



180216170 Adding Second Assembly & Test Source C8051F85x, C8051F86x, & EFM8BB1 QFN20

PCN Issue Date: 2/16/2018

Effective Date: 5/21/2018

PCN Type: Assembly; Test

Description of Change

Silicon Labs is pleased to announce the successful qualification of Advanced Semiconductor Engineering ChungLi (ASECL) as an additional IC assembly and test site for C8051F85x, C8051F86x, and EFM8BB1 in QFN20 packages. ASECL is an existing IC assembly supplier for Silicon Labs, certified and registered to ISO9001, ISO14001 and TS16949.

After the PCN effective date, Silicon Labs will ship product from either qualified assembly site.

Reason for Change

Capacity expansion

Impact on Form, Fit, Function, Quality, Reliability

There is no impact on fit, function, quality, or reliability. The form has changed to include Cu wire bonds.

Product Identification

EFM8BB10F4G-A-QFN20
EFM8BB10F4G-A-QFN20R
EFM8BB10F4I-A-QFN20
EFM8BB10F4I-A-QFN20R
EFM8BB10F8G-A-QFN20
EFM8BB10F8G-A-QFN20R
EFM8BB10F8I-A-QFN20
EFM8BB10F8I-A-QFN20R
EFM8BB10F2G-A-QFN20
EFM8BB10F2G-A-QFN20R
EFM8BB10F2I-A-QFN20
EFM8BB10F2I-A-QFN20R
EFM8BB10M1039F8GM-A
EFM8BB10M1039F8GM-AR
EFM8BB10M1069F8GM-A
EFM8BB10M1069F8GM-AR
EFM8BB10P1012F2GM-A
EFM8BB10P1012F2GM-AR
EFM8BB10P1072F4GM-A
EFM8BB10P1072F4GM-AR
C8051F850-C-GM
C8051F850-C-GMR
C8051F850-C-IM
C8051F850-C-IMR
C8051F851-C-GM
C8051F851-C-GMR
C8051F851-C-IM
C8051F851-C-IMR
C8051F852-C-GM

C8051F852-C-GMR
C8051F852-C-IM
C8051F852-C-IMR
C8051F853-C-GM
C8051F853-C-GMR
C8051F853-C-IM
C8051F853-C-IMR
C8051F854-C-GM
C8051F854-C-GMR
C8051F854-C-IM
C8051F854-C-IMR
C8051F855-C-GM
C8051F855-C-GMR
C8051F855-C-IM
C8051F855-C-IMR
CF850P1102CGM
CF850P1102CGMR

Last Date of Unchanged Product: 5/21/2018

Qualification Samples

Available on 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>.

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. 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 reports below.

C8051F85x.86x AEC-Q100 Qualification Report



W7101F1 - Product Qualification Plan and Report Record Rev. G

The information contained in this document is PROPRIETARY to Silicon Laboratories, Inc. and shall not be reproduced or used in part or whole without Silicon Laboratories' written consent. The document is uncontrolled if printed or electronically saved.

C8051F85x.86x Rev C, GSMC Fabrication, UTACTH and ASECL 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 - 24-QSOP - UTACTH CuPd Wire							
THB	JA101 85°C, 85%RH Vcc=3.6V, 1000 hours	3 lots, N=>77	Q34377	0/79	1		
			Q34374	0/80	1	3 lots	
			Q34090	0/80	1	0/239	Pass
UHASt	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q34376	0/80	1		
			Q34373	0/80	1	3 lots	
			Q34089	0/80	1	0/240	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q34375	0/80	1		
			Q34372	0/80	1	3 lots	
			Q34088	0/80	1	0/240	Pass
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q34120	0/81	1		
			Q34432	0/85	1	2 lots 0/166	Pass
Test Group A - Accelerated Environment Stress Tests - 20-QFN-3x3 - UTACTH Au Wire							
HASt	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q34390	0/80	1		
			Q34384	0/80	1	3 lots	
			Q34193	0/80	1	0/240	Pass
UHASt	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q34386	0/80	1		
			Q34383	0/80	1	3 lots	
			Q34184	0/80	1	0/240	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q34385	0/80	1		
			Q34382	0/80	1	4 lots	
			Q34192	0/80	1	0/317	Pass
			Q40860	0/77	1		
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q34342	0/50	1	1 lots 0/50	Pass

Approved by: Vincent Hidajat

1 of 4

Prepared on: 23-Feb-17

C8051F85x.86x AEC-Q100 Qualification Report



W7101F1 - Product Qualification Plan and Report Record Rev. G

The information contained in this document is PROPRIETARY to Silicon Laboratories, Inc. and shall not be reproduced or used in part or whole without Silicon Laboratories' written consent. The document is uncontrolled if printed or electronically saved.

