



180215187 EFM32PG/JG12 Product Rev C

PRCN Issue Date: 2/15/2018

Effective Date: 5/21/2018

PCN Type: Product Revision

Description of Change

Silicon Labs is pleased to announce Revision C silicon for the EFM32PG12XXX and EFM32JG12XXX MCU families. The new revision includes pin-compatible replacements for the previous revision devices and results in updates to the Data Sheet and Errata.

Both family Data Sheets are updated to revision v1.1.
Both family Errata documents are updated to revision 0.4.

Refer to the updated documents for complete details.

After the effective date of this PRCN, Silicon Labs reserves the right to deliver product revision C for customers ordering product revision B.

Reason for Change

Corrected errata.

Impact on Form, Fit, Function, Quality, Reliability

No impact to form, fit, quality, or reliability.

The following functions are impacted:
-Updated device revision information in the ROM Table
-Resolved errata: ADC_E224, BL_E201, RMU_E203

Product Identification

Existing Part #	Replacement Part #	DropInCompInd.
EFM32JG12B500F1024GL125-B	EFM32JG12B500F1024GL125-C	See Data Sheet
EFM32JG12B500F1024GL125-BR	EFM32JG12B500F1024GL125-CR	See Data Sheet
EFM32JG12B500F1024GM48-B	EFM32JG12B500F1024GM48-C	See Data Sheet
EFM32JG12B500F1024GM48-BR	EFM32JG12B500F1024GM48-CR	See Data Sheet
EFM32JG12B500F1024IL125-B	EFM32JG12B500F1024IL125-C	See Data Sheet
EFM32JG12B500F1024IL125-BR	EFM32JG12B500F1024IL125-CR	See Data Sheet
EFM32JG12B500F1024IM48-B	EFM32JG12B500F1024IM48-C	See Data Sheet
EFM32JG12B500F1024IM48-BR	EFM32JG12B500F1024IM48-CR	See Data Sheet
EFM32PG12B500F1024GL125-B	EFM32PG12B500F1024GL125-C	See Data Sheet
EFM32PG12B500F1024GL125-BR	EFM32PG12B500F1024GL125-CR	See Data Sheet
EFM32PG12B500F1024GM48-B	EFM32PG12B500F1024GM48-C	See Data Sheet
EFM32PG12B500F1024GM48-BR	EFM32PG12B500F1024GM48-CR	See Data Sheet
EFM32PG12B500F1024IL125-B	EFM32PG12B500F1024IL125-C	See Data Sheet
EFM32PG12B500F1024IL125-BR	EFM32PG12B500F1024IL125-CR	See Data Sheet
EFM32PG12B500F1024IM48-B	EFM32PG12B500F1024IM48-C	See Data Sheet
EFM32PG12B500F1024IM48-BR	EFM32PG12B500F1024IM48-CR	See Data Sheet

Last Date of Unchanged Product: 5/21/2018

Qualification Samples

Samples are available upon request and from www.silabs.com.

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>.

In some cases rejection of a change notice may impact Silicon Labs product pricing, delivery, quality, or reliability.

Customer Early Acceptance Sign Off

Customers may approve early PCN acceptance by completing the information below:

Early Acceptance:

Date: _____

Name: _____

Company: _____

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

User Registration

Register today to create your account on [Silabs.com](http://www.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

See attached qualification data.

