



200908856 Additional Assembly Test Site for EFR32BG21 and EFR32MG21

PCN Issue Date: 9/8/2020

Effective Date: 12/14/2020

PCN Type: Assembly

Description of Change

Silicon Labs is pleased to announce the successful qualification of an additional assembly and test-ship site, ASE Chung-Li, for EFR32BG21 and EFR32MG21. ASECL test will use the same testing equipment, hardware, and test programs used at the current production test site. Silicon Labs has successfully qualified the new test site per our standard test transfer procedures.

ASECL is an existing qualified assembly and test-ship site for Silicon Labs and is certified to ISO9001, ISO14001 and IATF16949.

As of the effective date of the PCN, Silicon Labs may assemble, test and ship from either of the qualified Assembly, Test and Ship sites.

Reason for Change

Additional assembly and test capacity for supply continuity.

Impact on Form, Fit, Function, Quality, Reliability

There is no impact on Form, Fit, Function, Quality and Reliability

Product Identification

Existing Part #
EFR32BG21A010F512IM32-B
EFR32BG21A010F512IM32-BR
EFR32BG21A010F768IM32-B
EFR32BG21A010F768IM32-BR
EFR32BG21A010F1024IM32-B
EFR32BG21A010F1024IM32-BR
EFR32BG21A020F512IM32-B
EFR32BG21A020F512IM32-BR
EFR32BG21A020F768IM32-B
EFR32BG21A020F768IM32-BR
EFR32BG21A020F1024IM32-B
EFR32BG21A020F1024IM32-BR
EFR32BG21A010****IM32-B
EFR32BG21A010****IM32-BR
EFR32MG21A010F512IM32-B
EFR32MG21A010F512IM32-BR
EFR32MG21A010F768IM32-B
EFR32MG21A010F768IM32-BR
EFR32MG21A010F1024IM32-B
EFR32MG21A010F1024IM32-BR
EFR32MG21A020F512IM32-B
EFR32MG21A020F512IM32-BR
EFR32MG21A020F768IM32-B
EFR32MG21A020F768IM32-BR
EFR32MG21A020F1024IM32-B
EFR32MG21A020F1024IM32-BR
EFR32MG21A010****IM32-B

EFR32MG21A010*****IM32-BR
EFR32MG21A020*****IM32-B
EFR32MG21A020*****IM32-BR

Last Date of Unchanged Product: 12/14/2020

Qualification Samples

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

User Registration

Register today to create your account on Silabs.com. Your personalized profile allows you to receive technical document updates, new product announcements, "how-to" and design documents, product change notices (PCN) and other valuable content available only to registered users. <http://www.silabs.com/profile>

Qualification Data

Assembly Qualification Report is attached.



EFR32xG21x010 Qualification Report

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Part Rev B, TSMC Fabrication, SPIL 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 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q043123	0/80	1	3 lots 0/240	Pass
			Q043122	0/80	1		
			Q042927	0/80	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q043119	0/80	1	3 lots 0/240	Pass
			Q043118	0/80	1		
			Q042926	0/80	1		
UHAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>77	Q043121	0/80	1	3 lots 0/240	Pass
			Q043120	0/80	1		
			Q042928	0/80	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q043117	0/38	1	3 lots 0/148	Pass
			Q043116	0/80	1		
			Q042925	0/30	1		
Test Group A – Accelerated Environment Stress Tests - ASECL Assembly							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q045669	0/80	1	3 lots 0/239	Pass
			Q044668	0/80	1		
			Q045667	0/79	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q045661	0/80	1	3 lots 0/240	Pass
			Q045660	0/80	1		
			Q045659	0/80	1		
UHAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>77	Q045665	0/80	1	3 lots 0/240	Pass
			Q045664	0/80	1		
			Q045663	0/80	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q045673	0/80	1	3 lots 0/239	Pass
			Q045672	0/80	1		
			Q045671	0/79	1		
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	JA108 T _J ≥ 125°C, Dynamic Vcc=3.8V, 1000 hours	3 lots, N=>77	Q042857	0/88	4	3 lots 0/248	Pass
			Q043797	0/83			
			Q043613	0/77			
LTOL	JA108 T _A = -10°C, Dynamic Vcc=3.8V, 1000 hours	1 lot, N=>32	Q042871	0/59		1 lot 0/59	Pass