C8051F85x.86x Rev C, GSMC Fabrication, UTACTH and ASECL 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 - 20-QFN-3x3 - ASECL CuPd Wire							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q035864	0/80	1		
			Q035863	0/80	1	3 lots	
			Q035862	0/80	1	0/240	Pass
UHAST	JA110 130°C, 85%RH Vcc=3.6V, 192 hours	3 lots, N=>77	Q035861	0/84	1		
			Q035859	0/85	1	3 lots	
			Q035858	0/81	1	0/250	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q035857	0/85	1		
			Q035856	0/78	1	3 lots	
			Q035855	0/85	1	0/248	Pass
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q035854	0/30	1		
			Q035847	0/30	1	3 lots	
			Q035846	0/30	1	0/90	Pass
Test Group A - Accelerated Environment Stress Tests - 16-SOIC - UTACTH Au Wire							
HAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q34364	0/78	1		
			Q34361	0/80	1	3 lots	
			Q34191	0/80	1	0/238	Pass
UHAST	JA110 130°C, 85%RH Vcc=3.6V, 96 hours	3 lots, N=>77	Q34363	0/80	1		
			Q34359	0/80	1	3 lots	
			Q34189	0/78	1	0/238	Pass
Temp Cycle	JA104 Cond C: -65°C to 150°C 500 cycles	3 lots, N=>77	Q34362	0/80	1		
			Q34360	0/80	1	3 lots	
			Q34190	0/80	1	0/240	Pass
HTSL	JA103 150°C, 1000hr	1 lot, N=>45	Q34334	0/50	1	1 lots 0/50	Pass

Approved by: Vincent Hidajat

2 of 4

Prepared on: 23-Feb-17

C8051F85x.86x AEC-Q100 Qualification Report



W7101F1 - Product Qualification Plan and Report Record Rev. G

The information contained in this document is PROPRIETARY to Silicon Laboratories, Inc. and shall not be reproduced or used in part or whole without Silicon Laboratories' written consent. The document is uncontrolled if printed or electronically saved.

C8051F85x.86x Rev C, GSMC Fabrication, UTACTH and ASECL Assembly except as noted							
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 125°C, Dynamic Vcc=3.6V, 1000 hours	3 lots, N=>77	Q34435	0/15	6		
			Q34434	0/84	6		
			Q34753	0/99	6	4 lots	
			Q34773	0/88	6	0/286	Pass
ELFR	AEC-Q100-008 125°C, Dynamic Vcc=3.6V, 48 hours	3 lots, N=>800	Q34414	0/809		3 lots	
			Q34752	0/826			
			Q34012	0/829		0/2464	Pass
HTDR	AEC-Q100-005 150°C, 1000 hours	3 lots, N=>77	Q34432	0/85	6		
			Q34433	0/15	6		
			Q34775	0/99	6	7 lots	
			Q34774	0/100	6	0/579	Pass
			Q35080	0/86	8		
			Q35081	0/87	8		
LTDR	AEC-Q100-005 25°C, 1000 hours	3 lots, N=>77	Q34436	0/82	7		
			Q34778	0/100	7		
			Q34776	0/100	7	4 lots	
			Q34437	0/15	7	0/297	Pass
Test Group E - Electrical Verification							
ESD-HBM	AEC-Q100-002	1 lot, N=>3	Q34017				2000 V
ESD-MM	AEC-Q100-003	1 lot, N=>3	Q34018				150 V
ESD-CDM	AEC-Q100-011	1 lot, N=>3	Q34457		2		1250 V
			Q34415		3		1250 V
			Q34481		4		1500 V
			Q35881		5		1500 V
Latch Up	AEC-Q100-004 ±200mA	1 lot, N=>6	Q34412 Q24413	125 C 25 C			Pass
Gate Leakage	AEC-Q100-006	1 lot, N=>6	Q34211				Pass

Approved by: Vincent Hidajat

3 of 4

Prepared on: 23-Feb-17

C8051F85x.86x AEC-Q100 Qualification Report



W7101F1 - Product Qualification Plan and Report Record Rev. G

The information contained in this document is PROPRIETARY to Silicon Laboratories, Inc. and shall not be reproduced or used in part or whole without Silicon Laboratories' written consent. The document is uncontrolled if printed or electronically saved.

