



# 2302081419 Additional Assembly, Test and Ship Site for Si4x6x (20-QFN-4x4) & Si4x5x (

**PCN Issue Date:** Feb 08, 2023

**Effective Date:** May 12, 2023

**PCN Type:** Assembly; Test

## Description of Change

Silicon Labs is pleased to announce the successful qualification of UNISEM (M) BERHAD as an additional assembly, test and ship site for Si4x6x (20-QFN-4x4) and Si4x5x (20-QFN-3x3). UNISEM is an existing assembly and test site for Silicon Labs, and is certified to ISO9001, ISO14001 and IATF16949.

UNISEM Ship Address:  
UNISEM (M) BERHAD  
No.1, Persiaran Pulau Jaya 9,  
Bandar Pulau Jaya,  
31300 Ipoh, Perak,  
Malaysia

As of the effective date of the PCN, Silicon Labs may ship from either of the qualified sites.

## Reason for Change

Additional Assembly and Test capacity for supply continuity

## Impact on Form, Fit, Function, Quality, Reliability

There is no change on form, fit, function, quality or reliability.

## Product Identification

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  
SI4455-C2A-ZM1  
SI4455-C2A-ZM1R  
SI4460-C2A-GM  
SI4460-C2A-GMR  
SI4461-C2A-GM  
SI4461-C2A-GMR  
SI4463-C2A-GM  
SI4463-C2A-GMR  
SI4467-A2A-IM  
SI4467-A2A-IMR  
SI4468-A2A-IM

SI4468-A2A-IMR  
RWM\*  
RWM\*R  
SI4463-C2A-\*  
SI4463-C2A-\*R  
SI4463M\*CGM  
SI4463M\*CGMR

**Last Date of Unchanged Product:** May 12, 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](mailto:PCNEarlyAcceptance@silabs.com)

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### Qualification Data

Please refer to qualification report below.



### 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
<b>Test Group A – Accelerated Environment Stress Tests</b>							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>77	Q035030	0/80	1	3 lots	Pass
			Q035235	0/80	1		
			Q035240	0/79	1		
UHAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>77	Q035032	0/80	1	3 lots	Pass
			Q035237	0/80	1		
			Q035238	0/80	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q035031	0/80	1	6 lots	Pass
			Q035236	0/80	1		
			Q035239	0/80	1		
			Q035279	0/90	1, 2		
			Q035280	0/90	1, 2		
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q035033	0/78	1	3 lots	Pass
			Q035241	0/48	1		
			Q035242	0/49	1		
<b>Test Group A – Accelerated Environment Stress Tests (UNISEM)</b>							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>77	Q049726	0/80	1	3 lots	Pass
			Q049727	0/80	1		
			Q049728	0/80	1		
UHAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>77	Q049749	0/80	1	6 lots	Pass
			Q049752	0/80	1		
			Q049754	0/80	1		
			Q049842	0/90	1, 2		
			Q049845	0/86	1, 2		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q049850	0/85	1	6 lots	Pass
			Q049851	0/85	1		
			Q049852	0/84	1		
			Q049843	0/94	1, 2		
			Q049846	0/95	1, 2		
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q049925	0/80	1	6 lots	Pass
			Q049926	0/80	1		
			Q049927	0/78	1		
			Q050053	0/90	1, 2		
			Q050054	0/90	1, 2		
<small>1 silabs.com   Si4xxx-A2A/B1A/B1B/B1C_edited</small> <span style="float: right;"><small>Prepared on: 2023-01-30 by Wilson Choy</small></span>							
<b>Test Group B – Accelerated Lifetime Simulation Tests</b>							



### 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
HTOL	JA108 T <sub>J</sub> ≥ 125°C, Dynamic V <sub>CC</sub> =3.8V, 1000 hours	3 lots, N=>77	Q035137	0/85		3 lots 0/249	Pass
			Q035721	0/81			
			Q035945	0/83			
LTOL	JA108 -10°C, Dynamic V <sub>CC</sub> =3.8V, 1000 hours	1 lot, N=>77	Q030413	0/80		1 lot 0/80	Pass
ELFR	AEC-Q100-008 T <sub>J</sub> ≥ 125°C, Dynamic V <sub>CC</sub> =3.8V, 48 hours	3 lots, N=>800	Q035612	0/814		3 lots 0/2444	Pass
			Q035671	0/818			
			Q035944	0/812			
Test Group C – Package Assembly Integrity Tests							
Wire Bond Shear	AEC-Q100-001	5 units, N=>30	630749	0/30		3 lots 0/90	Pass
			630750	0/30			
			634080	0/30			
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30	630749	0/30		3 lots 0/90	Pass
			630750	0/30			
			634080	0/30			
Physical Dimensions	JB100	3 lots, N=>10	630749	0/30		3 lots 0/90	Pass
			630750	0/30			
			634080	0/30			
Solderability	J-STD-002	1 lot, N=>15	630749	0/10		3 lots 0/30	Pass
			630750	0/10			
			634080	0/10			
Test Group C – Package Assembly Integrity Tests (UNISEM)							
Wire Bond Shear	AEC-Q100-001	5 units, N=>30	1166864	0/30		2 2 lots 0/60	Pass
			1166867	0/30	2		
Wire Bond Pull	M-STD-883 Performed post-TC	5 units, N=>30	Q049943	0/30		2 2 lots 0/60	Pass
			Q050052	0/30	2		
Physical Dimensions	JB100	3 lots, N=>10	1166864	0/30		2 2 lots 0/60	Pass
			1166867	0/30	2		
Solderability	J-STD-002	1 lot, N=>15	1166864	0/10		2 2 lots 0/20	Pass
			1166867	0/10	2		
Test Group E – Electrical Verification							
ESD-HBM	AEC-Q100-002 2 silabs.com   Si4xxx-A2A,B1A,B1B,B1C_edited	1 lot, N=>3	Q035921 Q035948		5 Prepared on: 2023-01-30 by Wilson Choy 4		±2 kV ±2 kV



