



# 171220205 Change of Substrate Vendor from SEMCO to KCC

**PCN Issue Date:** 12/20/2017

**Effective Date:** 3/23/2018

**PCN Type:** Assembly

## Description of Change

Silicon Labs is pleased to announce a change of substrate vendor for 112-LFBGA-10x10, 120-VFBGA-7x7, 14-LGA-5x5 and 47-LGA-6x8 based on the successful qualification. There is no difference in material, design, dimension, drawing, and tolerance between SEMCO & KCC substrates.

As of the effective date of the PCN, Silicon Labs will continue to fulfill orders using substrates from both SEMCO & KCC.

The package qualification report is attached.

## Reason for Change

The current substrate supplier, SEMCO, announced EOL of the substrates that are used for 112-LFBGA-10x10, 120-VFBGA-7x7, 14-LGA-5x5 and 47-LGA-6x8 package.

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

There is no impact to form, fit, function, quality or reliability of the product

## Product Identification

Existing Part #  
EFM32G290F128-BGA112T  
EFM32G290F128-BGA112  
EFM32G290F32-BGA112T  
EFM32G290F32-BGA112  
EFM32G290F64-BGA112T  
EFM32G290F64-BGA112  
EFM32G290F32G-E-BGA112  
EFM32G290F32G-E-BGA112R  
EFM32G290F64G-E-BGA112  
EFM32G290F64G-E-BGA112R  
EFM32G290F128G-E-BGA112  
EFM32G290F128G-E-BGA112R  
EFM32G890F128-BGA112T  
EFM32G890F128-BGA112  
EFM32G890F32-BGA112T  
EFM32G890F32-BGA112  
EFM32G890F64-BGA112T  
EFM32G890F64-BGA112  
EFM32G890F32G-E-BGA112  
EFM32G890F32G-E-BGA112R  
EFM32G890F64G-E-BGA112  
EFM32G890F64G-E-BGA112R  
EFM32G890F128G-E-BGA112  
EFM32G890F128G-E-BGA112R  
EFM32GG290F1024-BGA112T  
EFM32GG290F1024-BGA112  
EFM32GG290F512-BGA112T

EFM32GG290F512-BGA112  
EFM32GG290F512G-E-BGA112  
EFM32GG290F512G-E-BGA112R  
EFM32GG290F1024G-E-BGA112  
EFM32GG290F1024G-E-BGA112R  
EFM32GG295F1024-BGA120T  
EFM32GG295F1024-BGA120  
EFM32GG295F512-BGA120T  
EFM32GG295F512-BGA120  
EFM32GG295F512G-E-BGA120  
EFM32GG295F512G-E-BGA120R  
EFM32GG295F1024G-E-BGA120  
EFM32GG295F1024G-E-BGA120R  
EFM32GG390F1024-BGA112T  
EFM32GG390F1024-BGA112  
EFM32GG390F512-BGA112T  
EFM32GG390F512-BGA112  
EFM32GG390F512G-E-BGA112  
EFM32GG390F512G-E-BGA112R  
EFM32GG390F1024G-E-BGA112  
EFM32GG390F1024G-E-BGA112R  
EFM32GG395F1024-BGA120T  
EFM32GG395F1024-BGA120  
EFM32GG395F512-BGA120T  
EFM32GG395F512-BGA120  
EFM32GG395F512G-E-BGA120  
EFM32GG395F512G-E-BGA120R  
EFM32GG395F1024G-E-BGA120  
EFM32GG395F1024G-E-BGA120R  
EFM32GG890F1024-BGA112T  
EFM32GG890F1024-BGA112  
EFM32GG890F512-BGA112T  
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EFM32GG890F512G-E-BGA112  
EFM32GG890F512G-E-BGA112R  
EFM32GG890F1024G-E-BGA112  
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EFM32GG895F1024-BGA120T  
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EFM32GG895F512G-E-BGA120  
EFM32GG895F512G-E-BGA120R  
EFM32GG895F1024G-E-BGA120  
EFM32GG895F1024G-E-BGA120R  
EFM32GG990F1024-BGA112T  
EFM32GG990F1024-BGA112  
EFM32GG990F512-BGA112T  
EFM32GG990F512-BGA112  
EFM32GG990F512G-E-BGA112  
EFM32GG990F512G-E-BGA112R  
EFM32GG990F1024G-E-BGA112  
EFM32GG990F1024G-E-BGA112R  
EFM32GG995F1024-BGA120T  
EFM32GG995F1024-BGA120  
EFM32GG995F512-BGA120T  
EFM32GG995F512-BGA120  
EFM32GG995F512G-E-BGA120  
EFM32GG995F512G-E-BGA120R  
EFM32GG995F1024G-E-BGA120  
EFM32GG995F1024G-E-BGA120R  
SI8233AB-D-IM  
SI8233AB-D-IMR  
SI8233BB-D-IM  
SI8233BB-D-IMR  
SI8233CB-D-IM  
SI8233CB-D-IMR