C8051F85x.86x Rev C, GSMC Fabrication, UTACTH and ASECL Assembly except as noted							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status

Notes:

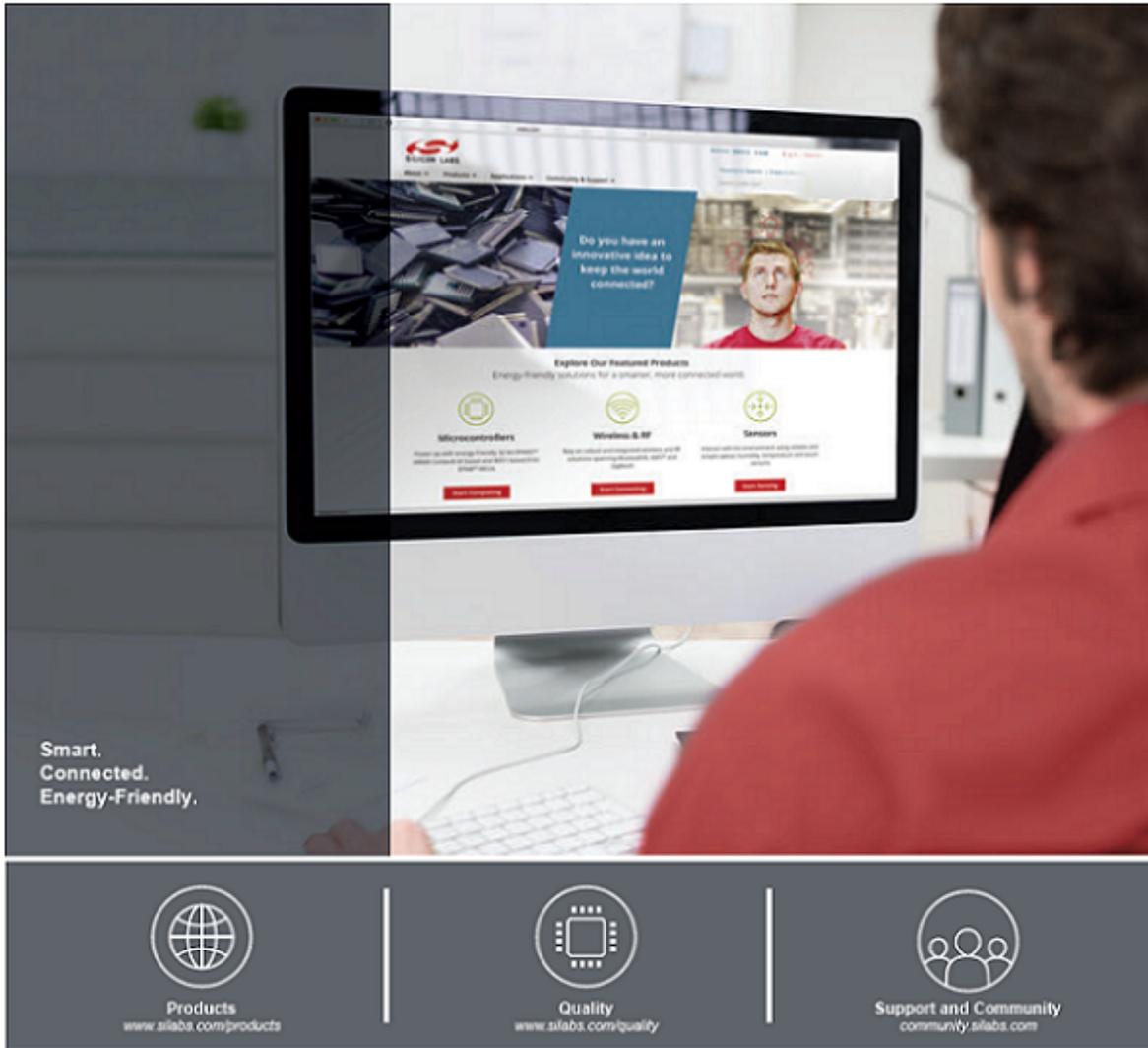
1. Parts are Pre-conditioned at MSL2/260°C
2. 16-SOIC
3. 24-QSOP
4. 20-QFN UTACTH
5. 20-QFN ASECL
6. Device are preconditioned with 20K program/erase endurance cycling at 85°C
7. Device are preconditioned with 20K program/erase endurance cycling at 55°C
8. Device are preconditioned with 20K program/erase endurance cycling at 125°C

