2303081427 Package Materials Update for Si4x5x & Si4x6x in ASECL

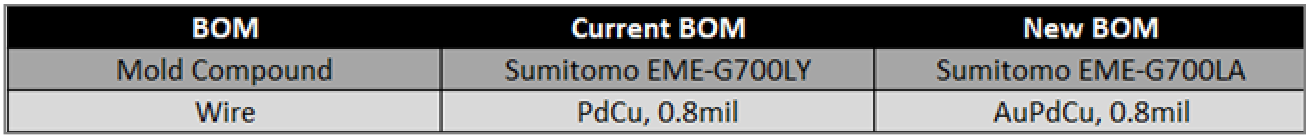
PCN Issue Date: Mar 08, 2023 **Effective Date:** Jun 14, 2023

PCN Type: Assembly

Description of Change

Silicon Labs is pleased to announce the successful qualification of BOM (Bill of Materials) for Si4x5x & Si4x6x, manufactured in ASECL. Details of BOM change are mentioned in the table below. ASECL is an existing Assembly, Test & Shipping site for this product.

As of the effective date of this PCN, Silicon Labs will fulfill orders from either the existing or new BOM. Once the current BOM is depleted, orders will be fulfilled from the new BOM.



BOM	Current BOM	New BOM
Mold Compound	Sumitomo EME-G700LY	Sumitomo EME-G700LA
Wire	PdCu, 0.8mil	AuPdCu, 0.8mil

Reason for Change

New BOM for supply continuity.

Impact on Form, Fit, Function, Quality, Reliability

No impact on Form, Fit, Function, Quality, Reliability.

Product Identification

This notification includes both standard and customer-specific part numbers. An asterisk * represents a number or letter (one or more) in a customer-specific part number.

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Existing Part #
SI4055-C2A-GM
SI4055-C2A-GMR
SI4060-C2A-GM
SI4060-C2A-GMR
SI4063-C2A-GM
SI4063-C2A-GMR
SI4355-C2A-GM
SI4355-C2A-GMR
SI4362-C2A-GM
SI4362-C2A-GMR
SI4438-C2A-GM
SI4438-C2A-GMR
SI4455-C2A-GM
SI4455-C2A-GMR
SI4460-C2A-GM
SI4460-C2A-GMR
SI4461-C2A-GM
SI4461-C2A-GMR
SI4463-C2A-GM
SI4463-C2A-GMR
SI4463-C2A-*M0
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SI4463-C2A-*M0R
SI4463M*CGM
SI4463M*CGMR
SI4467-A2A-IM
SI4467-A2A-IMR
SI4468-A2A-IM
SI4468-A2A-IMR
```

Last Date of Unchanged Product: Jun 14, 2023

Qualification Samples

Available upon request.

Customer Response

Lack of acknowledgment of the PCN within 30 days constitutes acceptance of the change, Ref. JEDEC-J-STD-046.

To request further data or inquire about this notification, please contact your Silicon Labs sales representative. A list of Silicon Labs sales representatives is available at http://www.silabs.com.

Customers may approve early PCN acceptance by emailing approval, along with PCN # to PCNEarlyAcceptance@silabs.com

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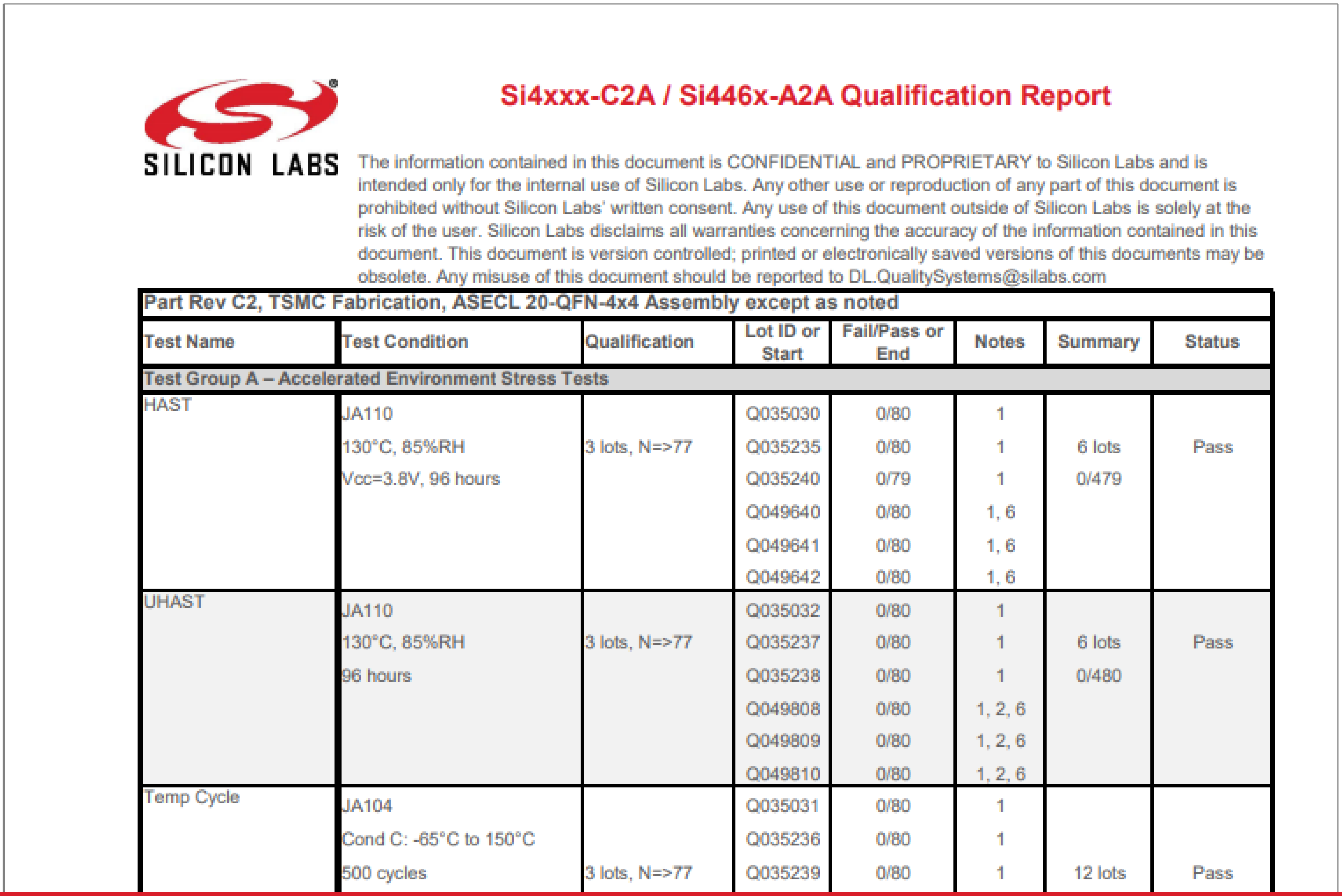
Qualification Data

Qualification report is attached.



