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PCN Date: 10/10/2016	Effective Date: 1/13/2017
Title: EFM8SB2 Revision B PCN	
PCN Type:	
<input checked="" type="checkbox"/> Datasheet <input checked="" type="checkbox"/> Product Revision	
PCN Details	
Description of Change: <p>Silicon Labs is pleased to announce revision B of the EFM8SB2 devices, version 0.5 of the errata, and version 1.2 of the corresponding datasheet for these products.</p> <p>Overview and major changes:</p> <p>A "Bootloader Signature Byte" has been added to the EFM8SB2 to support a factory programmed bootloader.</p> <ul style="list-style-type: none"> - Each device will use the byte immediately before the Lock Byte as a Bootloader Signature Byte to determine if the bootloader is present in flash. -Setting the Bootloader Signature Byte to a value of 0xA5 indicates the presence of the bootloader in the system. Any other value in this location indicates that the bootloader is not present in flash. <p>Datasheet version 1.2:</p> <ul style="list-style-type: none"> -Added information on the included bootloader described above. -All part numbers in the datasheet now reflect the revision change with a 'B'. -Added Power-On Reset Threshold and Power-On Reset Delay specifications for a finite Vdd value and delay times. -The feature list has been update to include that all pins are now 5V tolerant under bias. -Added a section describing the typical connection for debugging EFM8SB2. This includes pin sharing techniques of the C2 interface, refer to section 5.2 of the datasheet for more information. -In the introduction section a line was added to mention the reference manual where an individual can find more technical information on registers and blocks. <p>Errata version 0.5:</p> <ul style="list-style-type: none"> -Added information on the bootloader described above. <p>After the effective date of this PCN, Silicon Labs reserves the right to deliver EFM8SB2 Rev B for customers ordering EFM8SB2 Rev A.</p>	
Reason for Change: EFM8SB2 datasheet version 1.2 release EFM8SB2 Revision B release EFM8SB2 version 0.5 errata	



Revision Change Notice #1610102

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

This change is considered a minor change which does not affect form, fit, function, quality, or reliability.

Product Identification:

Existing Part Number	Replacement Part Number	Drop in Compatible Indicator
EFM8SB20F16G-A-QFN24	EFM8SB20F16G-B-QFN24	Yes
EFM8SB20F16G-A-QFN24R	EFM8SB20F16G-B-QFN24R	Yes
EFM8SB20F32G-A-QFN24	EFM8SB20F32G-B-QFN24	Yes
EFM8SB20F32G-A-QFN24R	EFM8SB20F32G-B-QFN24R	Yes
EFM8SB20F32G-A-QFN32	EFM8SB20F32G-B-QFN32	Yes
EFM8SB20F32G-A-QFN32R	EFM8SB20F32G-B-QFN32R	Yes
EFM8SB20F32G-A-QFP32	EFM8SB20F32G-B-QFP32	Yes
EFM8SB20F32G-A-QFP32R	EFM8SB20F32G-B-QFP32R	Yes
EFM8SB20F64G-A-QFN24	EFM8SB20F64G-B-QFN24	Yes
EFM8SB20F64G-A-QFN24R	EFM8SB20F64G-B-QFN24R	Yes
EFM8SB20F64G-A-QFN32	EFM8SB20F64G-B-QFN32	Yes
EFM8SB20F64G-A-QFN32R	EFM8SB20F64G-B-QFN32R	Yes
EFM8SB20F64G-A-QFP32	EFM8SB20F64G-B-QFP32	Yes
EFM8SB20F64G-A-QFP32R	EFM8SB20F64G-B-QFP32R	Yes

Note: The part numbers above include tape and reel variants which are denoted with an "R" at the end of the orderable part number.

Last Date of Unchanged Product: 1/13/2017

Qualification Samples:

Samples are available now. Please contact your Silicon Labs sales representative to order samples. A list of Silicon Labs sales representatives is available at www.silabs.com.



Revision Change Notice #1610102

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 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: katherine.hagggar@silabs.com

Qualification Data:

See below.