EFR32xG21x010 Qualification Report

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Part Rev B, TSMC Fabrication, SPIL Assembly except as noted							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
ELFR	JA108 T _j ≥ 125°C, Dynamic V _{cc} =3.8V, 48 hours	3 lots, N=>500	Q046138	0/78			Pass 4 lots 0/1603
			Q043759	0/506			
			Q043614	0/526			
			Q042872	0/571			
NVM Endurance, Retention and Operating Life	JESD22-A117 25°C 500 hours	3 lots, N=>39	Q042996	0/40	2		Pass
			Q043126	0/40	2	3 lots	
			Q043349	0/40	2	0/120	
NVM Endurance, Retention and Operating Life	JESD22-A117 + JESD22-A103 150°C, 1000 hours	3 lots, N=>39	Q043153	0/40	3		Pass
			Q043130	0/40	3	3 lots	
			Q043074	0/40	3	0/120	
Test Group E – Electrical Verification							
ESD-HBM	JS-001	1 lot, N=>3	Q046139			2500 kV	Class 2
ESD-CDM	JS-002	1 lot, N=>3	Q046140		5	1000 V	Class C3
			Q045623		6	1000 V	Class C3
Latch Up	JESD78	1 lot, N=>3	Q046141 Q046314	25 °C 135 °C		±200mA -150, +200mA	Pass

Notes:

1. Parts are Pre-conditioned at MSL2/260°C
2. Preconditioned with 10K write/erase cycles at 25°C
3. Preconditioned with 10K write/erase cycles at 125°C
4. An additional 700 hrs HTOL on 88 units completed successfully to evaluate extended lifetime
5. SPIL Assembly
6. ASECL Assembly

This report applies to the following part number:		
EFR32BG21A010F512IM32-B	EFR32BG21A010F1024IM32-B	EFR32MG21A010F768IM32-B
EFR32BG21A010F768IM32-B	EFR32MG21A010F512IM32-B	EFR32MG21A010F1024IM32-B
EFR32BG21B010F512IM32-B	EFR32BG21B010F768IM32-B	EFR32BG21B010F1024IM32-B
EFR32MG21B010F1024IM32-B	EFR32MG21B010F768IM32-B	EFR32MG21B010F512IM32-B



EFR32xG21x020 Qualification Report

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Part Rev B, TSMC Fabrication, SPIL Assembly except as noted							
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Test Group A – Accelerated Environment Stress Tests							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q043123	0/80	1	3 lots 0/240	Pass
			Q043122	0/80	1		
			Q042927	0/80	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q043119	0/80	1	3 lots 0/240	Pass
			Q043118	0/80	1		
			Q042926	0/80	1		
UHAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>77	Q043121	0/80	1	3 lots 0/240	Pass
			Q043120	0/80	1		
			Q042928	0/80	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q043117	0/38	1	3 lots 0/148	Pass
			Q043116	0/80	1		
			Q042925	0/30	1		
Test Group A – Accelerated Environment Stress Tests - ASECL Assembly							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q045669	0/80	1	3 lots 0/239	Pass
			Q044668	0/80	1		
			Q045667	0/79	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q045661	0/80	1	3 lots 0/240	Pass
			Q045660	0/80	1		
			Q045659	0/80	1		
UHAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>77	Q045665	0/80	1	3 lots 0/240	Pass
			Q045664	0/80	1		
			Q045663	0/80	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q045673	0/80	1	3 lots 0/239	Pass
			Q045672	0/80	1		
			Q045671	0/79	1		
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	JA108 T _j ≥ 135°C, Dynamic Vcc=3.8V, 1000 hours	3 lots, N=>77	Q042857	0/88	5	3 lots 0/248	Pass
			Q043797	0/83			
			Q043613	0/77			
HTOL	JA108 T _j ≥ 135°C, Dynamic Vcc=3.8V, 100 hours	3 lots, N=>77	Q043527	0/80	4	3 lots 0/248	Pass
			Q043835	0/90	4		
			Q043587	0/78	4		
LTOL	JA108 T _a = -10°C, Dynamic Vcc=3.8V, 1000 hours	1 lot, N=>32	Q042871	0/59		1 lot 0/59	Pass