Si4xxx-C2A / Si446x-A2A Qualification Report

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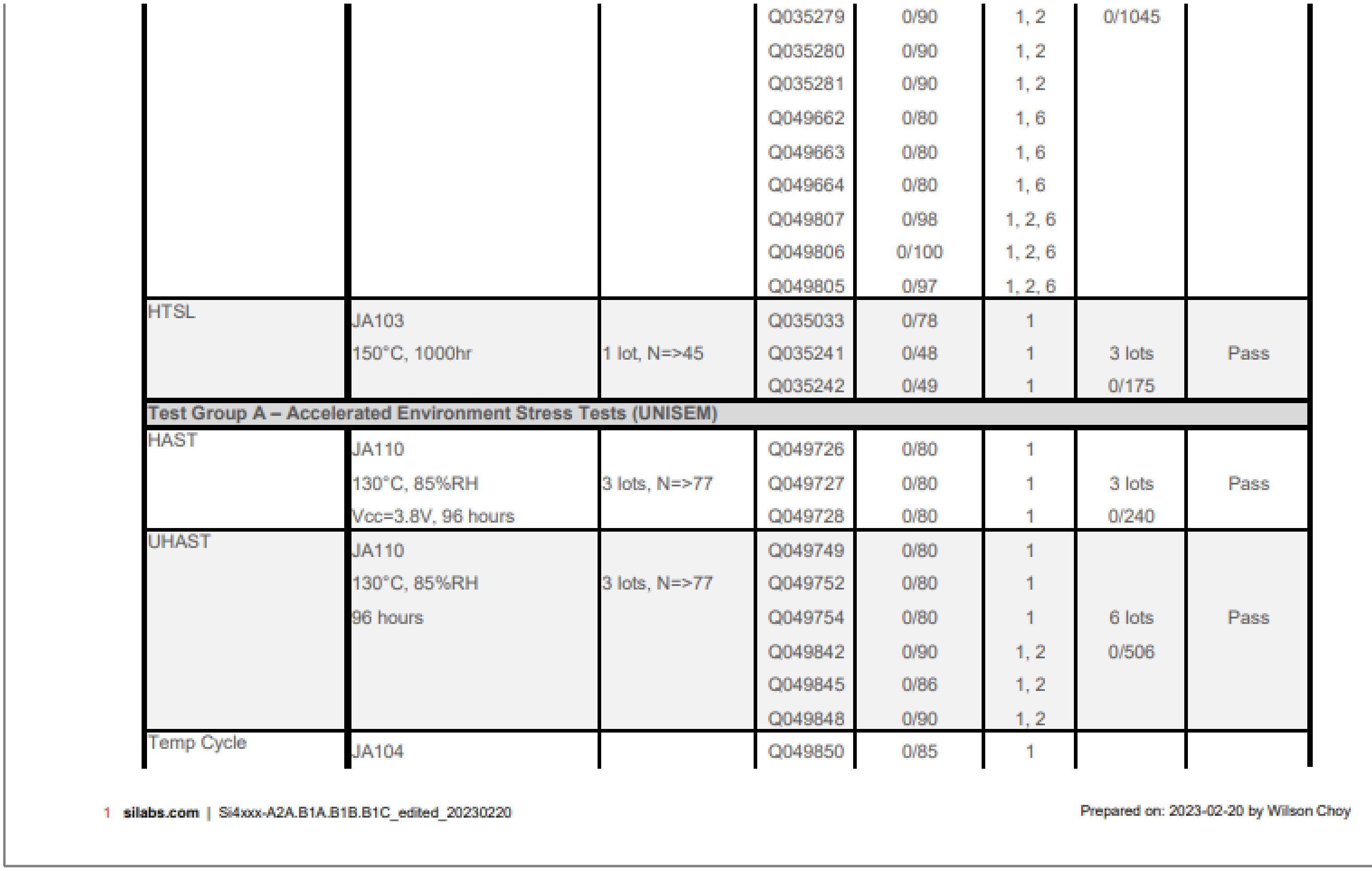
Part Rev C2, TSMC Fabrication, ASECL 20-QFN-4x4 Assembly except as noted

Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
Test Group A – Accelerated Environment Stress Tests							
HAST	JA110		Q035030	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q035235	0/80	1	6 lots	Pass
	Vcc=3.8V, 96 hours		Q035240	0/79	1	0/479	
			Q049640	0/80	1, 6		
			Q049641	0/80	1, 6		
			Q049642	0/80	1, 6		
UHAST	JA110		Q035032	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q035237	0/80	1	6 lots	Pass
	96 hours		Q035238	0/80	1	0/480	
			Q049808	0/80	1, 2, 6		
			Q049809	0/80	1, 2, 6		
			Q049810	0/80	1, 2, 6		
Temp Cycle	JA104		Q035031	0/80	1		
	Cond C: -65°C to 150°C		Q035236	0/80	1		
	500 cycles	3 lots, N=>77	Q035239	0/80	1	12 lots	Pass



			Q035279	0/90	1, 2	0/1045	
			Q035280	0/90	1, 2		
