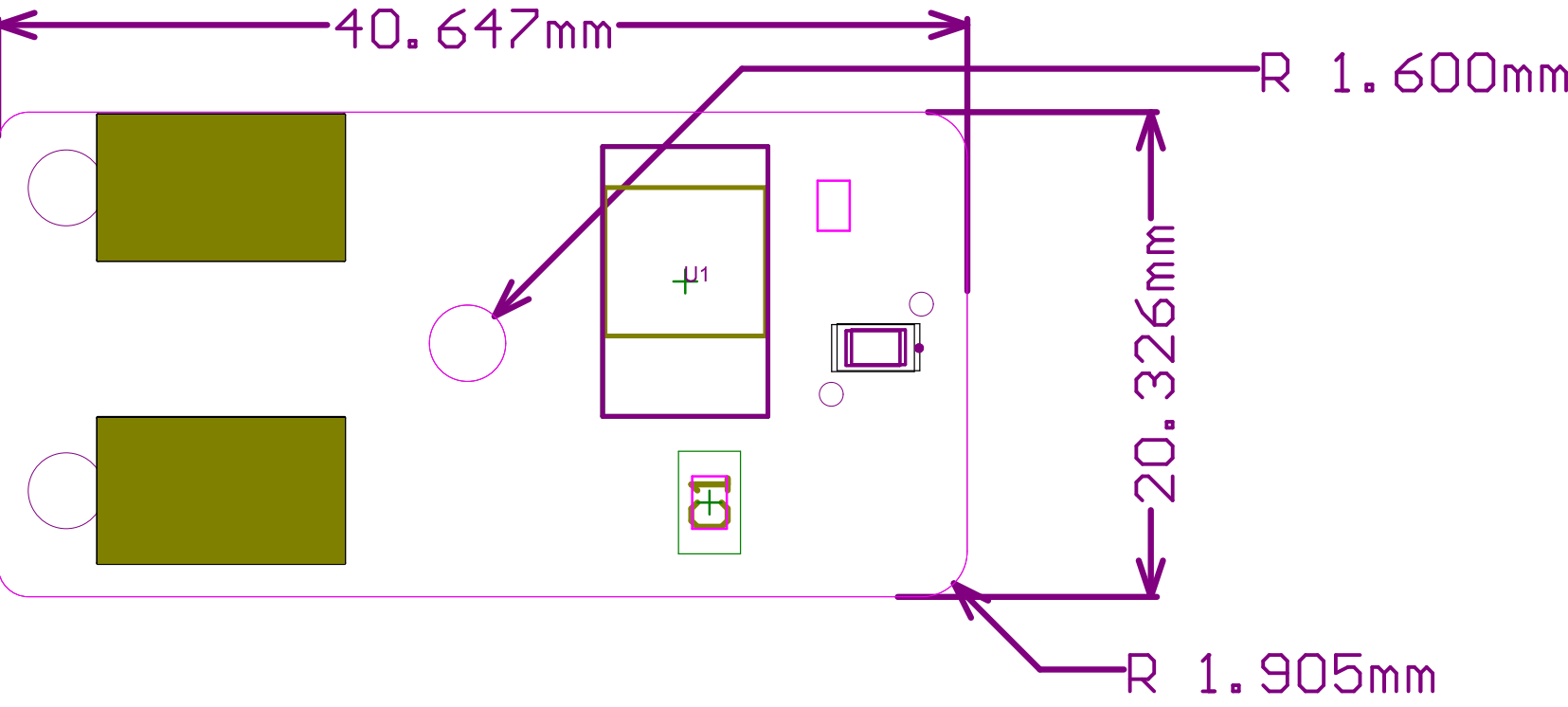
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	Bottom Overlay				



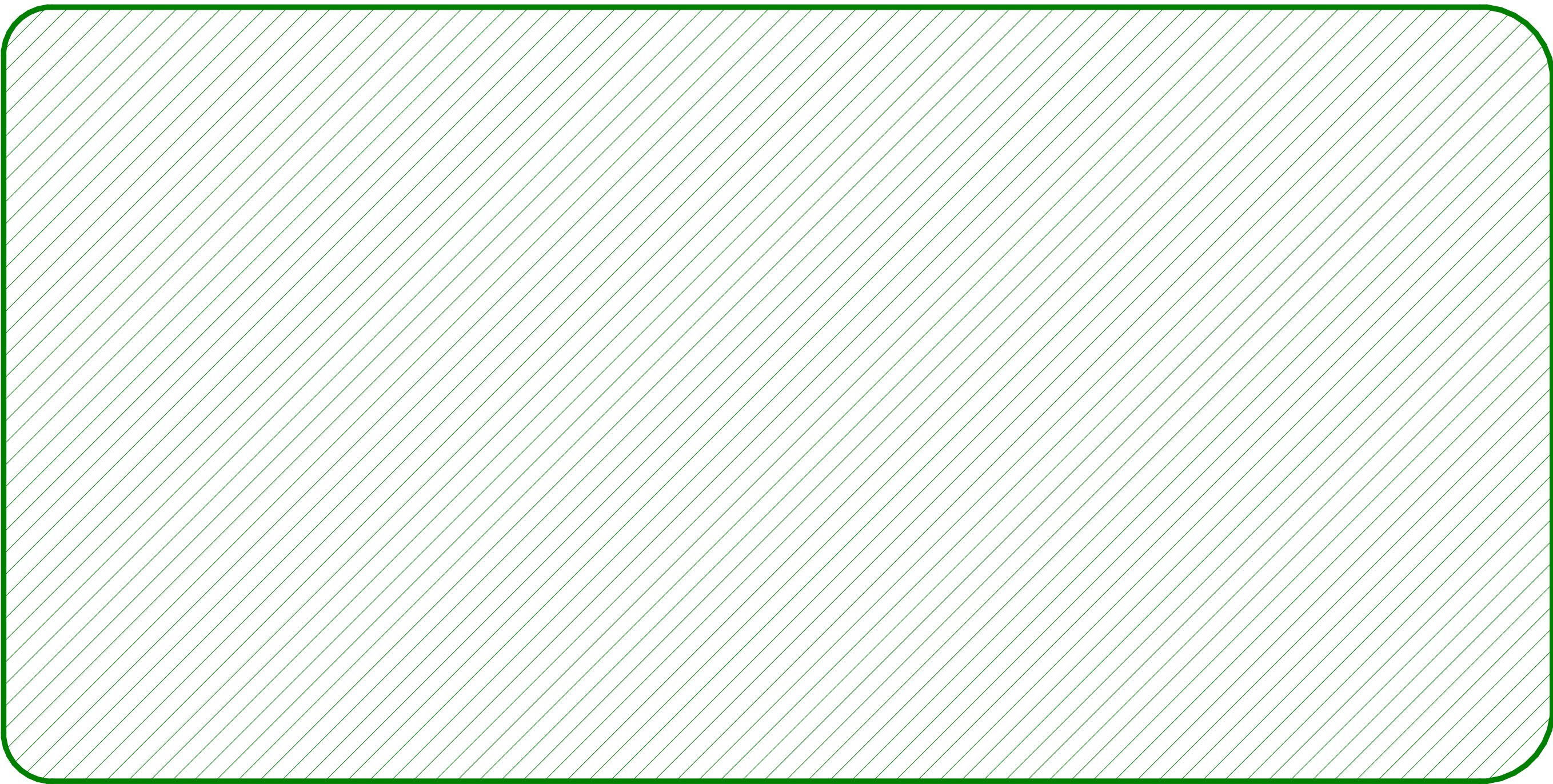


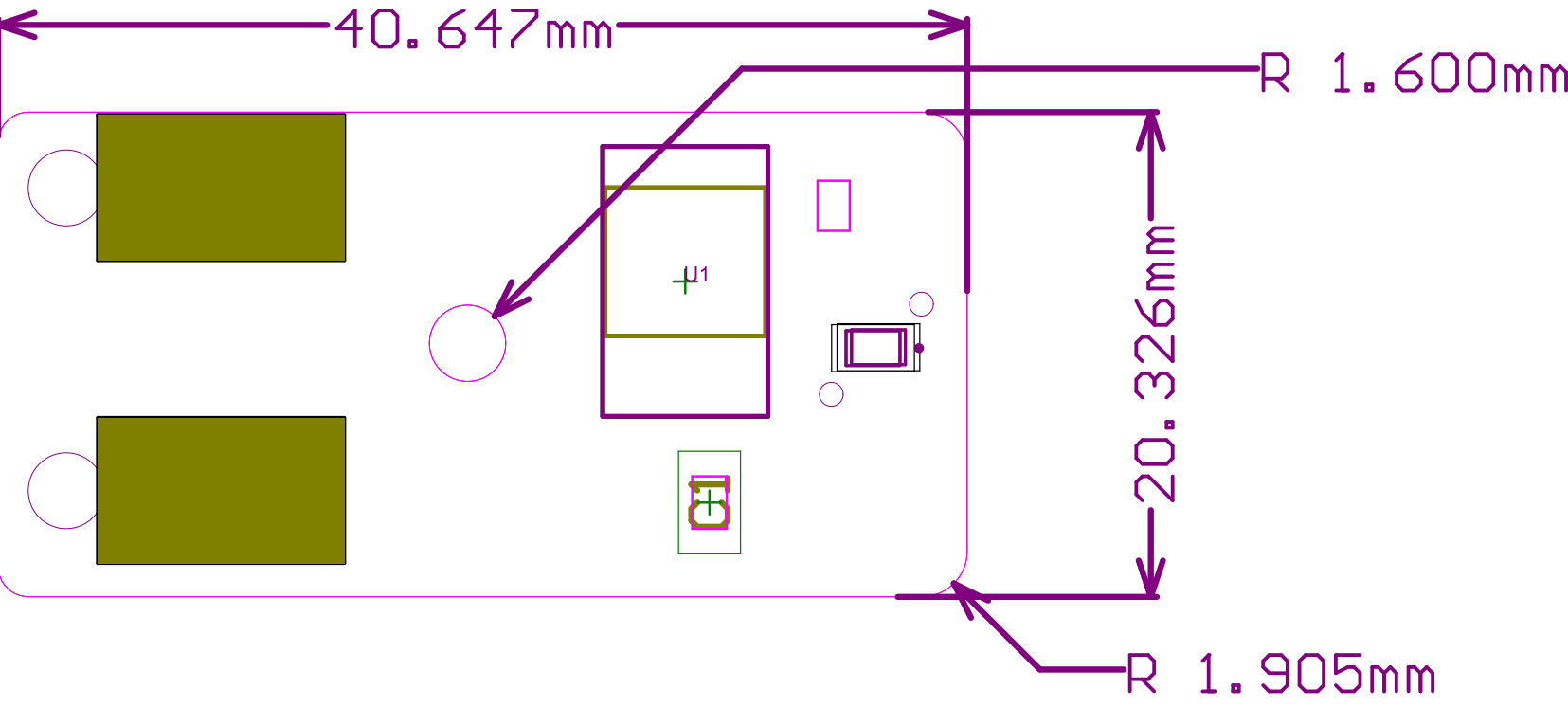
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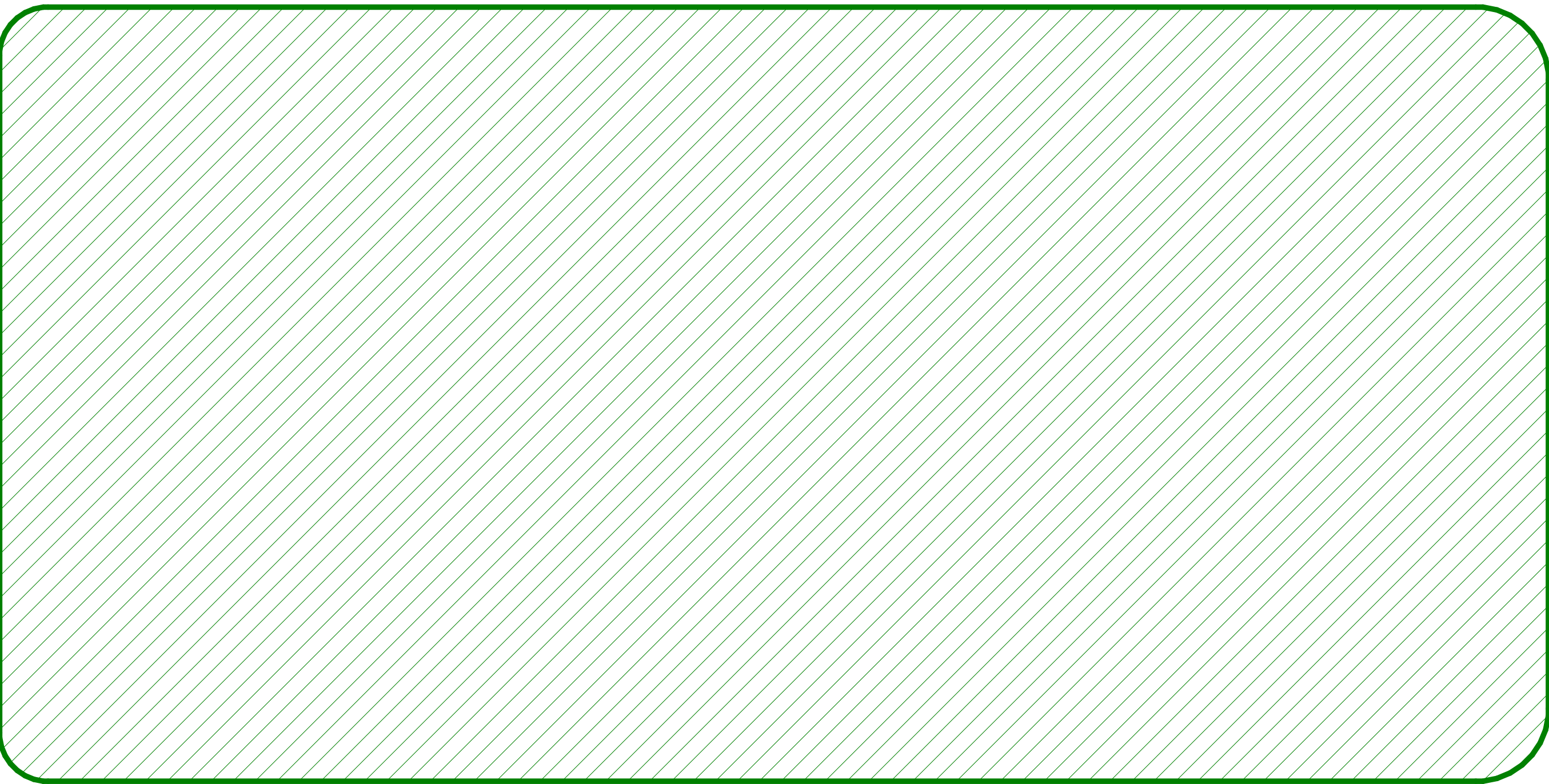