## Si4xxx-C2A / Si446x-A2A Qualification Report

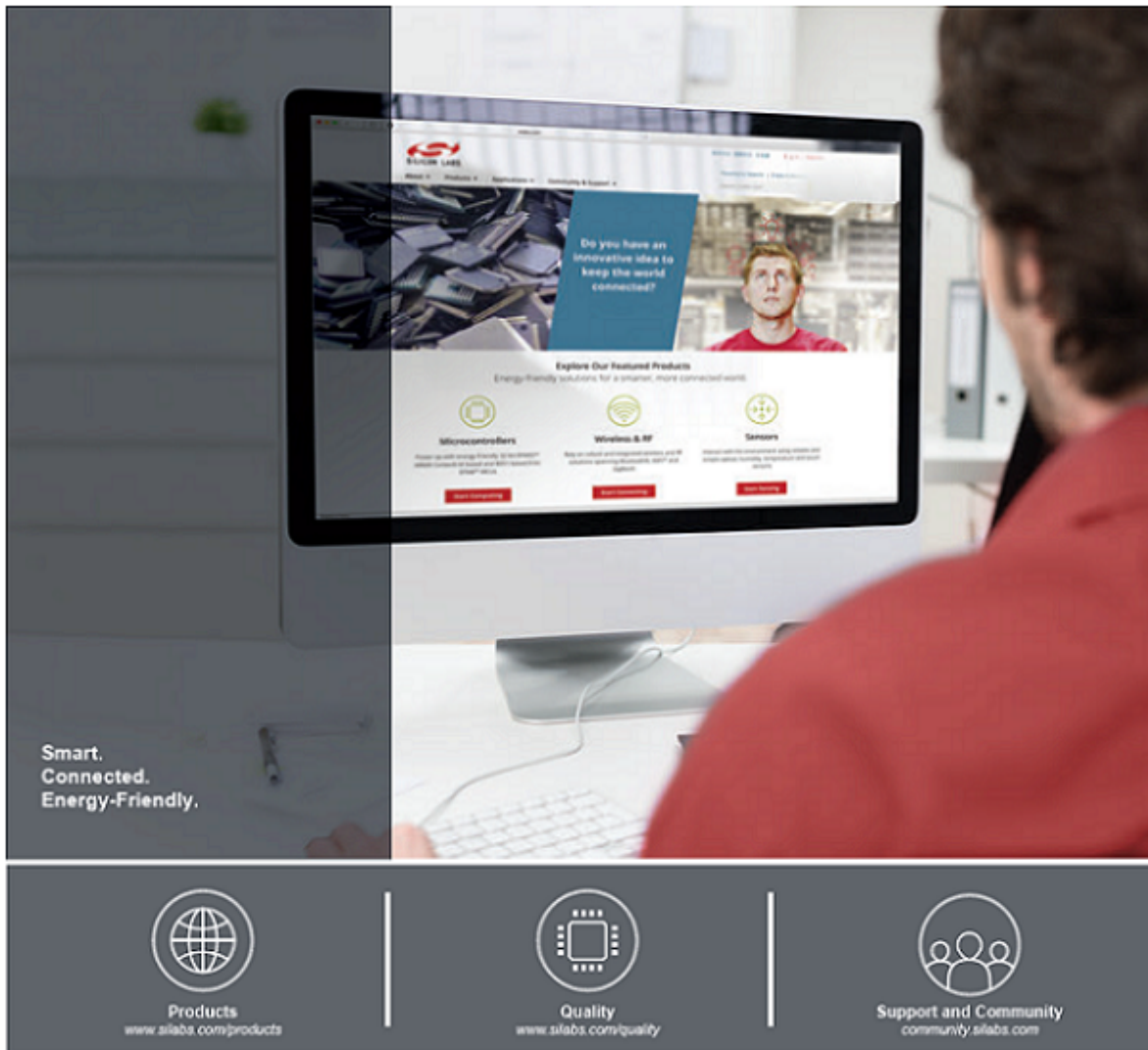
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Part Rev C2, TSMC Fabrication, ASECL 20-QFN-4x4 Assembly except as noted							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
ESD-MM	AEC-Q100-003	1 lot, N=>3	Q035953		2, 3		±2 kV
			Q035927		5		±200 V
			Q035949		4		±150 V
			Q035954		2, 3		±150 V
ESD-CDM	AEC-Q100-011	1 lot, N=>3	Q035919		5		±500 V
			Q036260		4		±400 V
			Q035955		3		±500 V
			Q035955		2		±500 V
Latch Up	AEC-Q100-004 ±200mA Overvoltage = 5.7V	1 lot, N=>6	Q035947	25C	5		Pass
			Q035946	125C	5		
			Q035951	25C	4		
			Q035952	125C	4		
			Q035956	25C	2, 3		
			Q035957	125C	2, 3		
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:

- Parts are Pre-conditioned at MSL1/260°C
- Qualification applies to Si4x5x (3x3 QFN package)
- Qualification applies to Si4461
- Qualification applies to Si4060, Si4460, Si4467
- Qualification applies to Si4063, Si4362, Si4438, Si4463, Si4468

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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