			Q035281	0/90	1, 2		
			Q049662	0/80	1, 6		
			Q049663	0/80	1, 6		
			Q049664	0/80	1, 6		
			Q049807	0/98	1, 2, 6		
			Q049806	0/100	1, 2, 6		
			Q049805	0/97	1, 2, 6		
HTSL	JA103		Q035033	0/78	1		
	150°C, 1000hr	1 lot, N=>45	Q035241	0/48	1	3 lots	Pass
			Q035242	0/49	1	0/175	
Test Group A – Accelerated Environment Stress Tests (UNISEM)							
HAST	JA110		Q049726	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q049727	0/80	1	3 lots	Pass
	Vcc=3.8V, 96 hours		Q049728	0/80	1	0/240	
UHAST	JA110		Q049749	0/80	1		
	130°C, 85%RH	3 lots, N=>77	Q049752	0/80	1		
	96 hours		Q049754	0/80	1	6 lots	Pass
			Q049842	0/90	1, 2	0/506	
			Q049845	0/86	1, 2		
			Q049848	0/90	1, 2		
Temp Cycle	JA104		Q049850	0/85	1		

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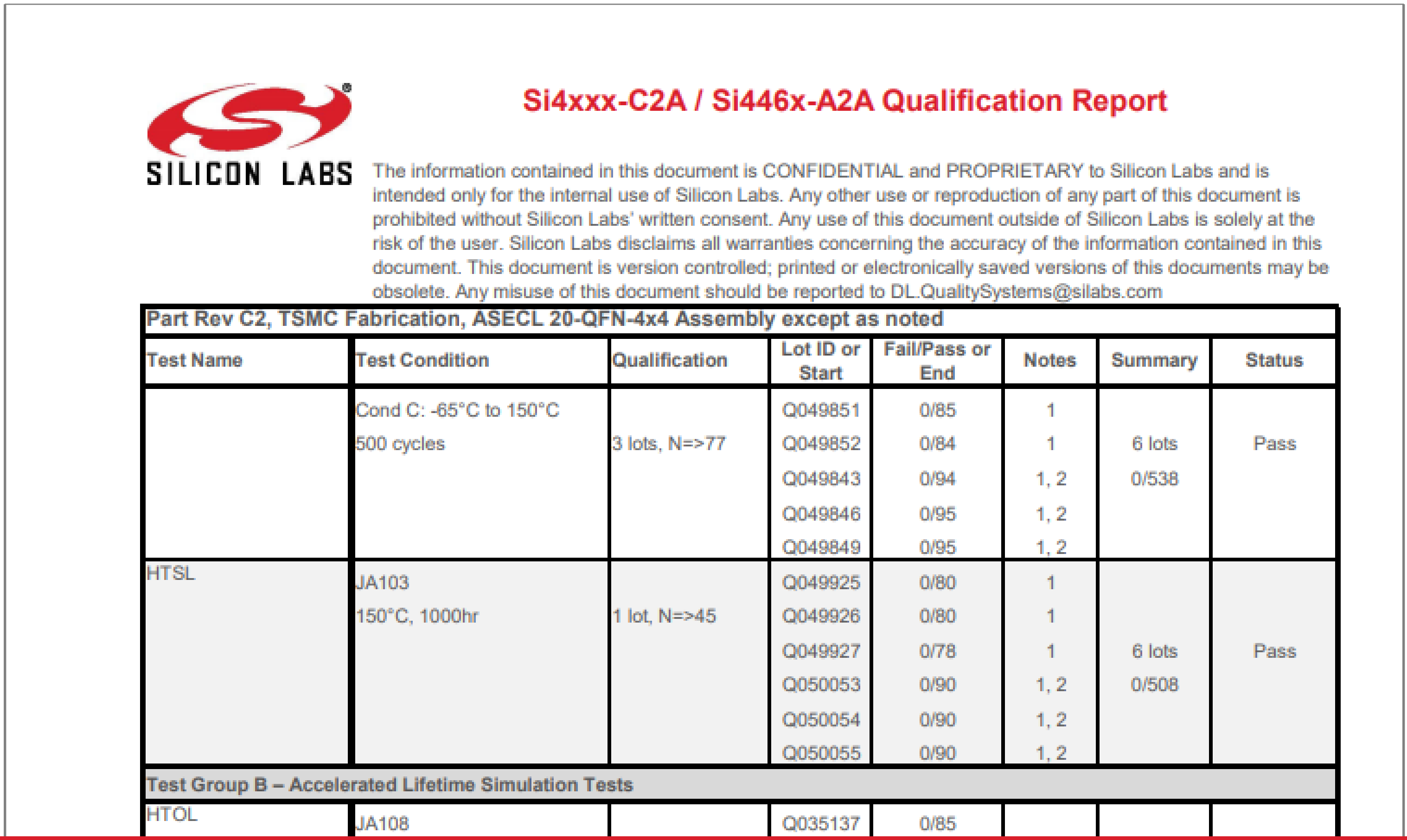

Si4xxx-C2A / Si446x-A2A Qualification Report

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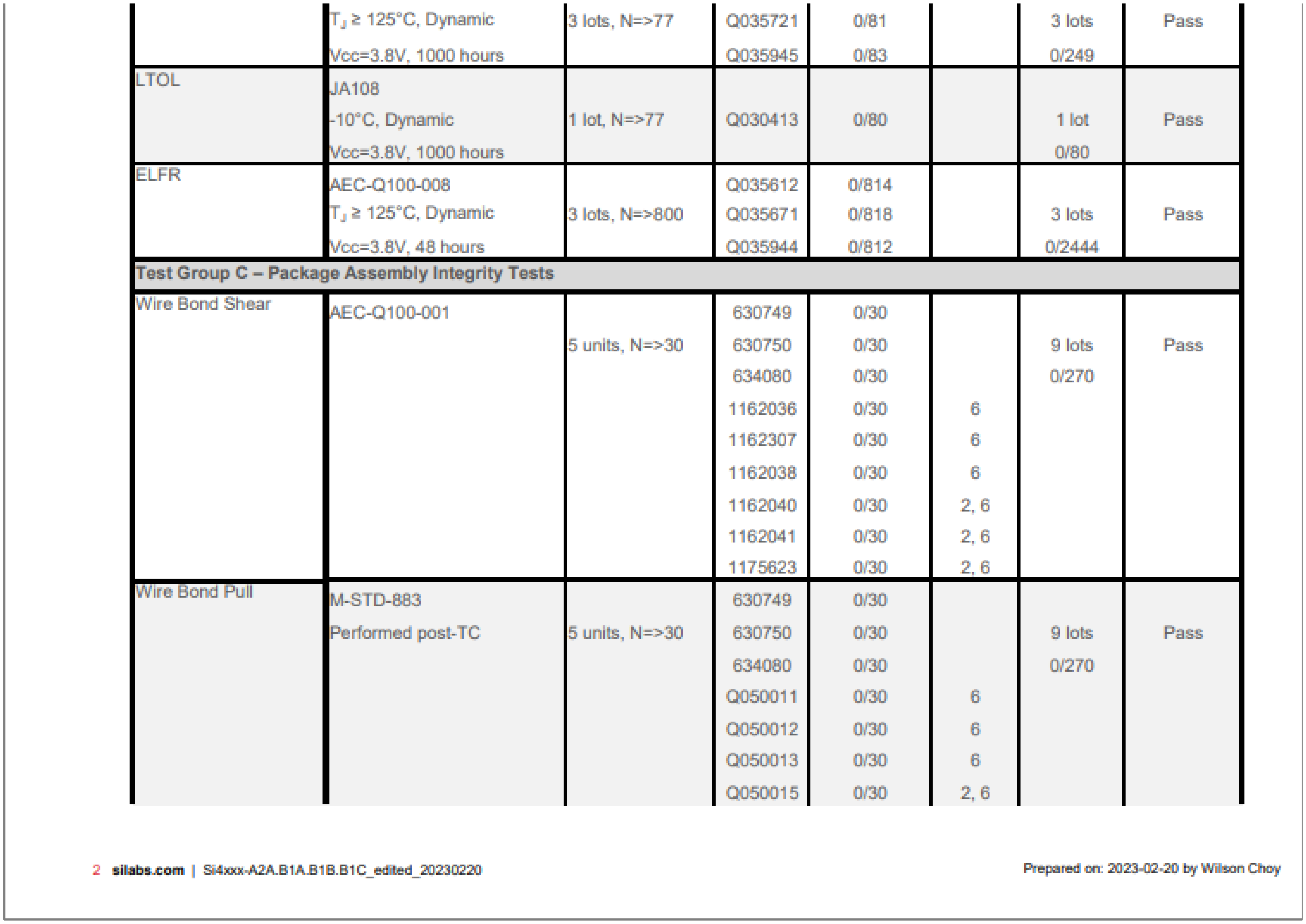