EFM8SB20Fxxx Qualification Report



W7101F1 - Product Qualification Plan and Report Record

Rev. G

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EFM8SB20Fxxx Rev B, TSMC Fabrication, Unisem/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=3.6V, 96 hours	3 lots, N=>25	Q25565 Q25562 Q25572 Q25669 Q25017 Q25183 Q25536	0/80 0/80 0/80 0/80 0/80 0/80 0/80	1 1 2 2 3 3 3	7 lots 0/560	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q25560 Q25564 Q25574 Q25665 Q25000 Q25185 Q25534	0/80 0/80 0/80 0/80 0/80 0/80 0/80	1 1 2 2 3 3 3	7 lots 0/560	Pass
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q25566 Q25563 Q25573 Q25663 Q24921 Q25137 Q25414	0/80 0/80 0/80 0/80 0/80 0/80 0/80	1 1 2 2 3 3 3	7 lots 0/560	Pass
Unbiased HAST	JA118 130°C, 85%RH, 96hr	3 lots, N=>25	Q24461 Q25571 Q25567 Q25667 Q24999 Q24184 Q25535	0/80 0/80 0/80 0/80 0/80 0/80 0/80	1 1 2 2 3 3 3	7 lots 0/560	Pass

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EFM8SB20Fxxx Rev B, TSMC Fabrication, Unisem/SPIL Assembly except as noted							
Test Group B - Accelerated Lifetime Simulation Tests - Unisem Assembly unless noted							
HTOL	JA108 125°C, Dynamic Vcc=3.6V, 1000 hours	3 lots, N=>77	Q25551 Q26146 Q26266	0/80 0/80 0/80	4	3 lots 0/240	Pass
LTOL	JA108 -10°C, Dynamic Vcc=3.6V, 1000 hours	1 lot, N=>32	Q25548	0/40	4	1 lots 0/40	Pass
ELFR	JA108 125°C, Dynamic Vcc=3.6V, 48 hours	3 lots, N=>500	Q25505 Q26046 Q26216 Q32063 Q34348	0/500 0/500 0/520 0/528 0/500		5 lots 0/2548	Pass
High Temperature Data Retention / Cycling Endurance for NVM	JE5D22-A1117 500 cycles @Vcc=1.4V 88/130°C for 500 hours	3 lots, N=>39	Q26232 Q26231 Q26235	0/40 0/40 0/40		3 lots 0/120	Pass
Low Temperature Data Retention / Cycling Endurance for NVM	JE5D22-A108 500 cycles @Vcc=1.4V 25°C for 500 hours	3 lots, N=>38	Q26233 Q26230 Q26234	0/40 0/40 0/40		3 lots 0/120	Pass
Test Group E - Electrical Verification							
ESD-HBM	JA114	1 lot, N=>3	Q26025 Q32061				2 kV
ESD-MMM	JA115	1 lot, N=>3	Q26275				225 V
ESD-CDM	JC101	1 lot, N=>3	Q26237 Q32062 Q34343				1 kV
Latch Up	JE5D78 ±200mA	1 lot, N=>6	Q25523 Q25524 Q32120 Q32119	85 C 25 C 85 C 25 C			Pass

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EFM8SB20Fxxx Rev B, TSMC Fabrication, Unisem/SPIL Assembly except as noted							
Supplemental Package Qualification Data							
Test Group A - Accelerated Environment Stress Tests - ASECL - QFN							
HAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>25	Q29385 Q29331 Q29336	0/78 0/80 0/80		3 lots 0/238	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q29387 Q29391 Q29395	0/77 0/77 0/77		3 lots 0/231	Pass
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q29388 Q29392 Q29396	0/77 0/77 0/77		3 lots 0/231	Pass
Test Group A - Accelerated Environment Stress Tests - Unisem - QFN							
HAST	JA110 130°C, 85%RH 96 hours	3 lots, N=>25	Q26130 Q29179 Q26439	0/80 0/80 0/80		3 lots 0/240	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>25	Q26129 Q26182 Q26441	0/80 0/80 0/100		3 lots 0/260	Pass
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q26131 Q26180 Q26440	0/84 0/85 0/101		3 lots 0/270	Pass

Notes:

1. SPIL 32LQFP, Precon MSL3@260C
2. SPIL 48TQFP, Precon MSL2@260C
3. SPIL 64TQFP, Precon MSL3@260C
4. Qualification performed on Carsem 32QFN

This report applies to the following part numbers:	
EFM8SB20F64G-B-QFP32	EFM8SB20F64G-B-QFN24
EFM8SB20F32G-B-QFP32	EFM8SB20F32G-B-QFN24
EFM8SB20F64G-B-QFN32	EFM8SB20F16G-B-QFN24
EFM8SB20F32G-B-QFN32	