EFM32JG12 and EFM32PG12 Qualification Report



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Part Rev C, 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 - BGA							
HAST	JA110 110°C, 85%RH Vcc=3.8V, 264 hours	3 lots, N=>25	Q039924	0/28	1	3 lots 0/84	Pass
			Q039925	0/28	1		
			Q039926	0/28	1		
UFAST	JA118 130°C, 85%RH 96 hours	3 lots, N=>25	Q039915	0/28	1	3 lots 0/84	Pass
			Q039916	0/28	1		
			Q039917	0/28	1		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q039918	0/27	1	3 lots 0/83	Pass
			Q039919	0/28	1		
			Q039920	0/28	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q039921	0/27	1	3 lots 0/83	Pass
			Q039922	0/28	1		
			Q039923	0/28	1		
Test Group A – Accelerated Environment Stress Tests - QFN							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q039879	1/30	2, 5	4 lots 1/120	Pass
			Q040220	0/30	2		
			Q039877	0/30	2		
			Q039878	0/30	2		
UFAST	JA118 130°C, 85%RH 96 hours	3 lots, N=>25	Q039876	0/30	2	3 lots 0/90	Pass
			Q039875	0/30	2		
			Q039874	0/30	2		
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q039882	0/30	2	3 lots 0/90	Pass
			Q039881	0/30	2		
			Q039880	0/30	2		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q038038	0/28	2	3 lots 0/81	Pass
			Q038124	0/28	2		
			Q037590	0/25	2		

Approved by: K. Torres

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Prepared on: 28-November-2017

EFM32JG12 and EFM32PG12 Qualification Report



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Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	JA108 T _J ≥ 125°C, Dynamic V _{cc} =3.8V, 1000 hours	3 lots, N=>77	Q039946	0/77		3 lots 0/234	Pass
			Q040071	0/77			
			Q040505	0/80			
LTOL	JA108 T _A = -10°C, Dynamic V _{cc} =3.8V, 1000 hours	1 lot, N=>32	Q040261	0/35		1 lots 0/35	Pass
ELFR	JA108 T _J ≥ 125°C, Dynamic V _{cc} =3.8V, 48 hours	3 lots, N=>500	Q039943	0/500		3 lots 0/1502	Pass
			Q040035	0/502			
			Q040504	0/500			
NVM Endurance, Retention and Operating Life	JESD22-A117 25°C 500 hours	3 lots, N=>39	Q040213	0/40	3	3 lots 0/120	Pass
			Q040274	0/40	3		
			Q040278	0/40	3		
NVM Endurance, Retention and Operating Life	JESD22-A117 125°C 1000 hours	3 lots, N=>39	Q040279	0/40	4	3 lots 0/120	Pass
			Q040275	0/40	4		
			Q040214	0/40	4		
Test Group E – Electrical Verification							
ESD-HBM	JS-001	1 lot, N=>3	Q039756			2 kV	Class 2
ESD-CDM	JS-002	1 lot, N=>3	Q042226		6	1000	Class C3
			Q042221		7	1000	Class C3
Latch Up	JESD78 ±100mA	1 lot, N=>3	Q039757	25 °C			Pass
Latch Up	JESD78 ±100mA	1 lot, N=>3	Q039764	125 °C			Pass

Approved by: K. Torres

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Prepared on: 28-November-2017

EFM32JG12 and EFM32PG12 Qualification Report



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Part Rev C, TSMC Fabrication, SPIL Assembly except as noted

Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
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Notes:

1. Parts are Pre-conditioned at MSL3/260°C
2. Parts are Pre-conditioned at MSL2/260°C
3. Preconditioned with 10K write/erase cycles at 25°C
4. Preconditioned with 10K write/erase cycles at 125°C
5. Failure analysis on the failure was inconclusive. An additional 30 units were stressed from the same assembly lot (Q040220) to reduce the LTPD% below the requirement. JEDEC sample size requirement of 25 units per lot has LTPD% = 9.21 at 90% confidence with 0 fails. With larger sample size = 60, LTPD% = 6.48 at 90% confidence with 1 failure.