Part Rev C2, TSMC Fabrication, ASECL 20-QFN-4x4 Assembly except as noted							
Test Name	**Test Condition**	**Qualification**	**Lot ID or Start**	**Fail/Pass or End**	**Notes**	**Summary**	**Status**
	Cond C: -65°C to 150°C		Q049851	0/85	1		
	500 cycles	3 lots, N=>77	Q049852	0/84	1	6 lots	Pass
			Q049843	0/94	1, 2	0/538	
			Q049846	0/95	1, 2		
			Q049849	0/95	1, 2		
HTSL	JA103		Q049925	0/80	1		
	150°C, 1000hr	1 lot, N=>45	Q049926	0/80	1		
			Q049927	0/78	1	6 lots	Pass
			Q050053	0/90	1, 2	0/508	
			Q050054	0/90	1, 2		
			Q050055	0/90	1, 2		
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	JA108		Q035137	0/85			



	T_J ≥ 125°C, Dynamic	3 lots, N=>77	Q035721	0/81		3 lots	Pass
	Vcc=3.8V, 1000 hours		Q035945	0/83		0/249	
LTOL	JA108						
	-10°C, Dynamic	1 lot, N=>77	Q030413	0/80		1 lot	Pass
	Vcc=3.8V, 1000 hours					0/80	
ELFR	AEC-Q100-008		Q035612	0/814			
	T_J ≥ 125°C, Dynamic	3 lots, N=>800	Q035671	0/818		3 lots	Pass
	Vcc=3.8V, 48 hours		Q035944	0/812		0/2444	