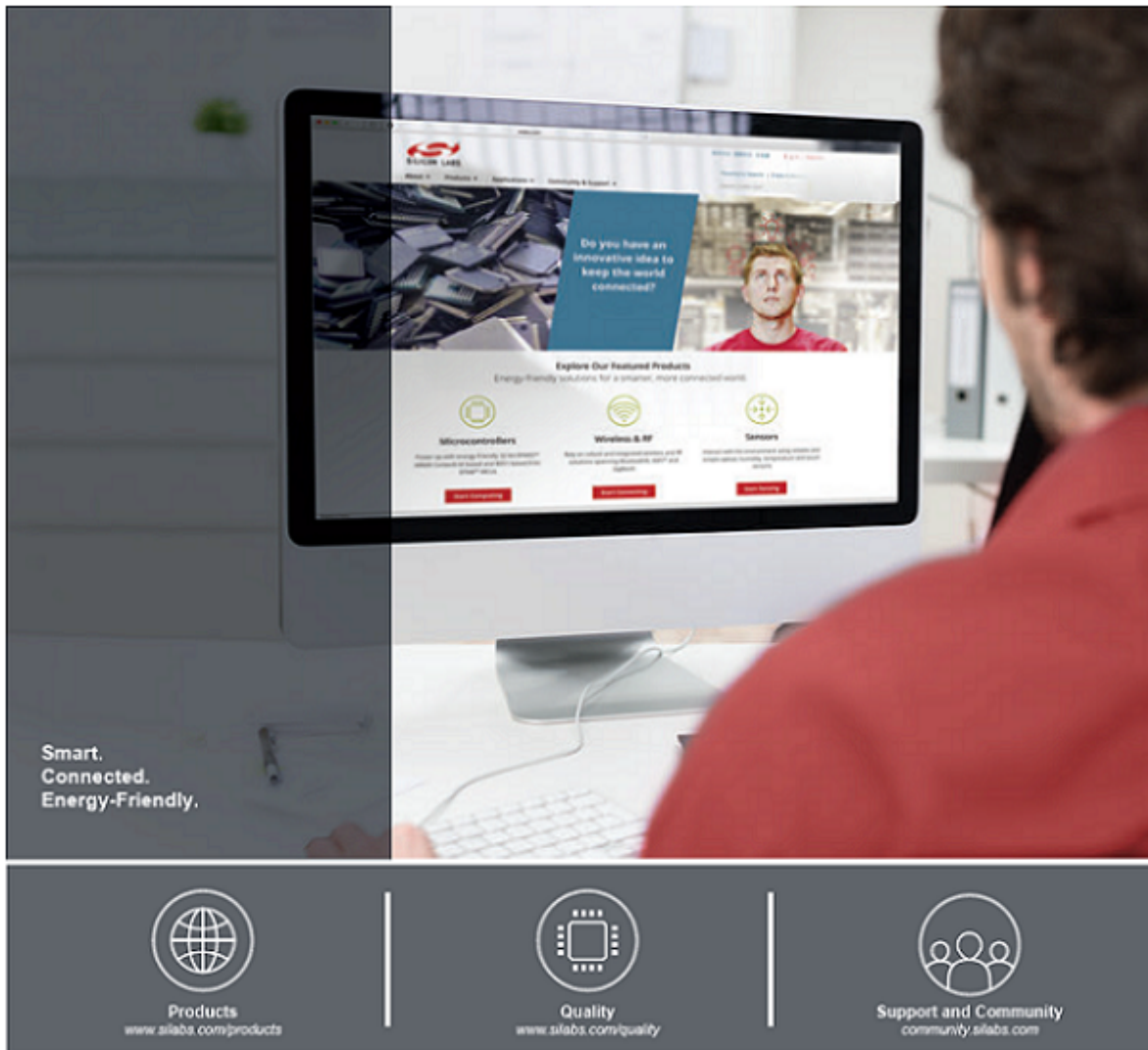
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Part Rev B, TSMC Fabrication, SPIL Assembly except as noted								
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status	
ELFR	JA108 T _J ≥ 125°C, Dynamic V _{CC} =3.8V, 48 hours	3 lots, N=>500	Q046138	0/78				
			Q043759	0/506				
			Q043614	0/526			3 lots	Pass
			Q042872	0/571			0/1603	
NVM Endurance, Retention and Operating Life	JESD22-A117 25°C 500 hours	3 lots, N=>39	Q042996	0/40	2			
			Q043126	0/40	2	3 lots		
			Q043349	0/40	2	0/120	Pass	
NVM Endurance, Retention and Operating Life	JESD22-A117 + JESD22-A103 150°C, 1000 hours	3 lots, N=>39	Q043153	0/40	3			
			Q043130	0/40	3	3 lots		
			Q043074	0/40	3	0/120	Pass	
Test Group E – Electrical Verification								
ESD-HBM	JS-001	1 lot, N=>3	Q046139			2500 kV	Class 2	
ESD-CDM	JS-002	1 lot, N=>3	Q046140		6	1000 V	Class C3	
			Q045623		7	1000 V	Class C3	
Latch Up	JESD78	1 lot, N=>3	Q046141 Q046413	25 °C 135 °C		±200mA -150, +200mA	Pass	

- Notes:
- Parts are Pre-conditioned at MSL2/260°C
 - Preconditioned with 10K write/erase cycles at 25°C
 - Preconditioned with 10K write/erase cycles at 125°C
 - 20dBm PA HTOL 100% duty cycle; use duty cycle <10%
 - An additional 700 hrs HTOL on 88 units completed successfully to evaluate extended lifetime
 - SPIL Assembly
 - ASECL Assembly

This report applies to the following part number:		
EFR32BG21A020F512IM32-B	EFR32BG21A020F1024IM32-B	EFR32MG21A020F1024IM32-B
EFR32BG21A020F768IM32-B	EFR32MG21A020F768IM32-B	EFR32BG21B020F512IM32-B
EFR32BG21B020F768IM32-B	EFR32BG21B020F1024IM32-B	EFR32MG21B020F512IM32-B
EFR32MG21B020F768IM32-B	EFR32MG21B020F1024IM32-B	



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