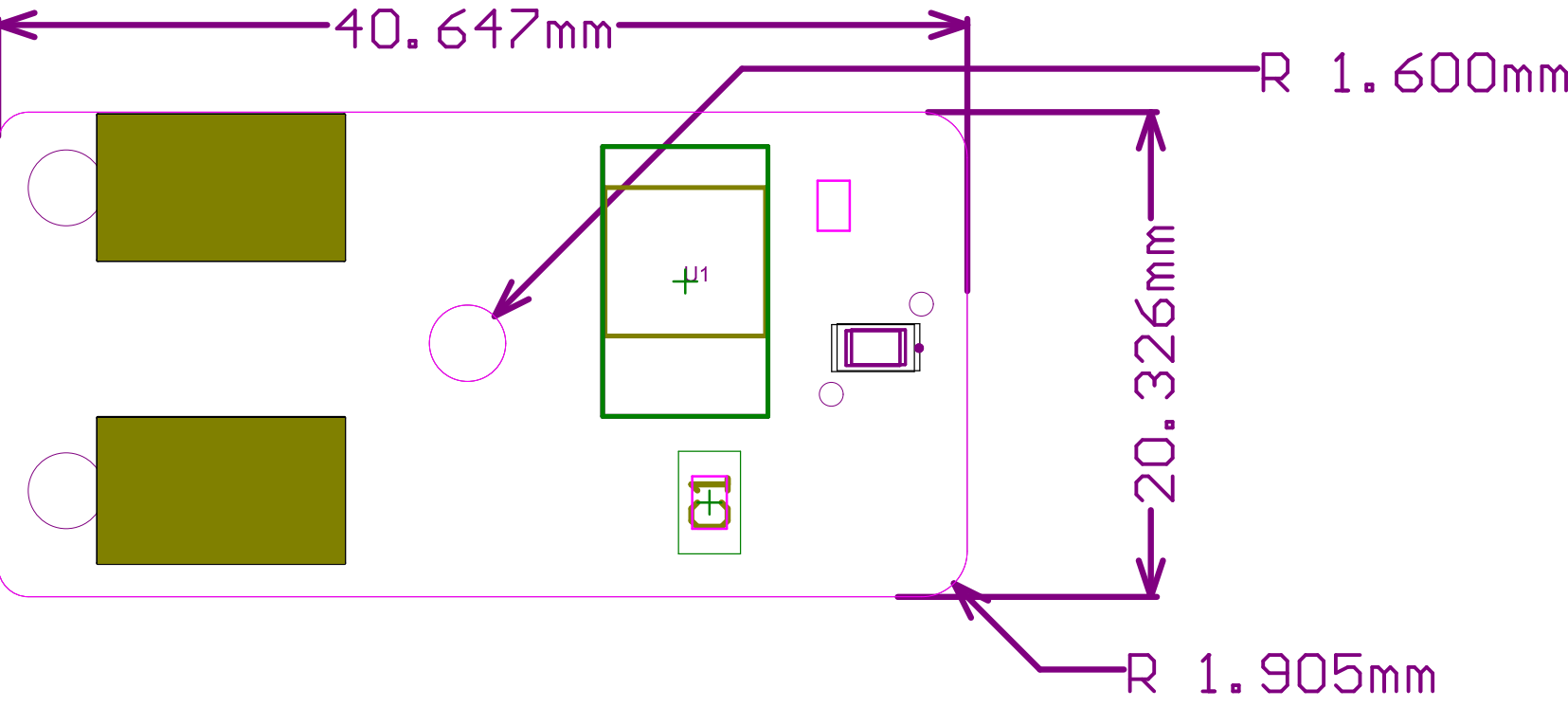
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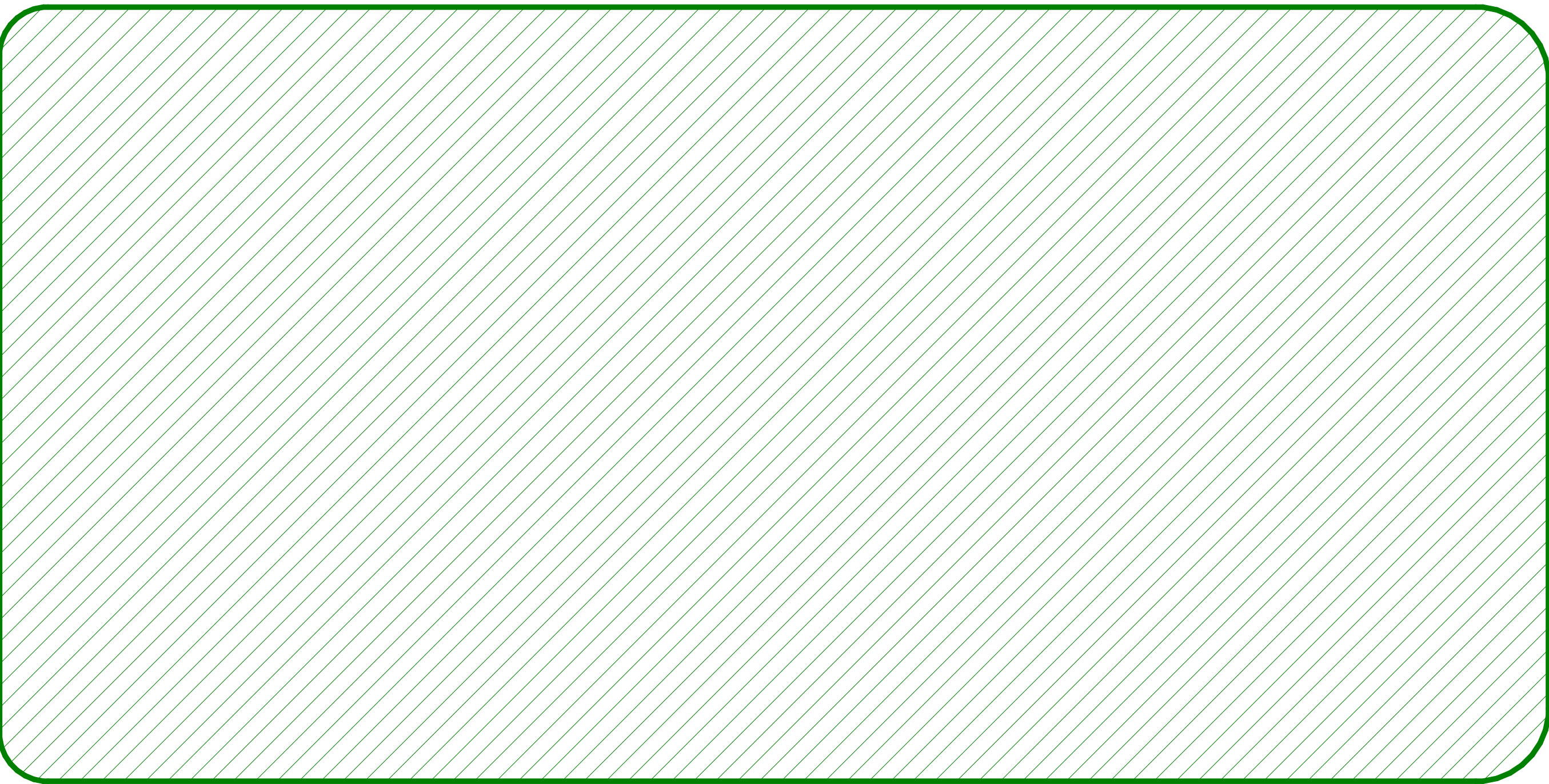