Test Group C – Package Assembly Integrity Tests							
Wire Bond Shear	AEC-Q100-001		630749	0/30			
		5 units, N=>30	630750	0/30		9 lots	Pass
			634080	0/30		0/270	
			1162036	0/30	6		
			1162307	0/30	6		
			1162038	0/30	6		
			1162040	0/30	2, 6		
			1162041	0/30	2, 6		
			1175623	0/30	2, 6		
Wire Bond Pull	M-STD-883		630749	0/30			
	Performed post-TC	5 units, N=>30	630750	0/30		9 lots	Pass
			634080	0/30		0/270	
			Q050011	0/30	6		
			Q050012	0/30	6		
			Q050013	0/30	6		
			Q050015	0/30	2, 6		

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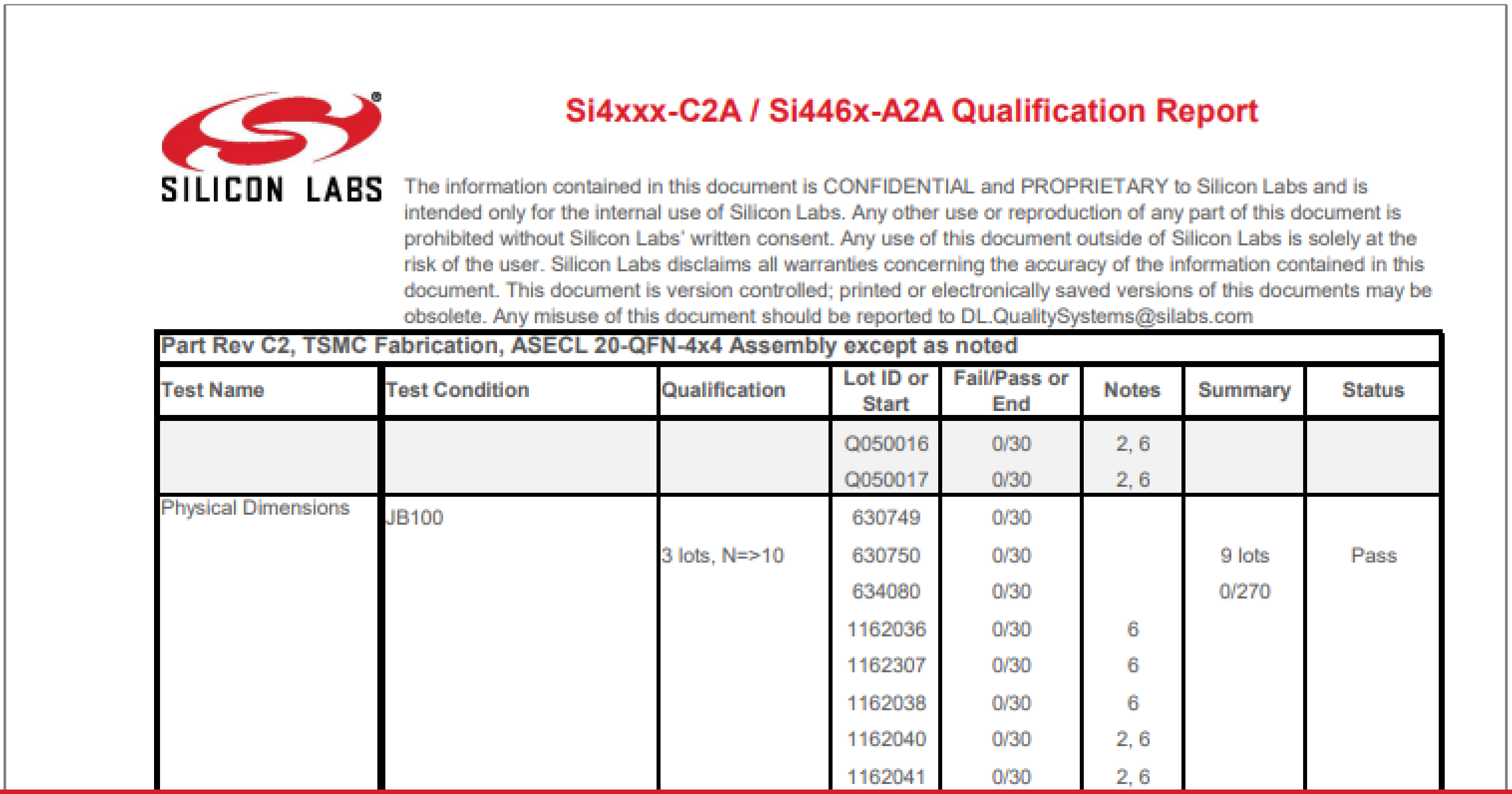

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Si4xxx-C2A / Si446x-A2A Qualification Report

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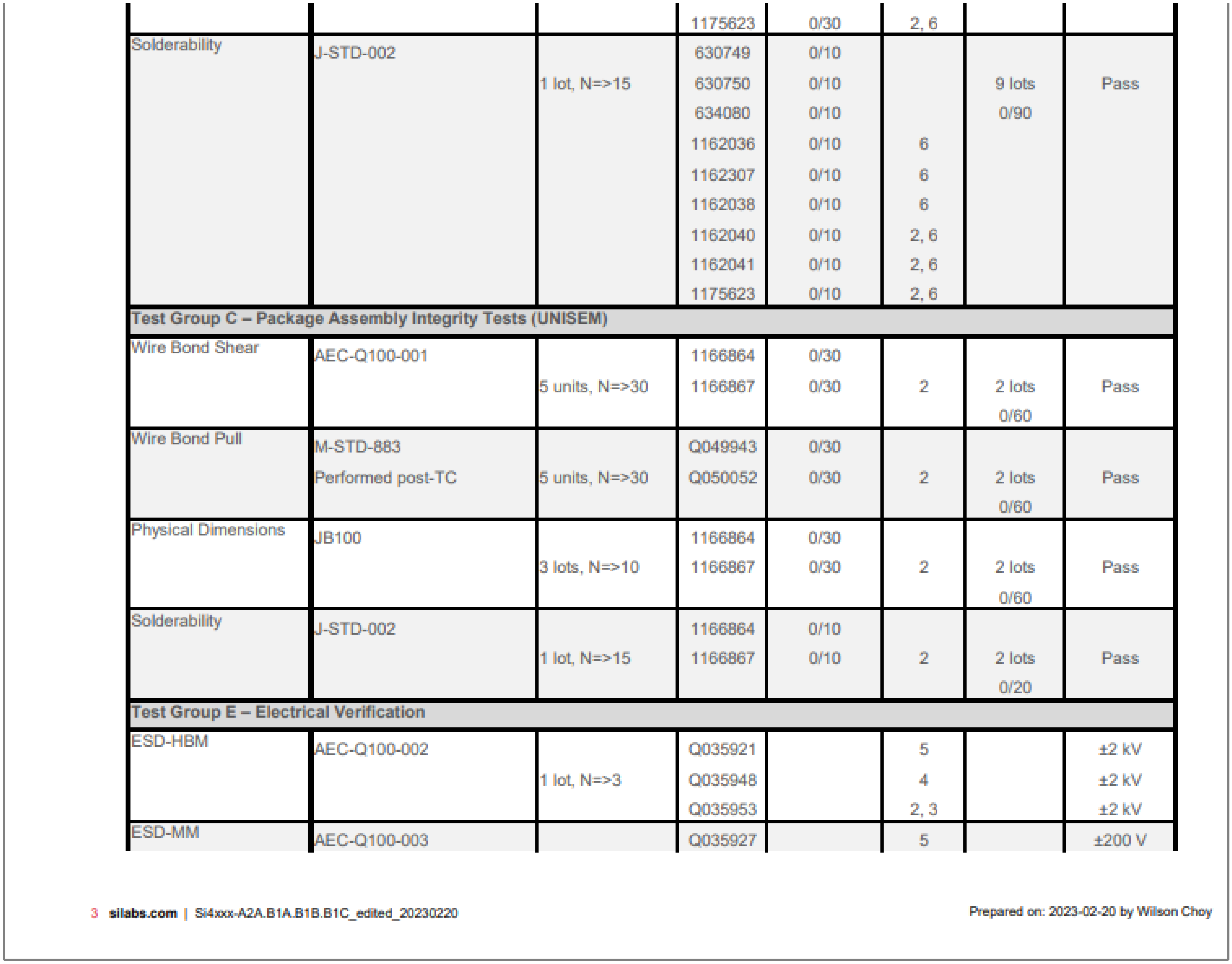
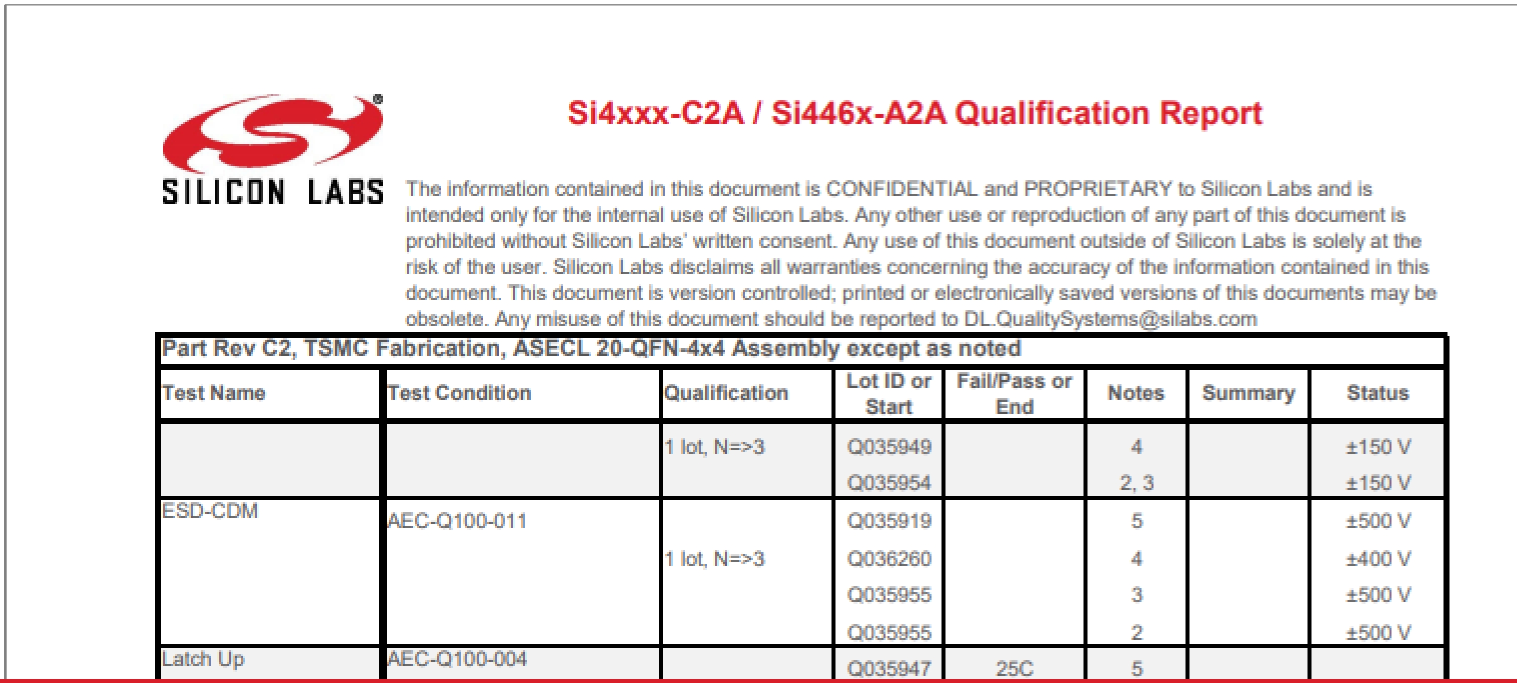
Part Rev C2, TSMC Fabrication, ASECL 20-QFN-4x4 Assembly except as noted

Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