This report applies to the following part numbers:				
C8051F850-C-GM	C8051F850-C-GU	C8051F850-C-IM	C8051F850-C-IU	C8051F850-C-YM
C8051F851-C-GM	C8051F851-C-GU	C8051F851-C-IM	C8051F851-C-IU	C8051F850-G1DI
C8051F852-C-GM	C8051F852-C-GU	C8051F852-C-IM	C8051F852-C-IU	C8051F850-GDI
C8051F853-C-GM	C8051F853-C-GU	C8051F853-C-IM	C8051F853-C-IU	
C8051F854-C-GM	C8051F854-C-GU	C8051F854-C-IM	C8051F854-C-IU	
C8051F855-C-GM	C8051F855-C-GU	C8051F855-C-IM	C8051F855-C-IU	
C8051F860-C-GS	C8051F860-C-IS			
C8051F861-C-GS	C8051F861-C-IS			
C8051F862-C-GS	C8051F862-C-IS			
C8051F863-C-GS	C8051F863-C-IS			
C8051F864-C-GS	C8051F864-C-IS			
C8051F865-C-GS	C8051F865-C-IS			

Approved by: Vincent Hidajat

4 of 4

Prepared on: 23-Feb-17



Disclaimer

Silicon Labs intends to provide customers with the latest, accurate, and in-depth documentation of all peripherals and modules available for system and software implementers using or intending to use the Silicon Labs products. Characterization data, available modules and peripherals, memory sizes and memory addresses refer to each specific device, and "Typical" parameters provided can and do vary in different applications. Application examples described herein are for illustrative purposes only. Silicon Labs reserves the right to make changes without further notice and limitation to product information, specifications, and descriptions herein, and does not give warranties as to the accuracy or completeness of the included information. Silicon Labs shall have no liability for the consequences of use of the information supplied herein. This document does not imply or express copyright licenses granted hereunder to design or fabricate any integrated circuits. The products are not designed or authorized to be used within any Life Support System without the specific written consent of Silicon Labs. A "Life Support System" is any product or system intended to support or sustain life and/or health, which, if it fails, can be reasonably expected to result in significant personal injury or death. Silicon Labs products are not designed or authorized for military applications. Silicon Labs products shall under no circumstances be used in weapons of mass destruction including (but not limited to) nuclear, biological or chemical weapons, or missiles capable of delivering such weapons.

Trademark Information

Silicon Laboratories Inc.®, Silicon Laboratories®, Silicon Labs®, SiLabs® and the Silicon Labs logo®, Bluegiga®, Bluegiga Logo®, Clockbuilder®, CMEMS®, DSPLL®, EFM®, EFM32®, EFR, Ember®, Energy Micro, Energy Micro logo and combinations thereof, "the world's most energy friendly microcontrollers", Ember®, EZLink®, EZRadio®, EZRadioPRO®, Gecko®, ISModem®, Micrium, Precision32®, ProSLIC®, Simplicity Studio®, SiPHY®, Telegesis, the Telegesis Logo®, USBXpress®, Zentri and others are trademarks or registered trademarks of Silicon Labs. ARM, CORTEX, Cortex-M3 and THUMB are trademarks or registered trademarks of ARM Holdings. Keil is a registered trademark of ARM Limited. All other products or brand names mentioned herein are trademarks of their respective holders.



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

<http://www.silabs.com>