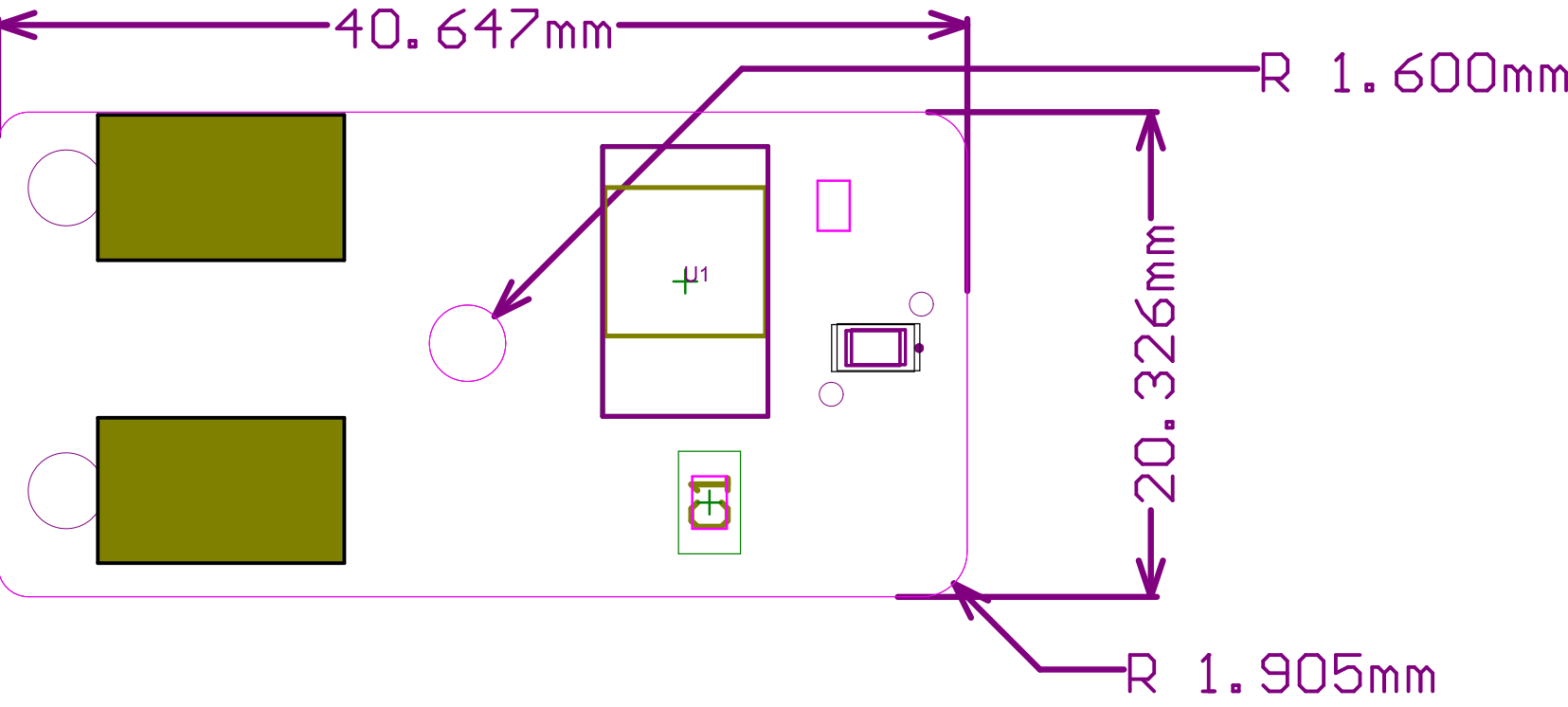
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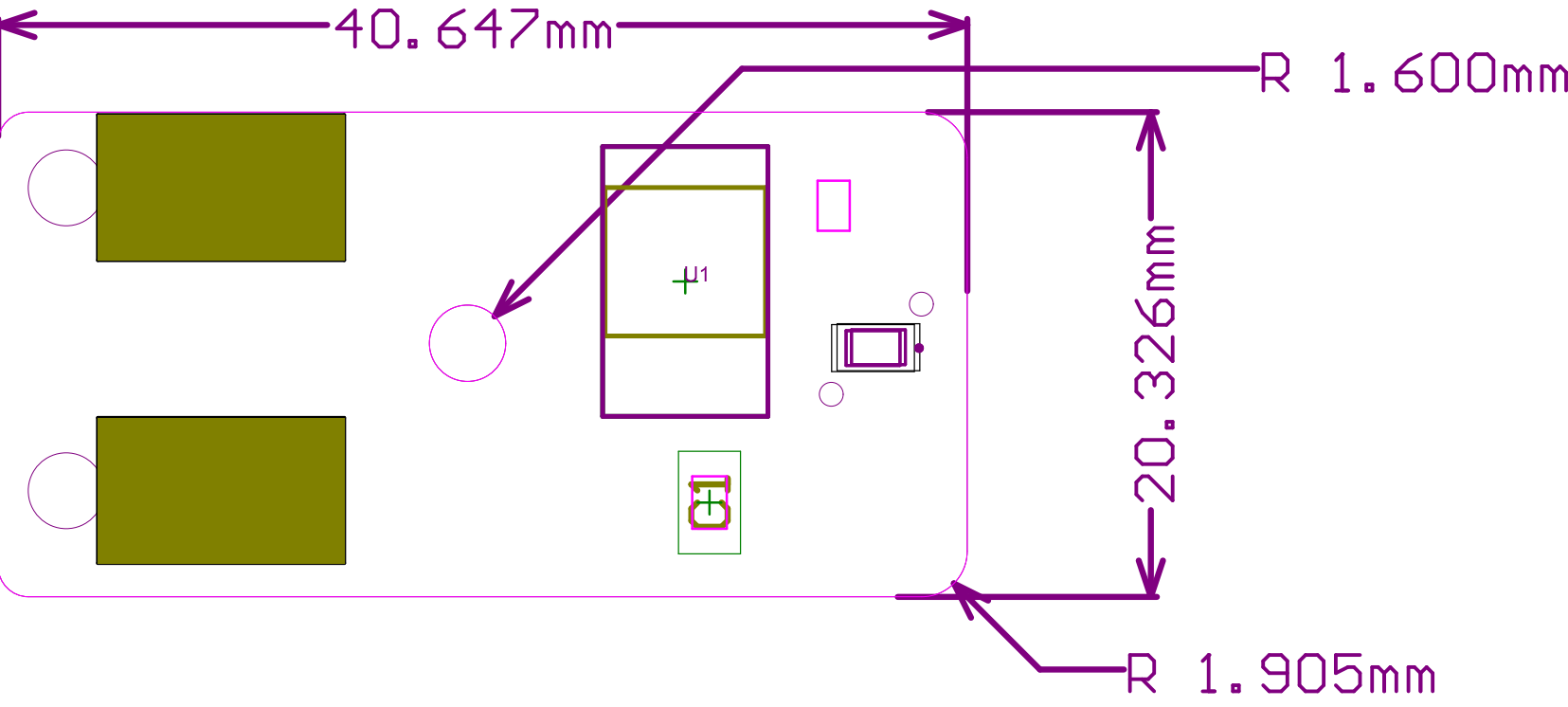
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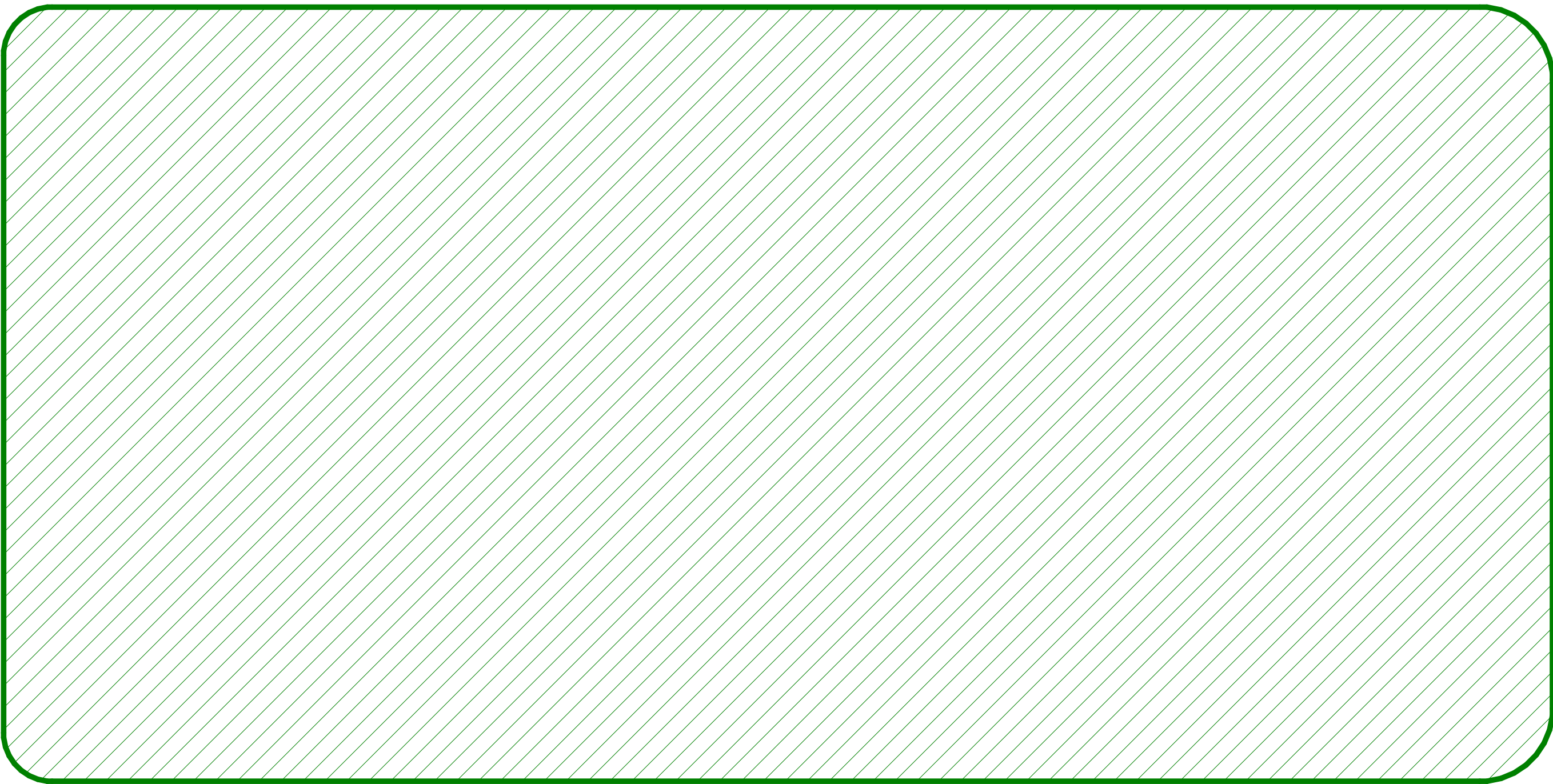


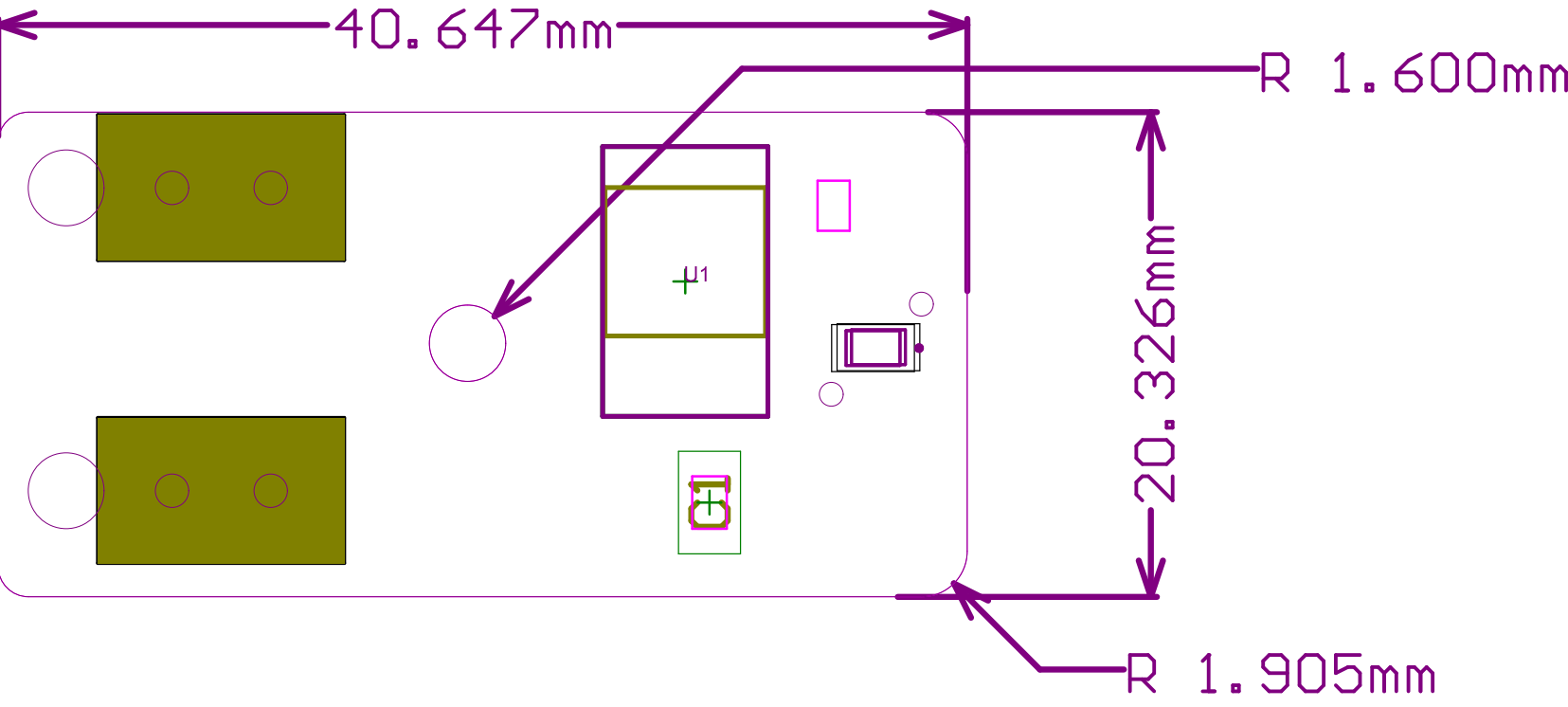
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	Bottom Overlay				