			Q050016	0/30	2, 6		
			Q050017	0/30	2, 6		
Physical Dimensions	JB100		630749	0/30			
		3 lots, N=>10	630750	0/30		9 lots	Pass
			634080	0/30		0/270	
			1162036	0/30	6		
			1162307	0/30	6		
			1162038	0/30	6		
			1162040	0/30	2, 6		
			1162041	0/30	2, 6		



			1175623	0/30	2, 6		
Solderability	J-STD-002		630749	0/10			
		1 lot, N=>15	630750	0/10		9 lots	Pass
			634080	0/10		0/90	
			1162036	0/10	6		
			1162307	0/10	6		
			1162038	0/10	6		
			1162040	0/10	2, 6		
			1162041	0/10	2, 6		
			1175623	0/10	2, 6		
Test Group C – Package Assembly Integrity Tests (UNISEM)							
Wire Bond Shear	AEC-Q100-001		1166864	0/30			
		5 units, N=>30	1166867	0/30	2	2 lots	Pass
						0/60	
Wire Bond Pull	M-STD-883		Q049943	0/30			
	Performed post-TC	5 units, N=>30	Q050052	0/30	2	2 lots	Pass
						0/60	
Physical Dimensions	JB100		1166864	0/30			
		3 lots, N=>10	1166867	0/30	2	2 lots	Pass
						0/60	
Solderability	J-STD-002		1166864	0/10			