SI8234AB-D-IM  
SI8234AB-D-IMR  
SI8234BB-D-IM  
SI8234BB-D-IMR  
SI8235AB-D-IM  
SI8235AB-D-IMR  
SI8235BB-AM  
SI8235BB-AMR  
SI8235BB-D-IM  
SI8235BB-D-IMR  
SI8235BB-D-YM0  
SI8235BB-D-YM0R  
SI32260-C-FM2  
SI32260-C-FM2R  
SI32260-C-GM2  
SI32260-C-GM2R  
SI32260-C-ZM2  
SI32260-C-ZM2R  
SI32261-C-FM2  
SI32261-C-FM2R  
SI32261-C-GM2  
SI32261-C-GM2R  
SI32261-C-ZM2  
SI32261-C-ZM2R

**Last Date of Unchanged Product:** 3/23/2018

### Qualification Samples

Available upon request

**Specific conditions of acceptance of this change will be considered on a case by case basis if written notice is submitted within 30 days of this notice. To request further data or inquire about this notification, please contact your local Silicon Labs sales representative. A list of Silicon Labs sales representatives is available at <http://www.silabs.com>.**

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### Customer Early Acceptance Sign Off

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**Early Acceptance:**

**Date:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Email your early Acceptance approval to:** PCNEarlyAcceptance@silabs.com

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### Qualification Data

Please see below qualification reports.



### Si8233/34/35/36/38 AEC-Q100 Qualification Report

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Part Rev B, Vanguard Fabrication, ASECL 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 - 14-LGA (ASEKR)</b>							
HAST	JA110 130°C, 85%RH Vcc=5V, 96 hours	3 lots, N=>25	Q027993	0/29	3		Pass
			Q028231	0/30	3		
			Q028379	0/30	3	4 lots	
			Q028238	0/29	3, 4	0/118	
UHAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>25	Q042266	0/77	3, 4, 5		Pass
			Q042265	0/77	3, 4, 5	3 lots	
			Q042264	0/77	3, 4, 5	0/231	
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q027992	0/30	3		Pass
			Q028229	0/30	3		
			Q028376	0/30	3		
			Q028236	0/30	3, 4		
			Q042270	0/77	3, 4, 5		
			Q042269	0/77	3, 4, 5	7 lots	
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q027991	0/30	3		Pass
			Q028232	0/30	3		
			Q028378	0/30	3	4 lots	
			Q028241	0/30	3, 4	0/120	

Notes:

- 3. Parts are Pre-conditioned at MSL 3 @ 260°C
- 4. New Polyimide material used
- 5. KCC Substrate used



### Si32260/1-C KCC Substrate Supplier Qualification

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Part Rev C, Vanguard Fabrication, ASEKR Assembly							
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>							
UHAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>25	Q042240	0/25	1, 2	3 lots 0/75	Pass
			Q042241	0/25	1, 2		
			Q042242	0/25	1, 2		
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>25	Q036570	0/26	1	3 lots 0/80	Pass
			Q036769	0/27	1		
			Q036768	0/27	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q042244	0/25	1, 2	3 lots 0/75	Pass
			Q042245	0/25	1, 2		
			Q042246	0/25	1, 2		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q037239	0/30	1	3 lots 0/90	Pass
			Q036700	0/30	1		
			Q036766	0/30	1		

**Notes:**

- Parts are Pre-conditioned at MSL3/260°C
- KCC Substrates

This report applies to the following part numbers:	
Si32260-C-FM2	Si32260-C-ZM2
Si32260-C-GM2	Si32261-C-ZM2
Si32261-C-FM2	
Si32261-C-GM2	