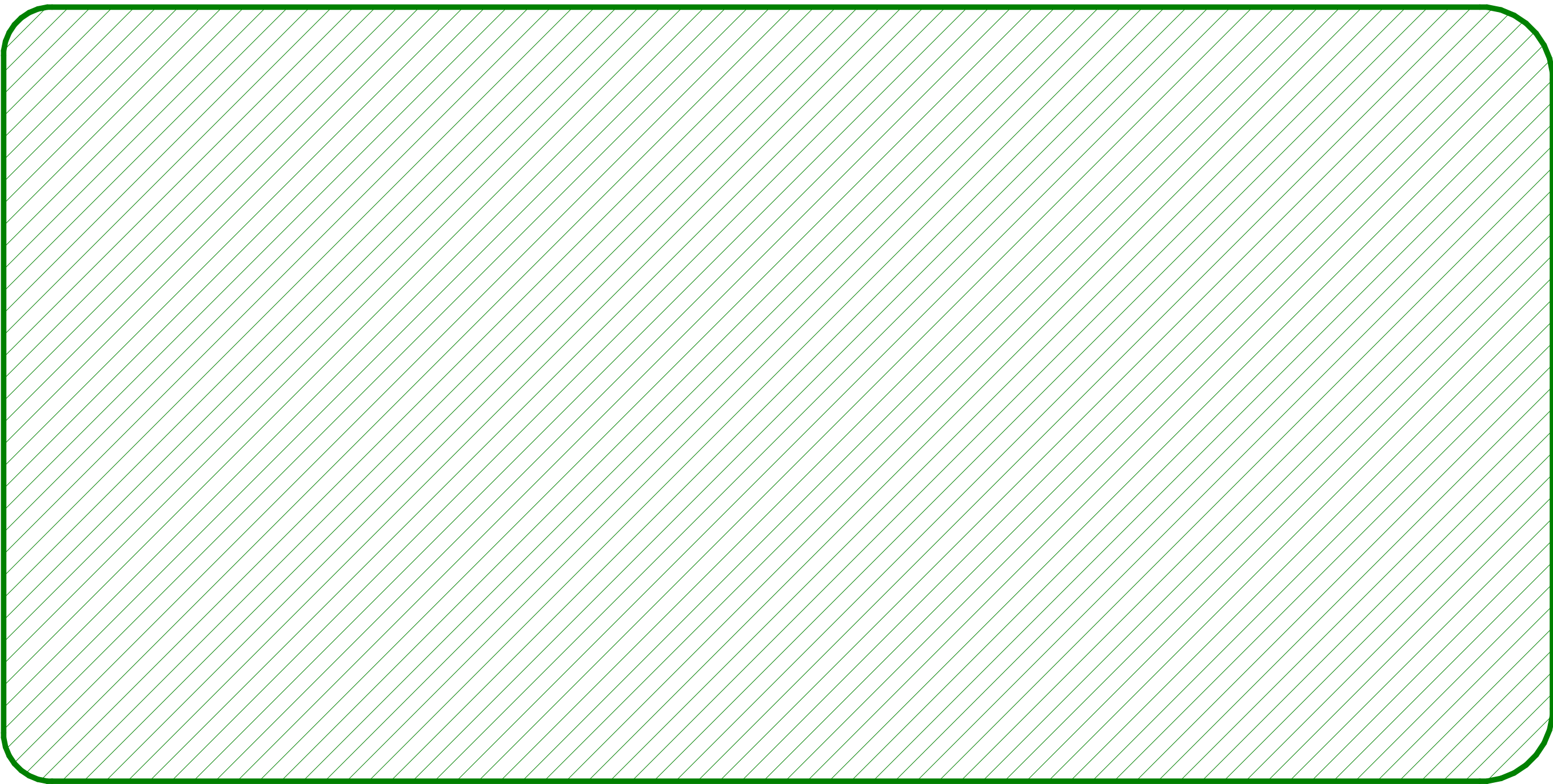


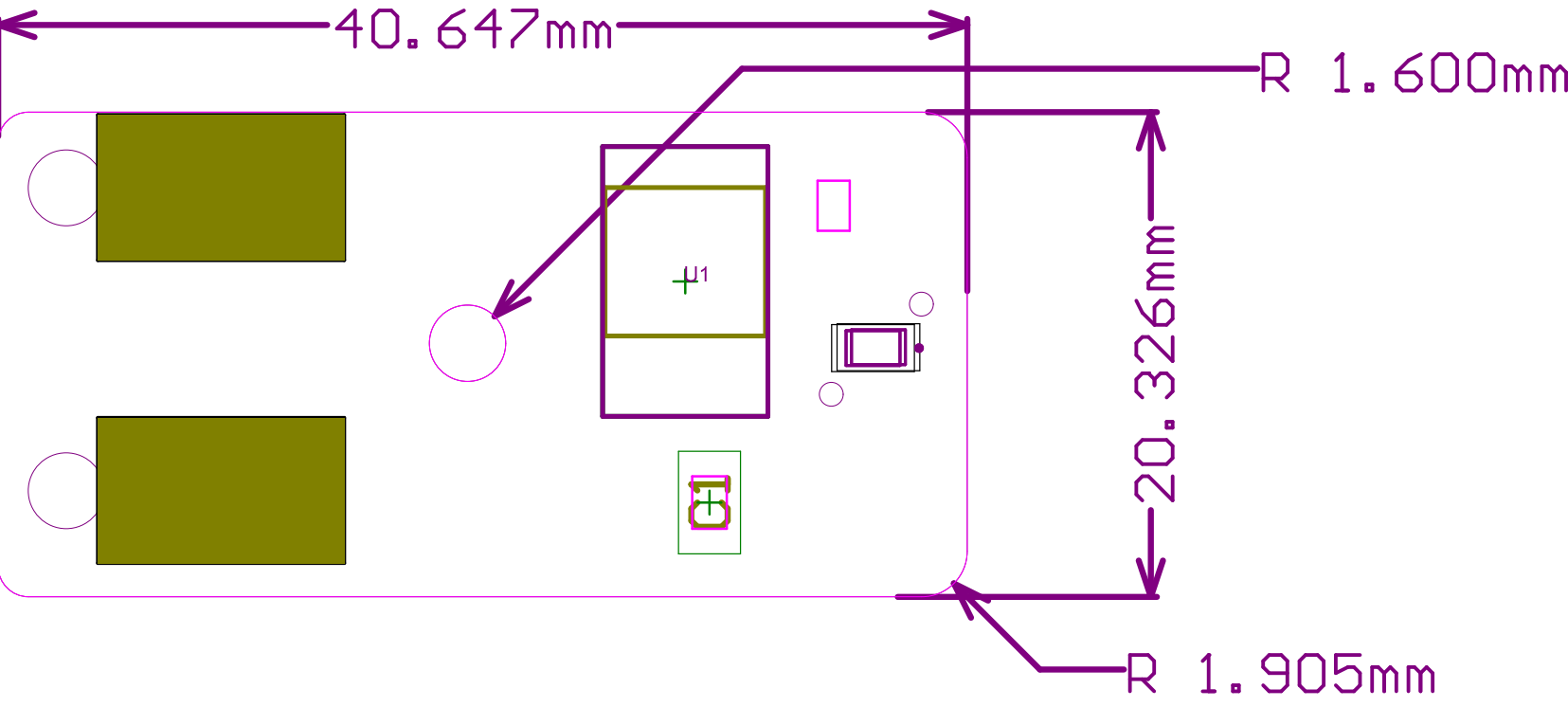
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