		1 lot, N=>15	1166867	0/10	2	2 lots	Pass
						0/20	
Test Group E – Electrical Verification							
ESD-HBM	AEC-Q100-002		Q035921		5		±2 kV
		1 lot, N=>3	Q035948		4		±2 kV
			Q035953		2, 3		±2 kV
ESD-MM	AEC-Q100-003		Q035927		5		±200 V



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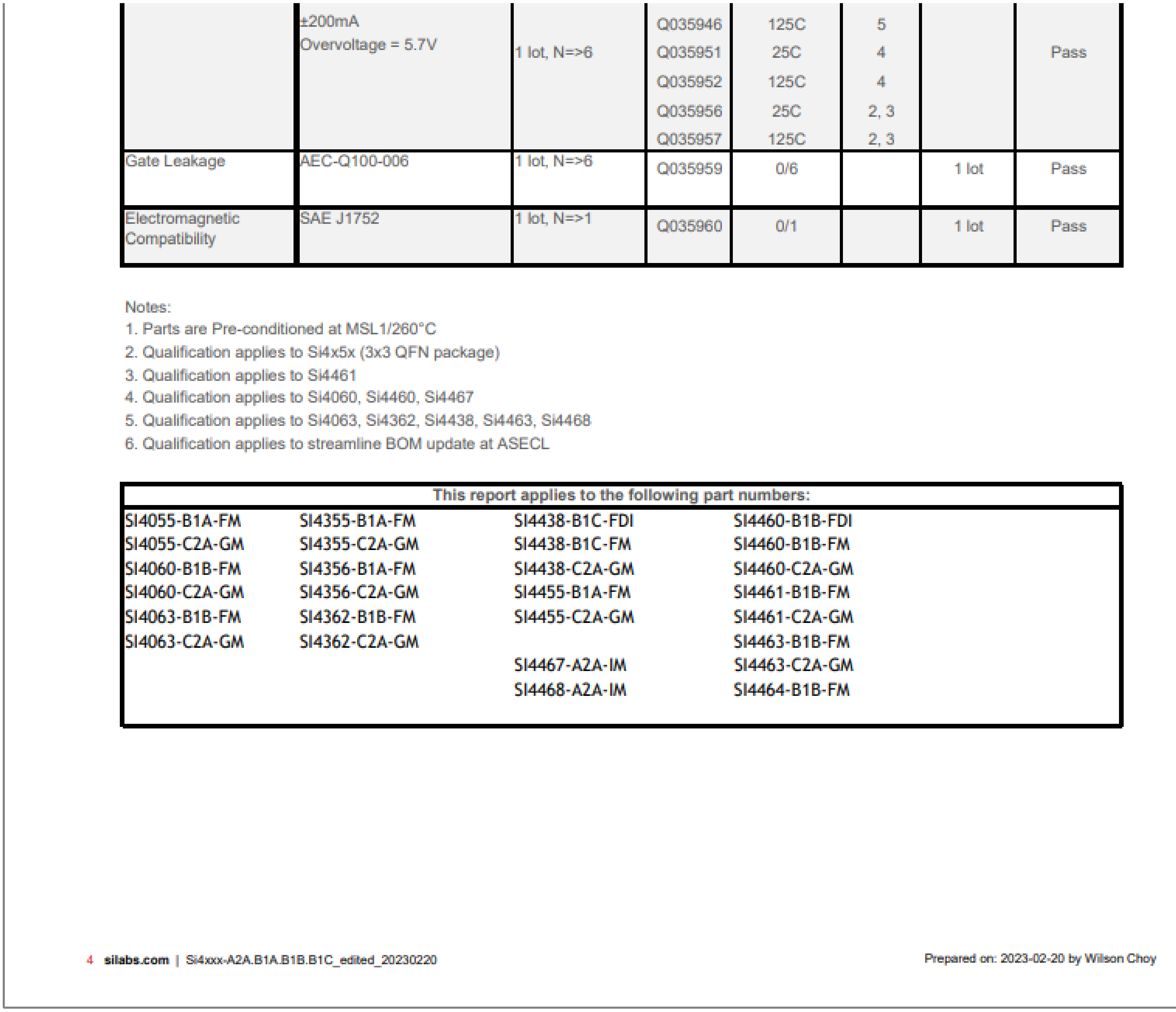
Si4xxx-C2A / Si446x-A2A Qualification Report

Part Rev C2, TSMC Fabrication, ASECL 20-QFN-4x4 Assembly except as noted

Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
		1 lot, N=>3	Q035949		4		±150 V
			Q035954		2, 3		±150 V
ESD-CDM	AEC-Q100-011		Q035919		5		±500 V
		1 lot, N=>3	Q036260		4		±400 V
			Q035955		3		±500 V
			Q035955		2		±500 V
Latch Up	AEC-Q100-004		Q035947	25C	5		



	±200mA Overvoltage = 5.7V	1 lot, N=>6	Q035946 Q035951 Q035952 Q035956 Q035957	125C 25C 125C 25C 125C	5 4 4 2, 3 2, 3		Pass
Gate Leakage	AEC-Q100-006	1 lot, N=>6	Q035959	0/6		1 lot	Pass