Notes (Continued):

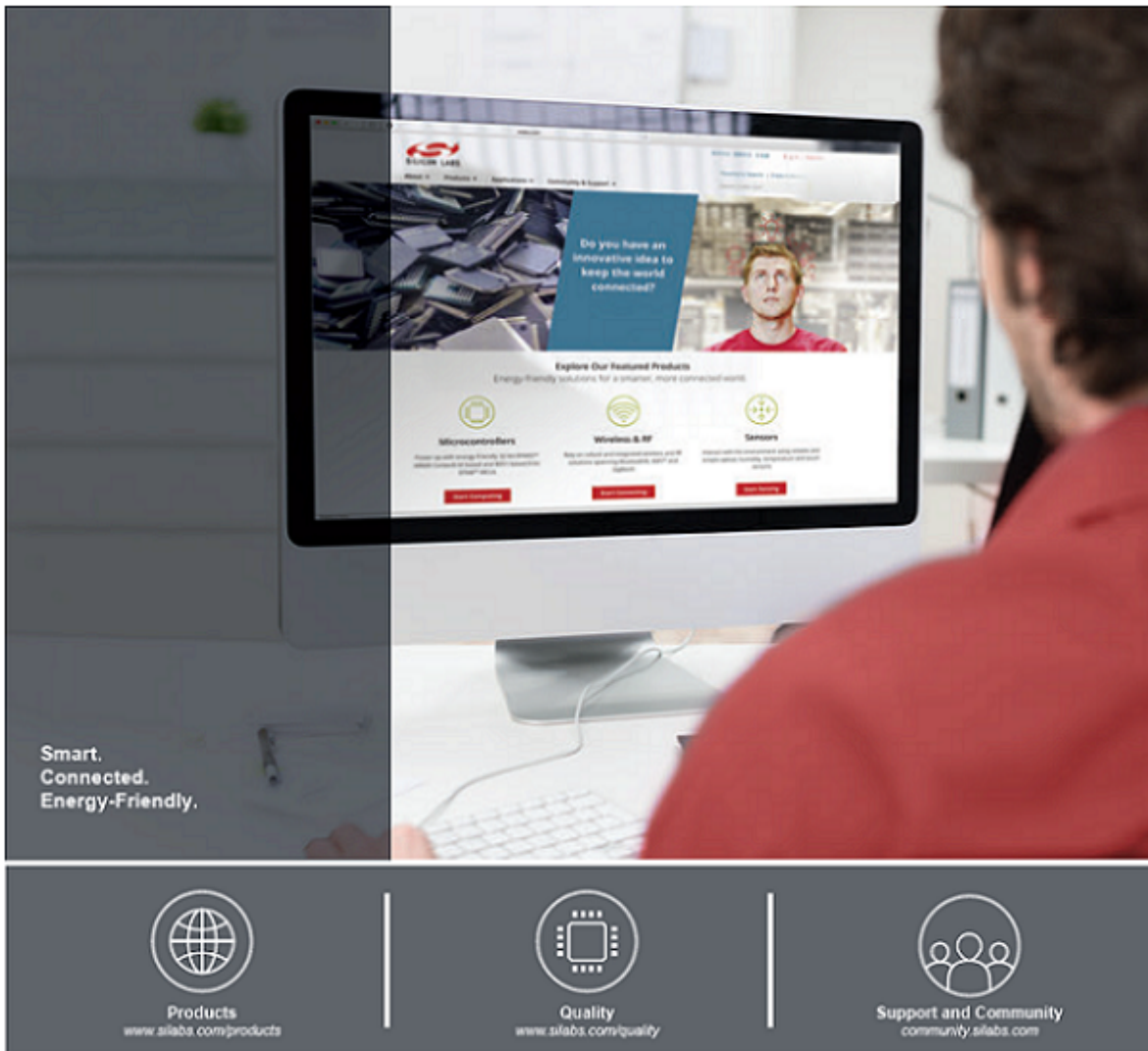
6. QFN package
7. BGA Package

This report applies to the following part numbers:	
EFM32PG12B500F1024GL125-C	EFM32JG12B500F1024GL125-C
EFM32PG12B500F1024GM48-C	EFM32JG12B500F1024GM48-C
EFM32PG12B500F1024IL125-C	EFM32JG12B500F1024IL125-C
EFM32PG12B500F1024IM48-C	EFM32JG12B500F1024IM48-C

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Silicon Laboratories Inc.
400 West Cesar Chavez
Austin, TX 78701

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