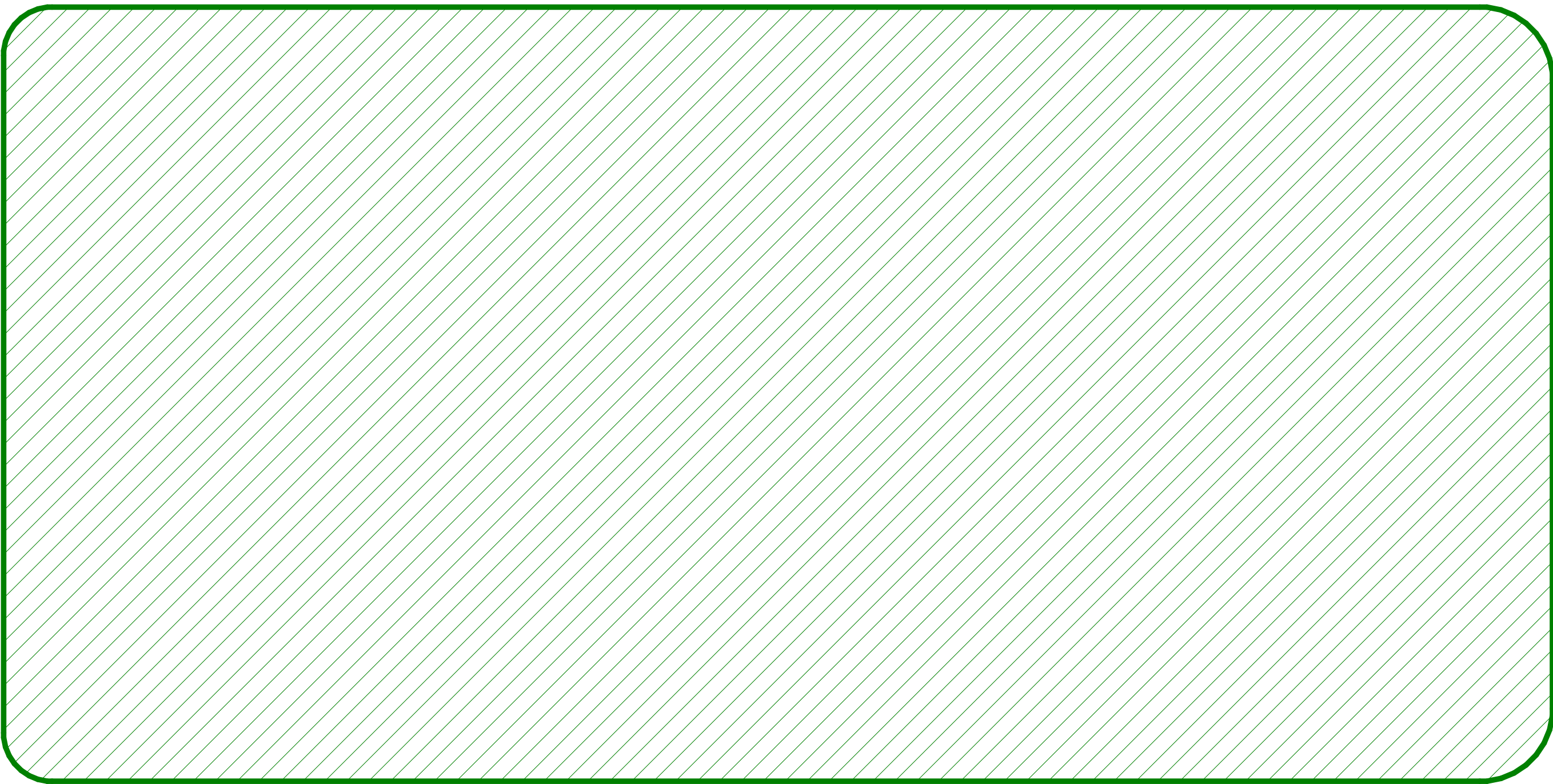


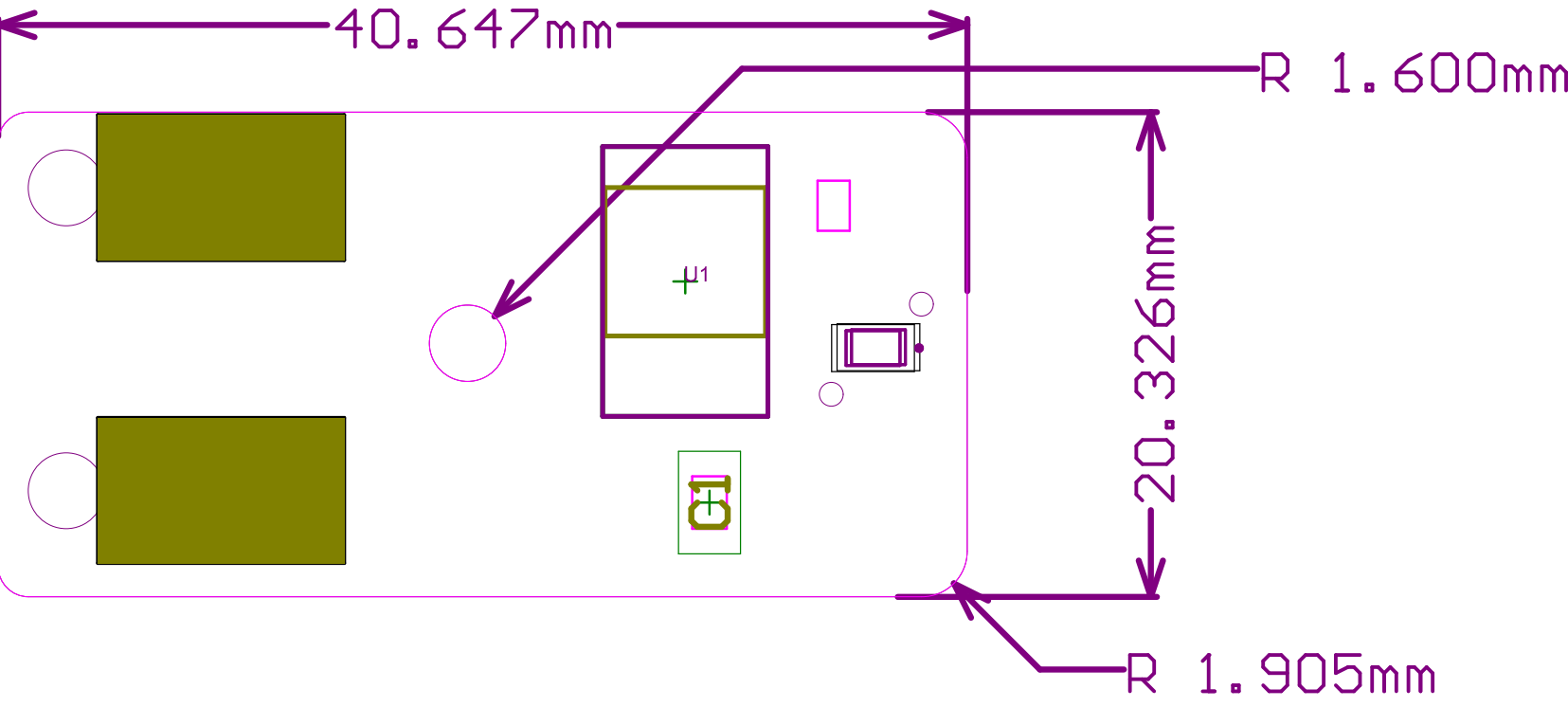
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				





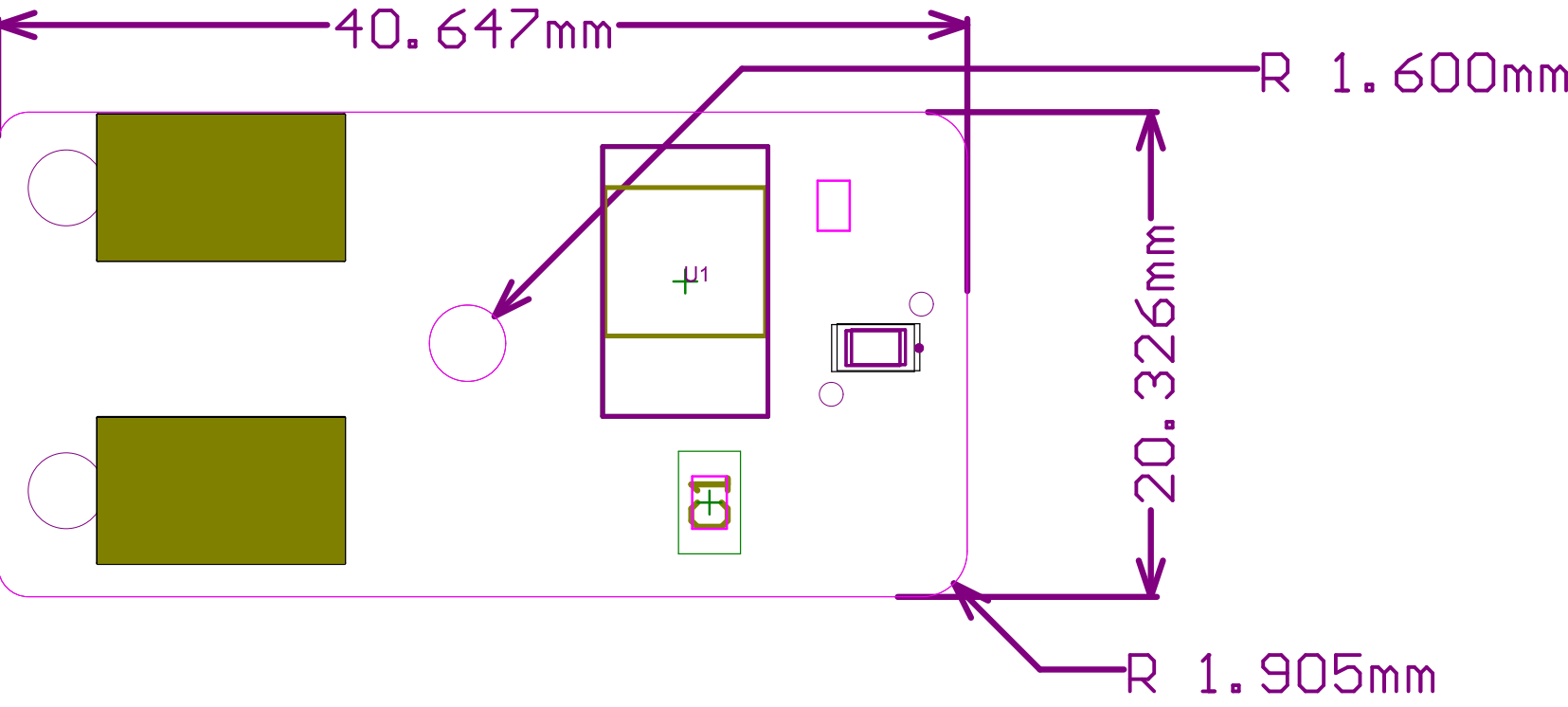
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



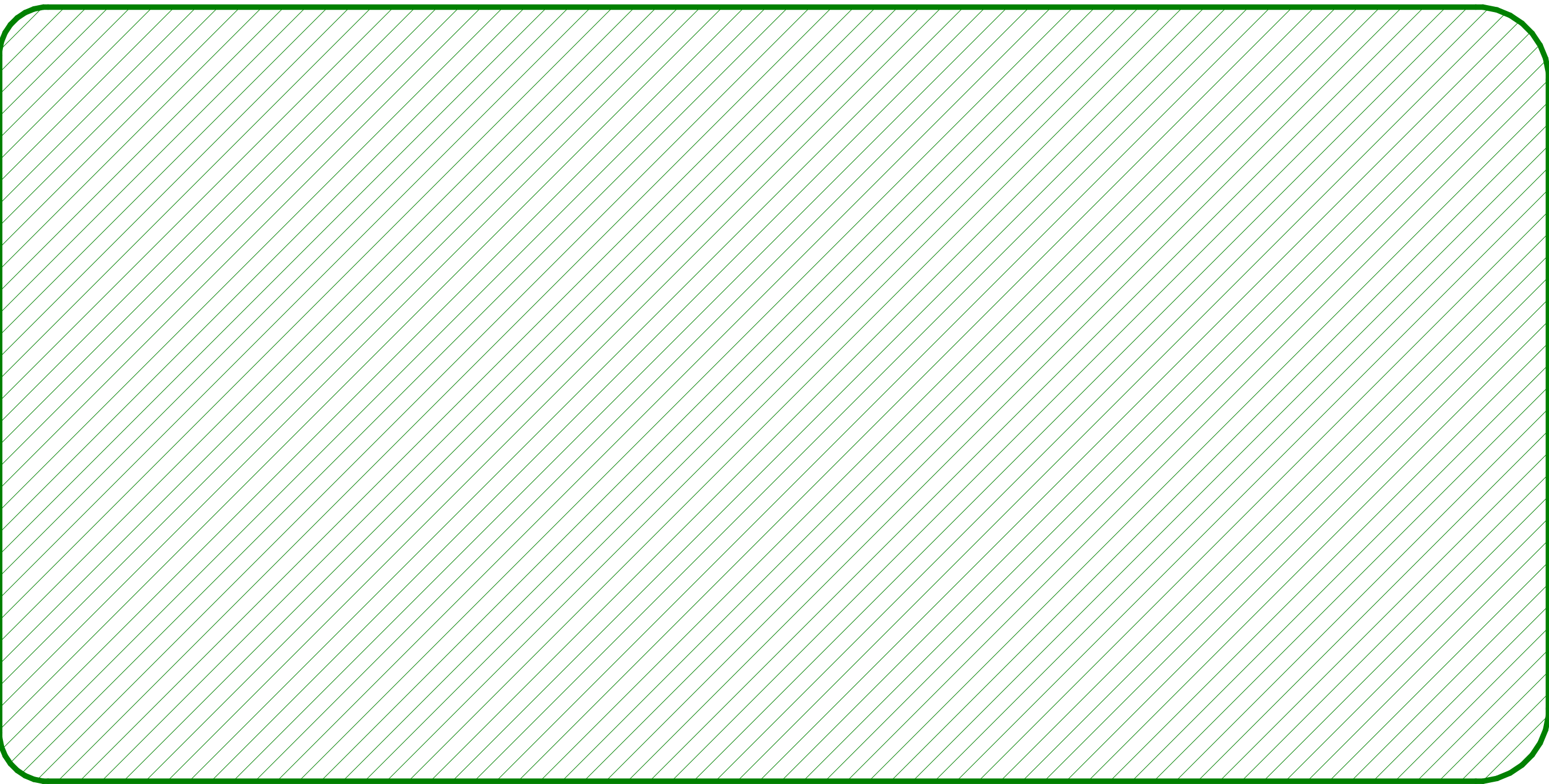


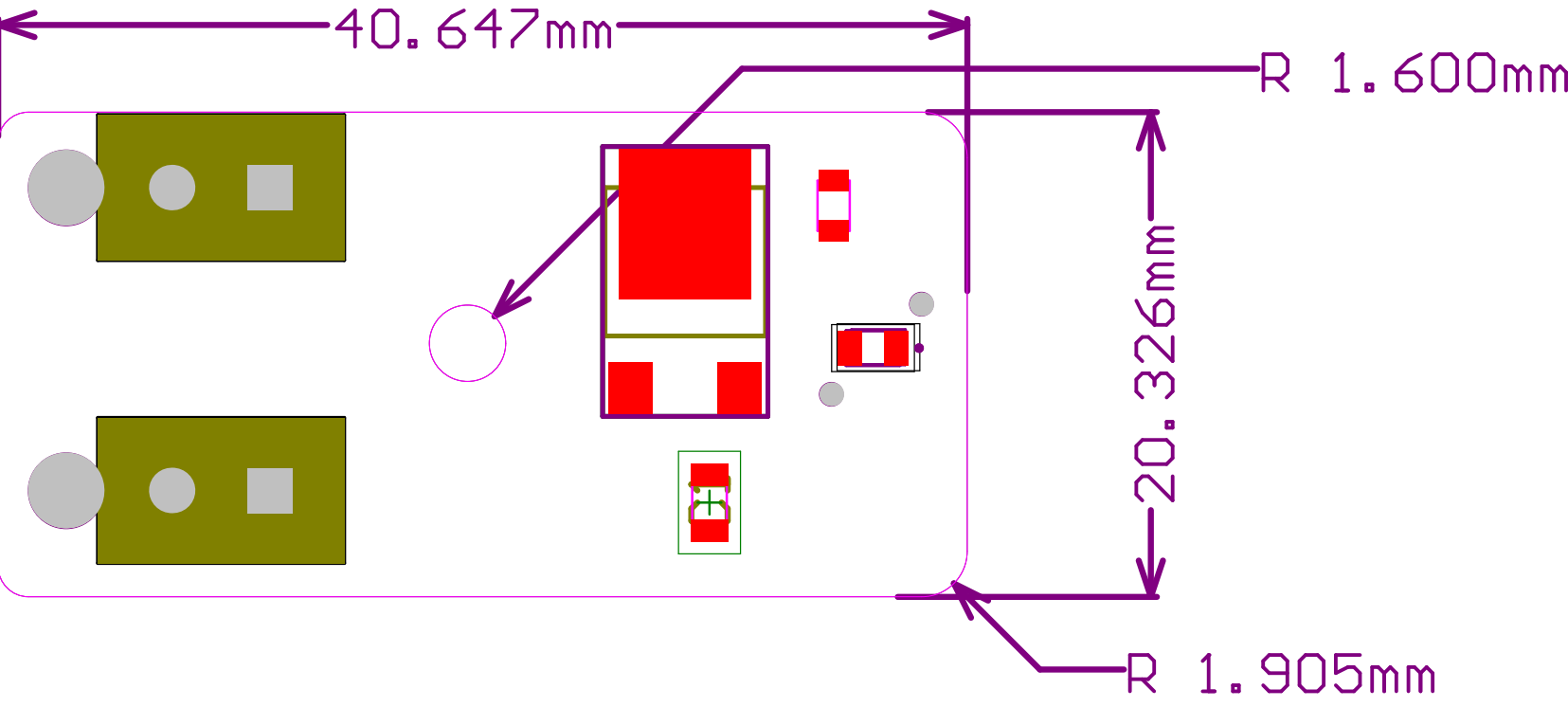
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