Electromagnetic Compatibility	SAE J1752	1 lot, N=>1	Q035960	0/1		1 lot	Pass

Notes:
1. Parts are Pre-conditioned at MSL1/260°C
2. Qualification applies to Si4x5x (3x3 QFN package)
3. Qualification applies to Si4461
4. Qualification applies to Si4060, Si4460, Si4467
5. Qualification applies to Si4063, Si4362, Si4438, Si4463, Si4468
6. Qualification applies to streamline BOM update at ASECL

This report applies to the following part numbers:			
SI4055-B1A-FM	SI4355-B1A-FM	SI4438-B1C-FDI	SI4460-B1B-FDI
SI4055-C2A-GM	SI4355-C2A-GM	SI4438-B1C-FM	SI4460-B1B-FM
SI4060-B1B-FM	SI4356-B1A-FM	SI4438-C2A-GM	SI4460-C2A-GM
SI4060-C2A-GM	SI4356-C2A-GM	SI4455-B1A-FM	SI4461-B1B-FM
SI4063-B1B-FM	SI4362-B1B-FM	SI4455-C2A-GM	SI4461-C2A-GM
SI4063-C2A-GM	SI4362-C2A-GM		SI4463-B1B-FM
		SI4467-A2A-IM	SI4463-C2A-GM
		SI4468-A2A-IM	SI4464-B1B-FM

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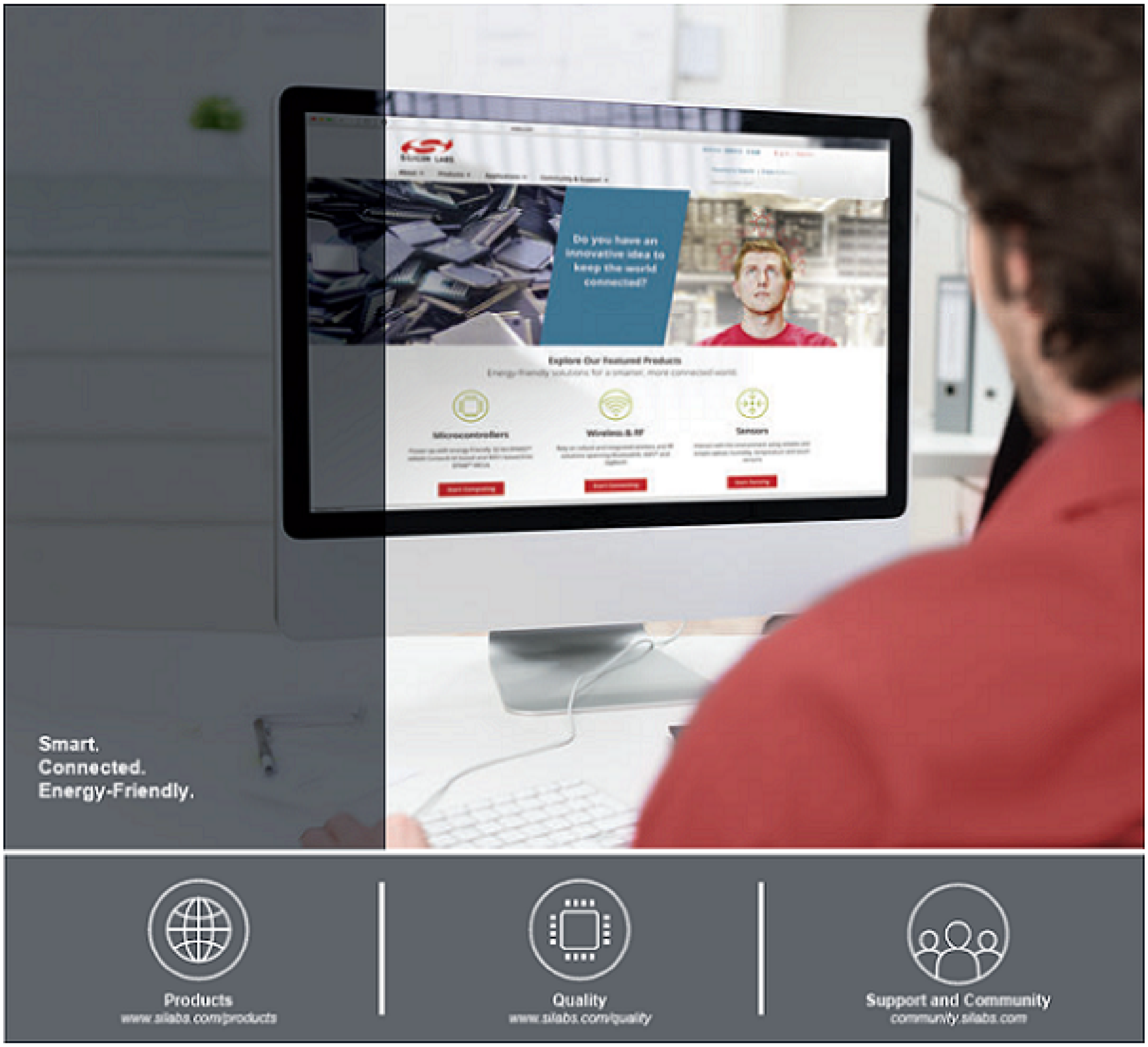

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