## EFM32G Rev D BGA Qualification Report



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Rev D, TSMC Fabrication, ASEKR Assembly							
Test Name	Test Condition	Qualification	Lot ID	Fail/Pass or End	Notes	Summary	Status
Test Group A - Accelerated Environment Stress Tests							
HAST	JA110 130°C, 85%RH Vcc=3.3V, 96 hours	3 lots, N=>25	R1207-12779	0/80	1, 2	1 lots	Pass
Temp Cycle	JA104 Cond B: -65°C to 150°C 500 cycles	3 lots, N=>25	R1207-12779 Q042286	0/80 0/25	1, 2 1, 3	2 lots	Pass
uHAST	JA102 130°C, 85% RH 96 hours	3 lots, N=>25	R1207-12779 Q042285	0/80 0/25	1, 2 1, 3	2 lots 0/105	Pass
HTSL	JA103 150°C 1000hr	3 lots, N=>25	R1207-12779	0/80	1, 2	1 lots 0/80	Pass

Notes:

1. Parts are Pre-conditioned at MSL3/260°C
2. The qualification data in this report was collected before the acquisition of Energy Micro Corporation by Silicon Laboratories in July 2013. The content and requirements for this report are different from the standard qualification requirements and reports generated by Silicon Laboratories.
3. Using KCC substrate

## EFM32GG Rev D BGA Qualification Report



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Rev D, TSMC Fabrication, ASEKR Assembly							
Test Name	Test Condition	Qualification	Lot ID	Fail/Pass or End	Notes	Summary	Status
Test Group A - Accelerated Environment Stress Tests							
HAST	JA110 130°C, 85%RH Vcc=3.3V, 96 hours	3 lots, N=>25	R1277-13636 Q042301 Q042302 Q042303	0/80 0/25 0/25 0/25	1, 2 1, 3 1, 3 1, 3	4 lots 0/155	Pass
Temp Cycle	JA104 Cond B: -65°C to 150°C 500 cycles	3 lots, N=>25	R1277-13636 Q042294 Q042305 Q042306 Q042307	0/80 0/25 0/25 0/25 0/25	1, 2 1, 3 1, 3 1, 3 1, 3	5 lots 0/180	Pass
uHAST	JA102 130°C, 85% RH 96 hours	3 lots, N=>25	R1277-13636 Q042292	0/80 0/25	1, 2 1, 3	2 lots 0/105	Pass
HTSL	JA103 150°C 1000hr	3 lots, N=>25	R1277-13636	0/80	1, 2	1 lots 0/80	Pass

Notes:

1. Parts are Pre-conditioned at MSL3/260°C
2. The qualification data in this report was collected before the acquisition of Energy Micro Corporation by Silicon Laboratories in July 2013. The content and requirements for this report are different from the standard qualification requirements and reports generated by Silicon Laboratories.
3. Using KCC substrate

## EFM32GG Rev E Qualification Report



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### Part Rev E, TSMC Fabrication, ASEKR Assembly

Test Name	Test Condition	Qualification	Lot ID	Fail/Pass	Notes	Summary	Status
Test Group A – Accelerated Environment Stress Tests - BGA							
HAST	JA110 110°C, 85%RH Vcc=3.8V, 264 hours	3 lots, N=>25	Q037514	0/30	1		Pass
			Q037510	0/30	1		
			Q037491	0/30	1		
			Q042301	0/25	1,10		
			Q042302	0/25	1,10	6 lots	
			Q042303	0/25	1,10	0/165	
UHAST	JA118 110°C, 85%RH 264 hours	3 lots, N=>25	Q037511	0/30	1		Pass
			Q037494	0/30	1		
			Q034891	0/30	1	5 lots	
			Q037488	0/30	1	0/145	
			Q042292	0/25	1,10		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q037512	0/30	1		Pass
			Q037495	0/30	1		
			Q037490	0/30	1		
			Q042294	0/25	1,10		
			Q042305	0/25	1,10		
			Q042306	0/25	1,10	7 lots	
			Q042307	0/25	1,10	0/190	
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q034885	0/30	1		Pass
			Q034893	0/30	1	3 lots	
			Q038112	0/40	1	0/100	

Notes:

1. Parts are Pre-conditioned at MSL3/260°C
10. Using KCC substrate



## EFM32G Rev E Qualification Report



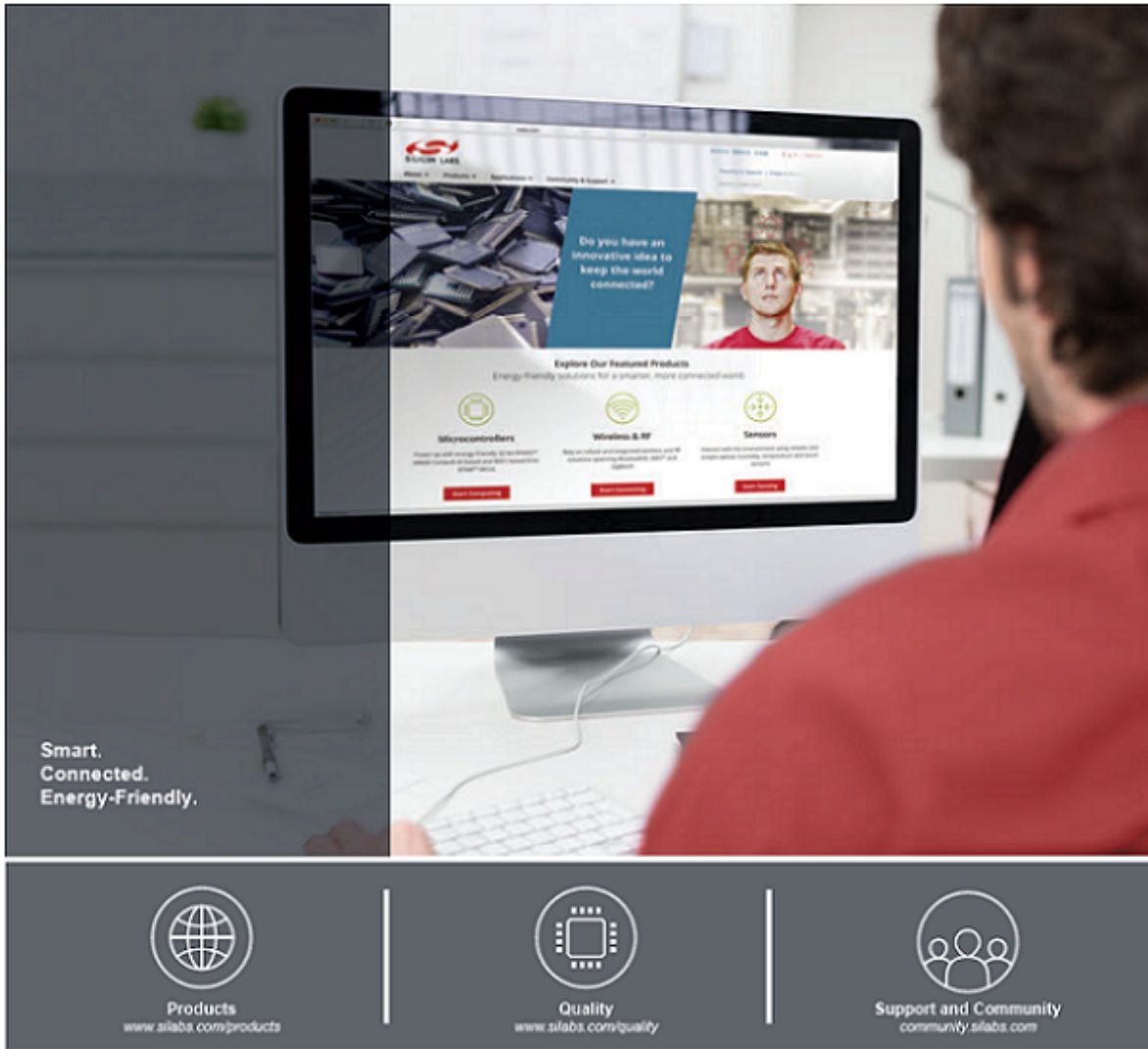
W7101F1 - Product Qualification Report Record Rev. I

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Part Rev E, TSMC Fabrication							
Test Name	Test Condition	Qualification	Lot ID of Start	Fail/Pass of End	Notes	Summary	Status
<b>Test Group A – Accelerated Environment Stress Tests - 112-LFBGA-10x10 - ASEKR</b>							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>25	Q040327	0/30	1		Pass
			Q040328	0/30	1	3 lots	
			Q040575	0/30	1	0/90	
uHAST	JA118 130°C, 85%RH 96 hours	3 lots, N=>25	Q040331	0/30	1		Pass
			Q040332	0/30	1		
			Q040572	0/30	1	4 lots	
			Q042285	0/25	1,9	0/115	
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q040329	0/30	1		Pass
			Q040330	0/30	1		
			Q040570	0/30	1	4 lots	
			Q042286	0/25	1,9	0/115	
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q040333	0/30	1		Pass
			Q040334	0/30	1	3 lots	
			Q040571	0/30	1	0/90	

Notes:

1. Parts are Pre-conditioned at MSL3/260°C
9. Using KCC substrate



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