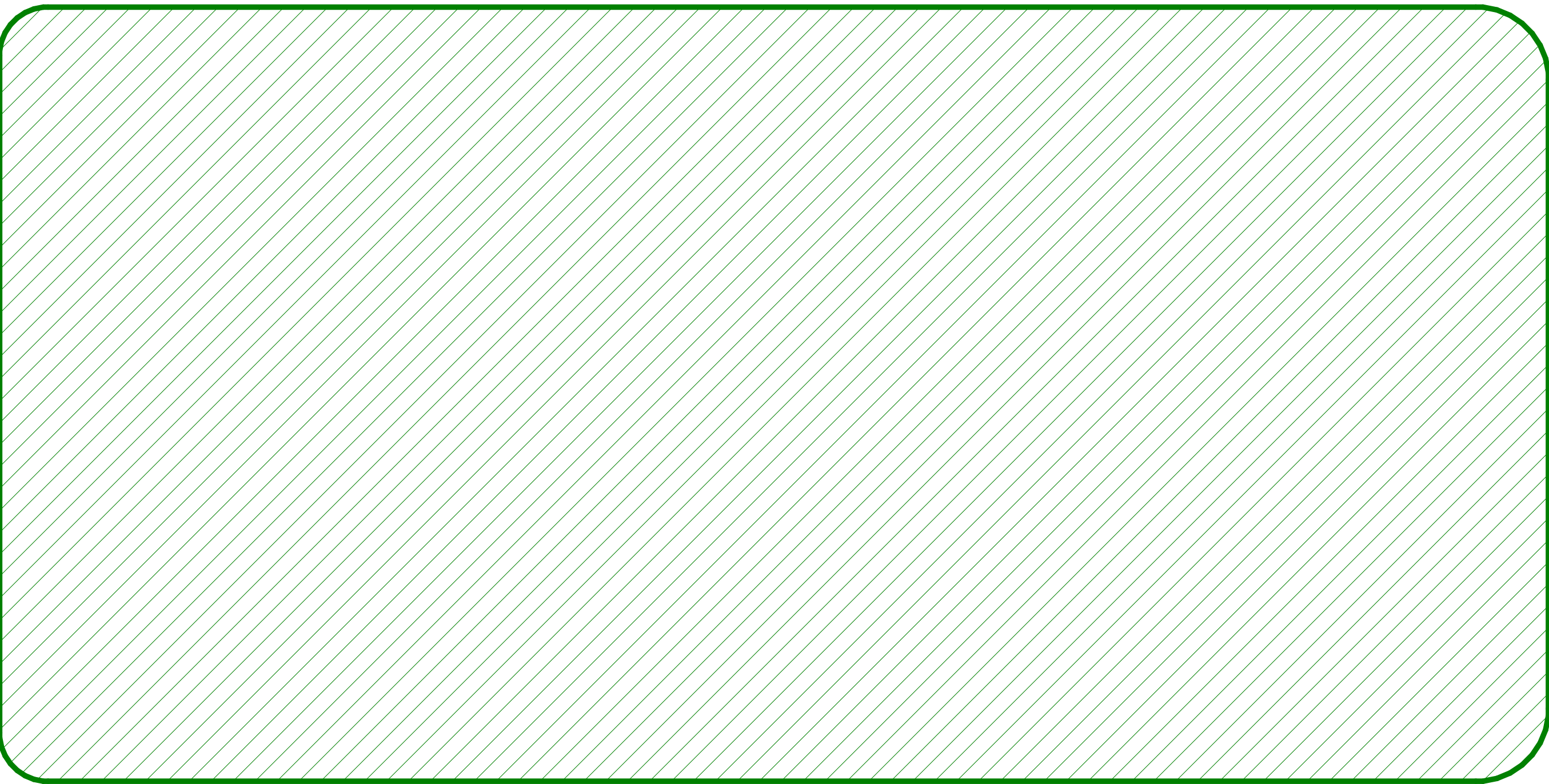


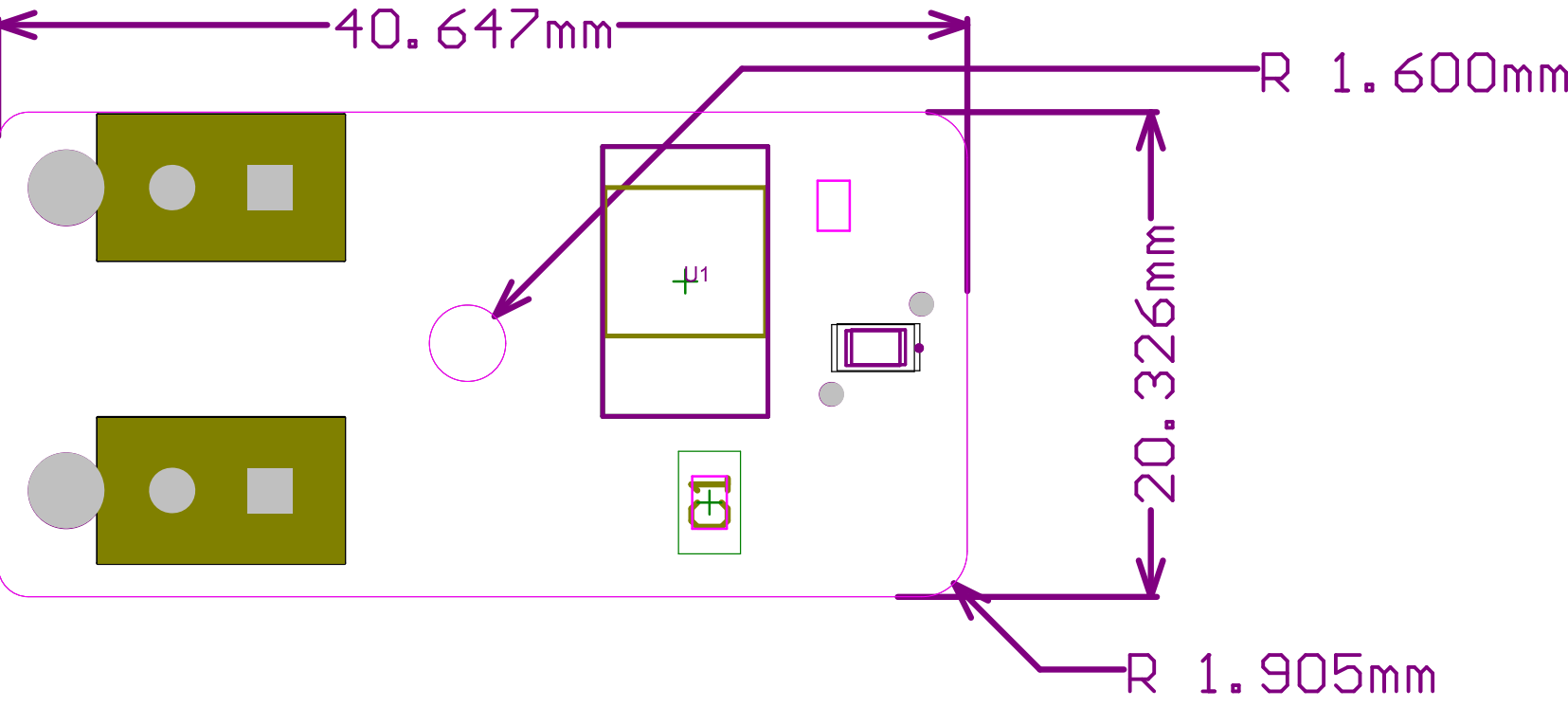
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				





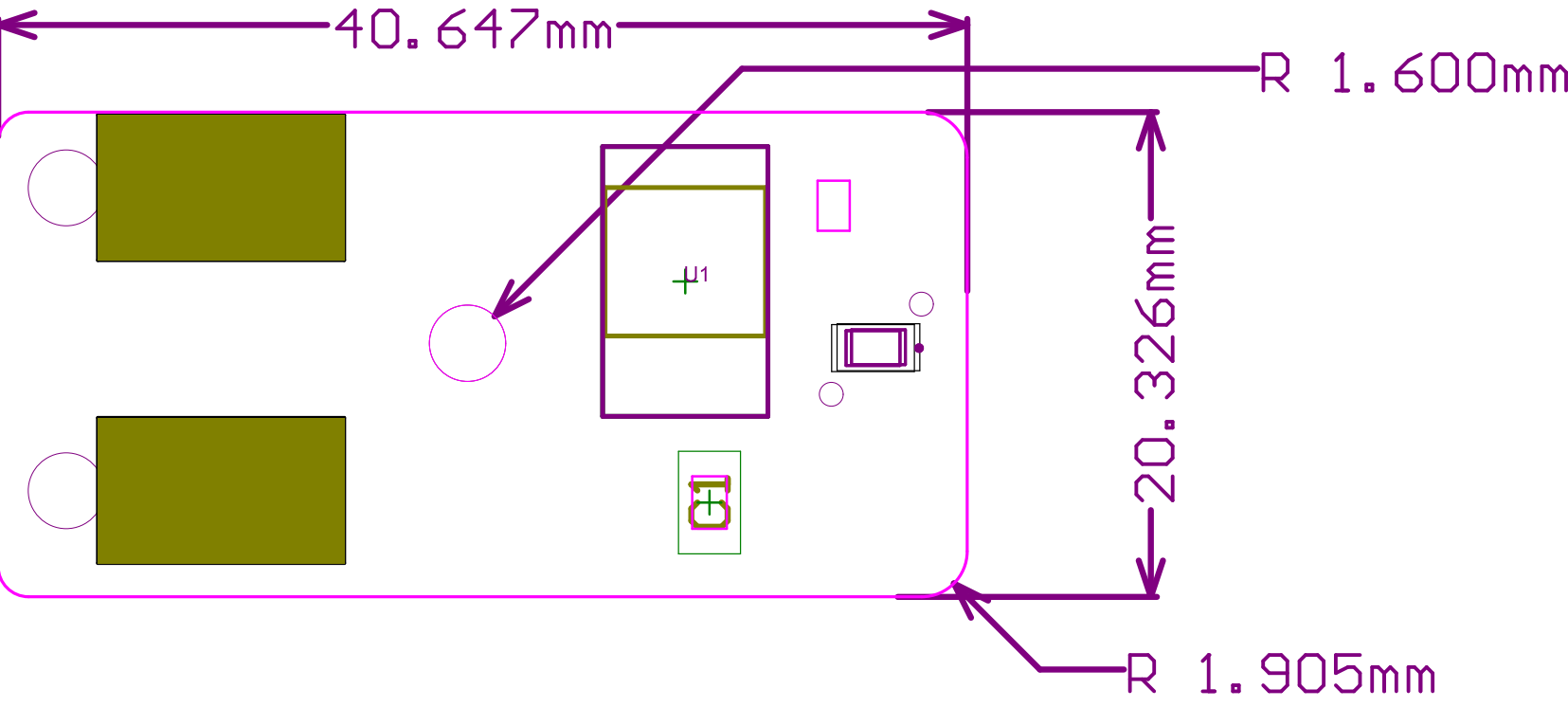
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



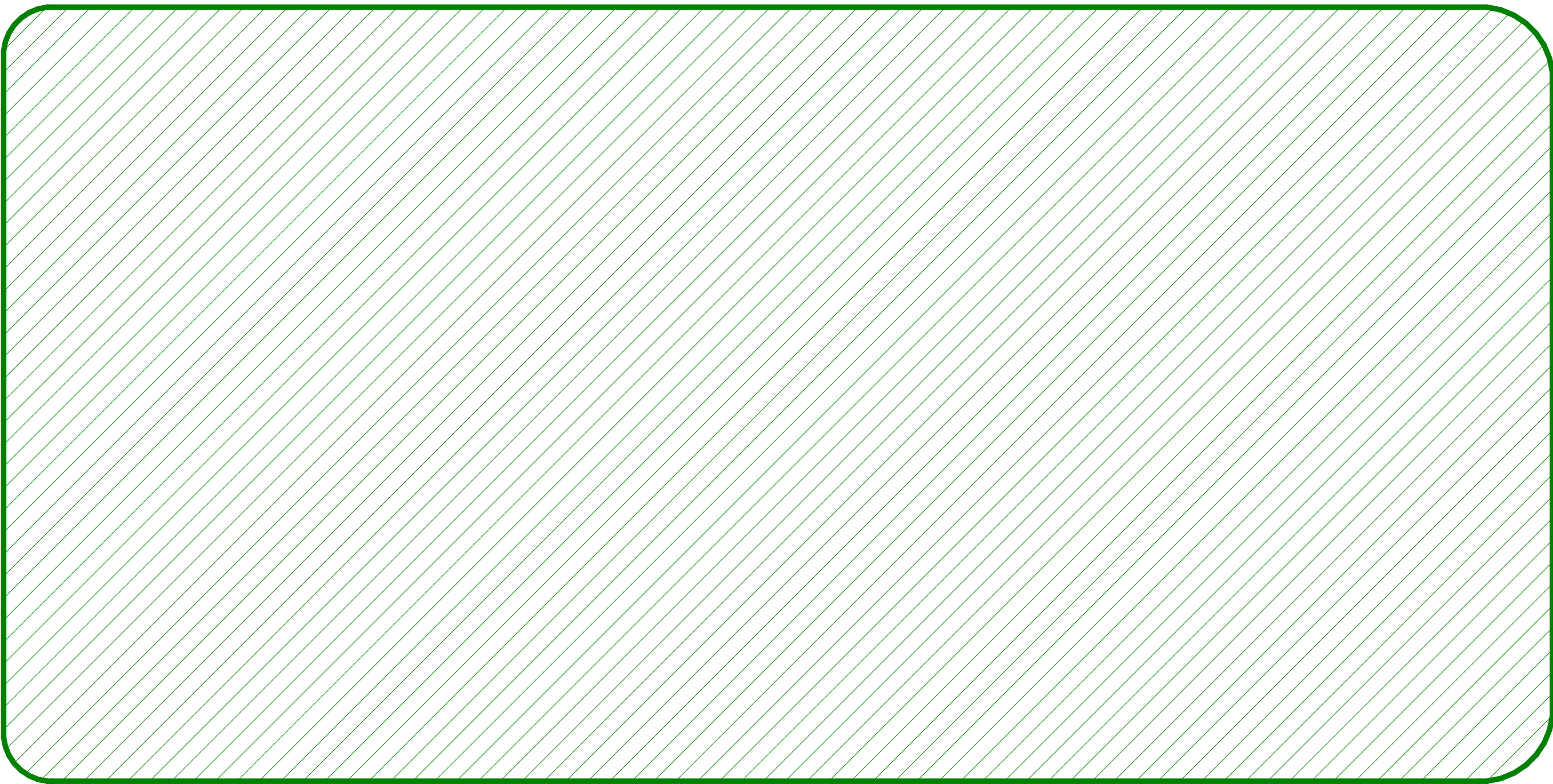


Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



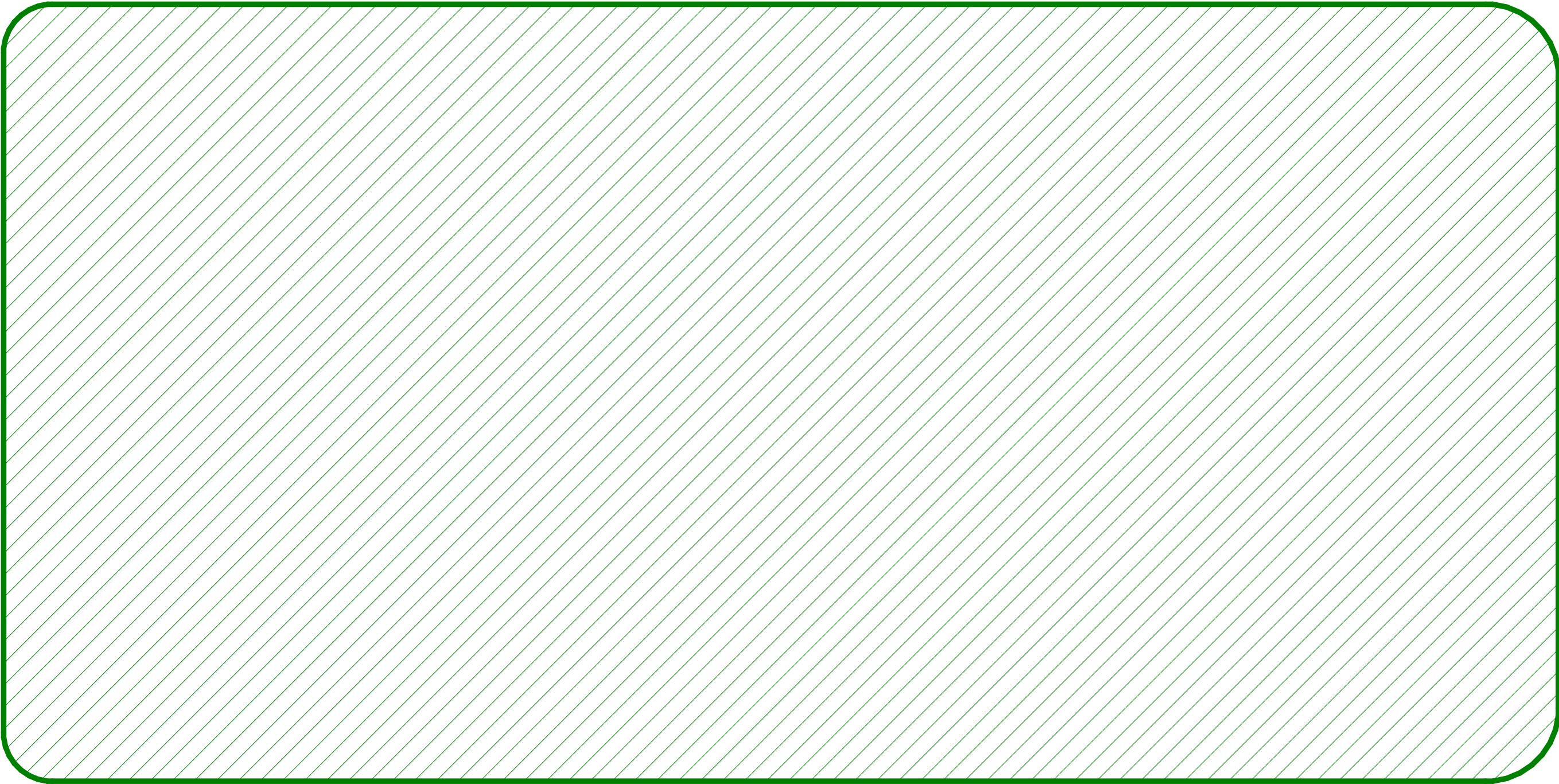
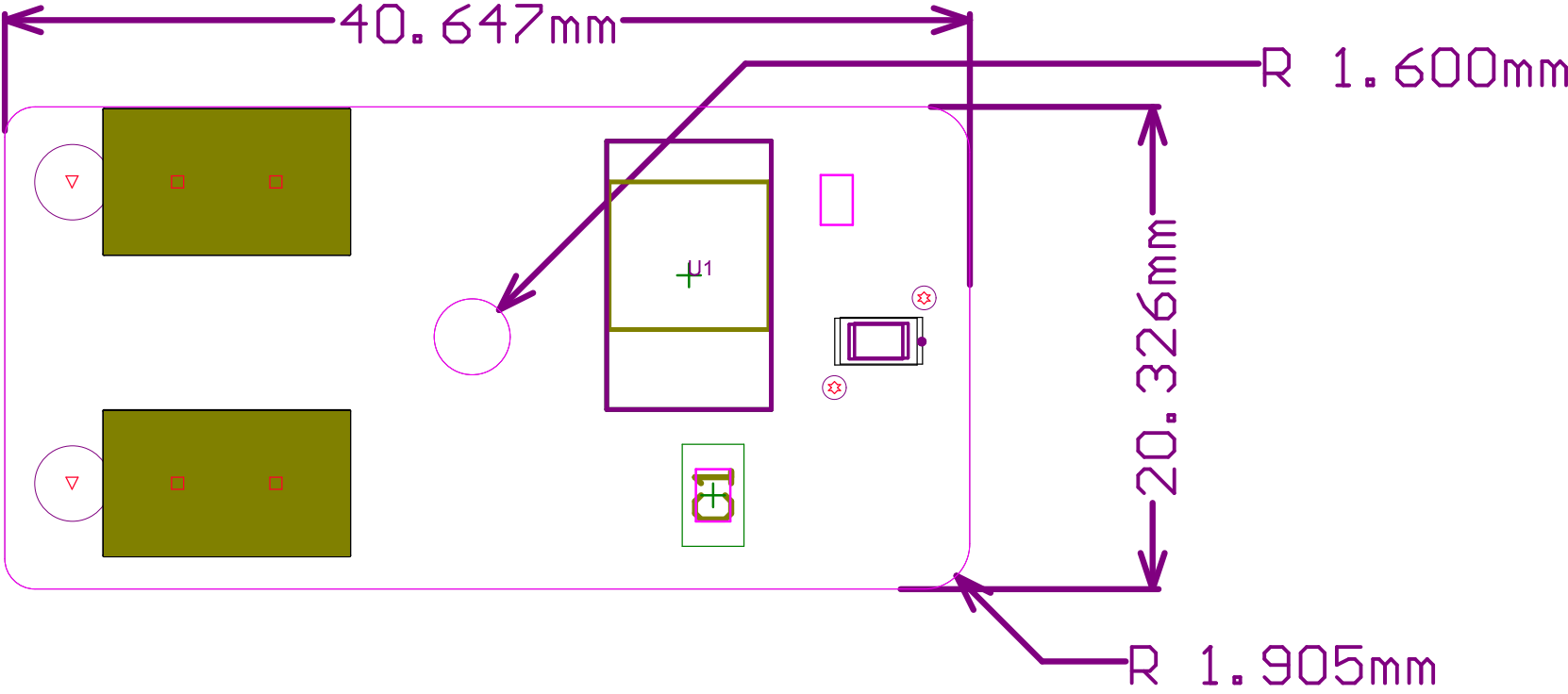


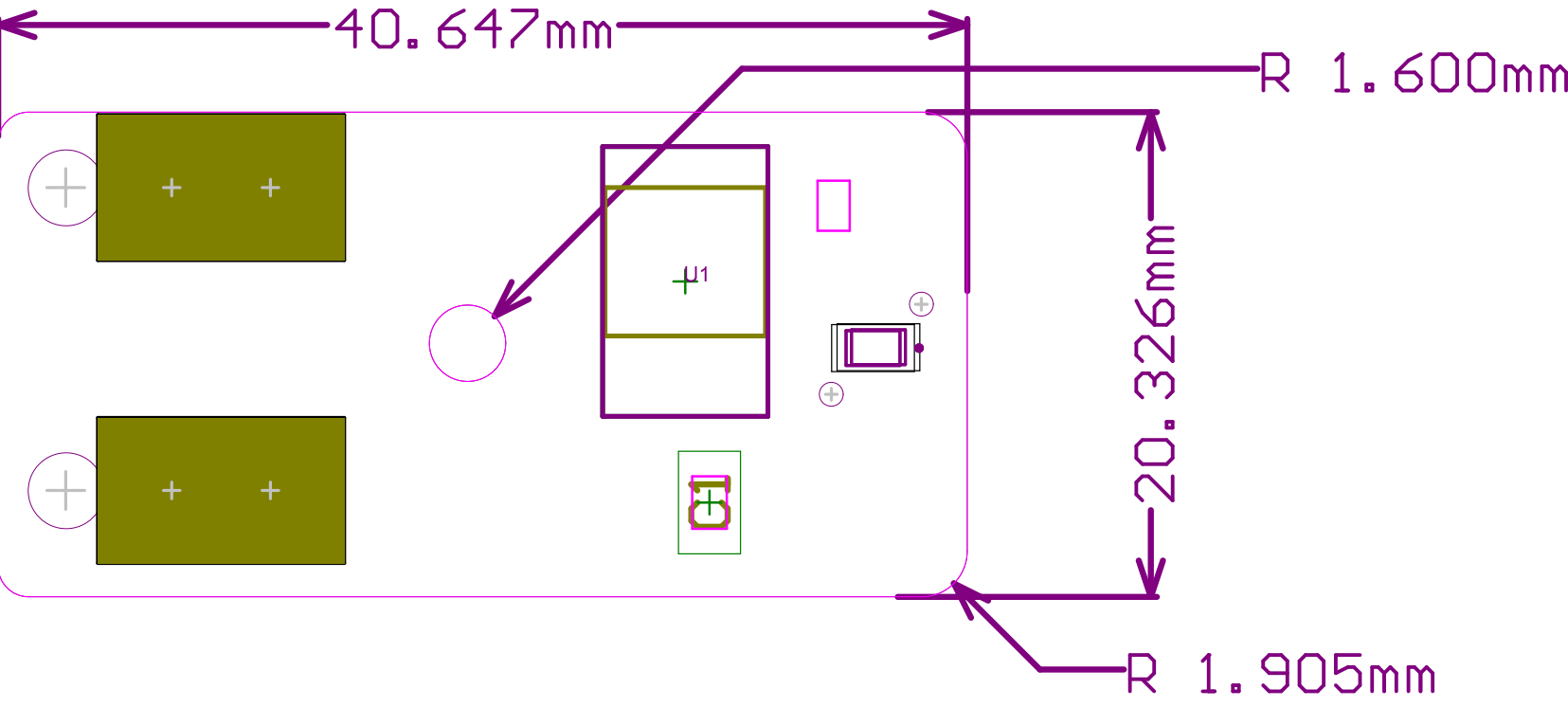
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



Symbol	Count	Hole Size	Plated	Hole Type	Drill Layer Pair	Via/Pad	Pad Shape	Template
☆	2	39.37mil (1.000mm)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c100hn100m0p354
▽	2	125.00mil (3.175mm)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c318hn318
□	4	55.00mil (1.397mm)	PTH	Round	Top Layer - Bottom Layer	Pad	(Mixed)	(Mixed)
	8 Total							

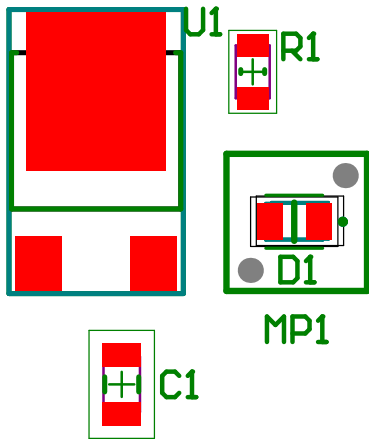
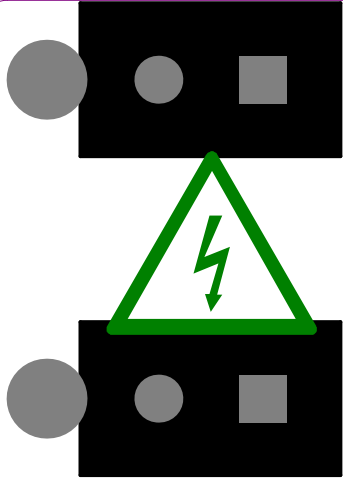
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				

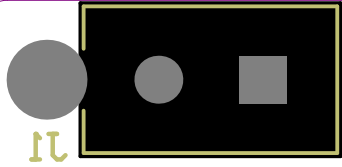




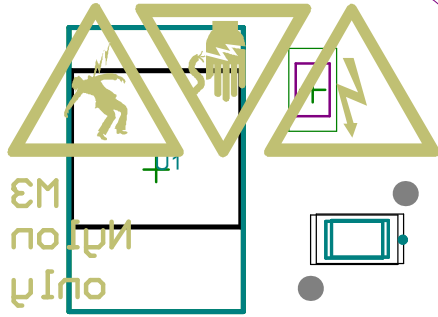
Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	SM-001	1.00mil	4	
1	Top Layer	Copper	1.40mil		
	Dielectric 1	FR-4	56.00mil	4.2	
2	Bottom Layer	Copper	1.40mil		
	Bottom Solder	SM-001	1.00mil	4	
	Bottom Overlay				



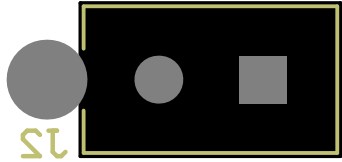




+ VH

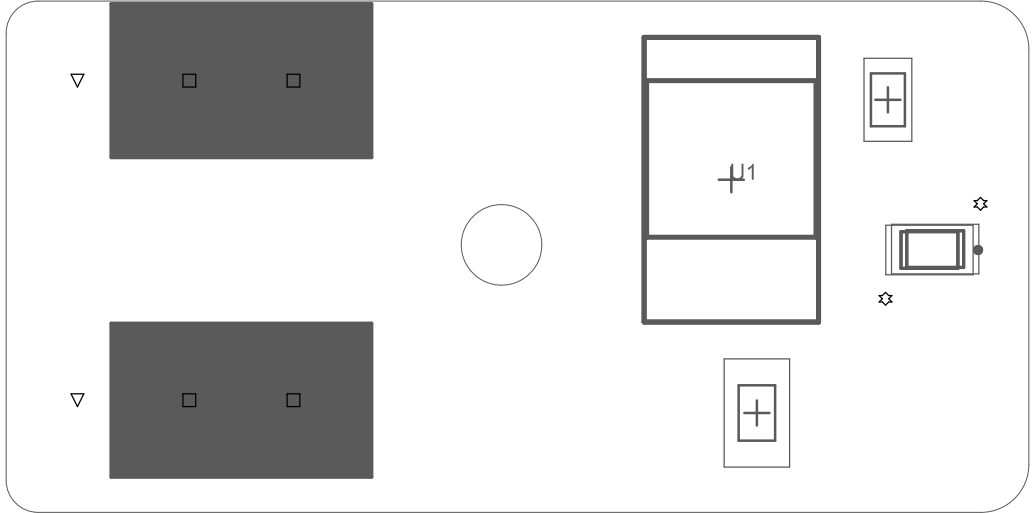


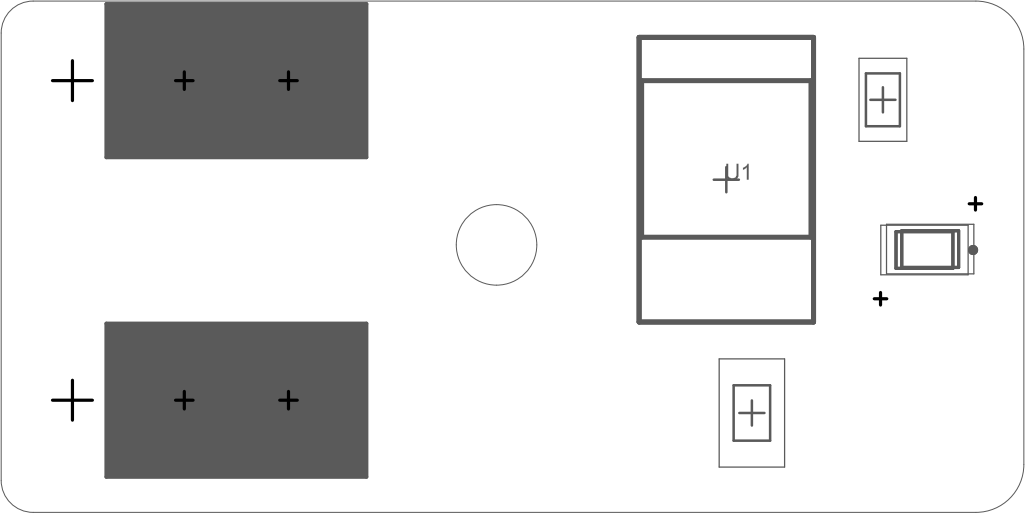
- VH












akatz3@gmail.com
Andrew Katz
HV Indicator

Symbol	Count	Hole Size	Plated	Hole Type	Drill Layer Pair	Via/Pad	Pad Shape	Template
☆	2	39.37mil (1.000mm)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c100hn100m0p354
▽	2	125.00mil (3.175mm)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c318hn318
□	4	55.00mil (1.397mm)	PTH	Round	Top Layer - Bottom Layer	Pad	(Mixed)	(Mixed)
	8 Total							





Board Stack Report

Stack Up		Layer Stack			
Layer	Board Layer Stack	Name	Material	Thickness	Constant
1		Top Paste			
2		Top Overlay			
3		Top Solder	SM-001	1.00mil	4
4		Top Layer	Copper	1.40mil	
5		Dielectric 1	FR-4	56.00mil	4.2
6		Bottom Layer	Copper	1.40mil	
7		Bottom Solder	SM-001	1.00mil	4
8		Bottom Overlay			
9		Bottom Paste			
	Height : 60.80mil				

Name	Description	Designator	Footprint	Quantity	Manufacturer Part Number 1
1-172165-2	2 Position Rectangular Housing Connector Plug Red 0.163" (4.14mm)	P1		1	1-172165-2
1-172165-9	2 Position Rectangular Housing Connector Plug Black 0.163" (4.14mm)	P2		1	1-172165-9
1-770872-0	Connector Header Through Hole 2 position 0.163" (4.14mm)	J1, J2	CON2_1X2_P163_VM	2	1-770872-0
C2012X7S2A105K125AB	Chip Capacitor, 1 uF, +/- 10%, 100 V, -55 to 125 degC, 0805 (2012 Metric), RoHS, Tape and Reel	C1	CAPC2013X145X20ML20	1	C2012X7S2A105K125AB
770904-1	Socket Contact Crimp 18-22 AWG Stamped	PIN1, PIN2, PIN3, PIN4		4	770904-1
KTR10EZPF40R2	40.2 Ohms \pm 1% 0.125W, 1/8W Chip Resistor 0805 (2012 Metric) Automotive AEC-Q200, High Voltage Thick Film	R1	RESC2012X06N_HV	1	KTR10EZPF40R2
LPA-C011301S-10	Light Pipe Single Clear Rigid Round with Flat Top, 3mm Board Mount, Press Fit	MP1	LPA-C011301S-10	1	LPA-C011301S-10
LR8K4-G	Linear Voltage Regulator IC Positive Adjustable 1 Output 10mA TO-252, (D-Pak)	U1	Microchip_C04-189_MFG	1	LR8K4-G
SM0805HCL	Red 631nm LED Indication - Discrete 1.9V 0805 (2012 Metric)	D1	LEDC2012X135N_SMO805UGC(Primary)	1	SM0805HCL

Design Rules Verification Report

Filename : C:\git\AERO_2019-2020\60V_IND\Altium\60V_Ind.PcbDoc

Warnings 0
Rule Violations 0

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=20mil) (All),(All)	0
Clearance Constraint (Gap=118.11mil) (InNetClass('TS')),(InNetClass('TS'))	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Un-Routed Net Constraint (All)	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Creepage Distance Constraint =(40mil) (InNetClass('TS')),(InNetClass('TS'))	0
Width Constraint (Min=10mil) (Max =60mil) (Preferred=10mil) (All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=20mil) (Conductor Width=10mil) (Air Gap=10mil) (Entries=4)	0
Hole Size Constraint (Min=1mil) (Max=500mil) (All)	0
Hole To Hole Clearance (Gap=10mil) (All),(All)	0
Minimum Solder Mask Sliver (Gap=10mil) (All),(All)	0
Silk To Solder Mask (Clearance=5mil) (IsPad),(All)	0
Silk to Silk (Clearance=5mil) (All),(All)	0
Net Antennae (Tolerance=0mil) (All)	0
Height Constraint (Min=0mil) (Max =1000mil) (Preferred=500mil) (All)	0
Total	0

Electrical Rules Check Report

Class	Document	Message
		Successful Compile for