



181025372 Alternate Assembly and Test Site for Pearl Gecko and Jade Gecko

PCN Issue Date: 10/25/2018

Effective Date: 1/31/2019

PCN Type: Assembly; Test

Description of Change

Silicon Labs is pleased to announce the successful qualification of UTAC Thailand (UTL) as an additional assembly and test site. There were no changes to the test program, data sheet parameters, test platform, or test hardware in the qualification of the additional test site. UTL is an existing Assembly site for Silicon Labs, and is certified to ISO9001, ISO14001 and IATF 16949.

UTL 1 Address - Assembly Site
UTAC Thai Limited (UTL 1)
237 Lasalle Rd. (Sukhumvit 105)
Bangna, Bangkok 10260, Thailand

UTL3 Address - Test Site
UTAC Thai Limited (UTL3)
73 Moo5, Wellgrow Industrial Estate
Bangsamak, Bangpakong,
Chachoengsao, 24180, Thailand

As of the effective date of the PCN, Silicon Labs may assemble and test from either of the qualified assembly and test sites.

Reason for Change

The additional assembly and test location will provide additional capacity for supply assurance.

Impact on Form, Fit, Function, Quality, Reliability

There is no impact on form, fit, function, quality, and reliability. The devices assembled and tested at UTAC will comply with Silicon Labs' relevant datasheets and quality levels.

Product Identification

Existing Part #
EFM32JG1B100F128GM32-C0
EFM32JG1B100F128GM32-C0R
EFM32JG1B100F256GM32-C0
EFM32JG1B100F256GM32-C0R
EFM32JG1B100F256IM32-C0
EFM32JG1B100F256IM32-C0R
EFM32JG1B200F128GM32-C0
EFM32JG1B200F128GM32-C0R
EFM32JG1B200F128GM48-C0
EFM32JG1B200F128GM48-C0R
EFM32JG1B200F256GM32-C0
EFM32JG1B200F256GM32-C0R
EFM32JG1B200F256GM48-C0
EFM32JG1B200F256GM48-C0R
EFM32JG1B200F256IM32-C0
EFM32JG1B200F256IM32-C0R
EFM32JG1B200F256IM48-C0
EFM32JG1B200F256IM48-C0R

EFM32PG1B100F128GM32-C0
EFM32PG1B100F128GM32-C0R
EFM32PG1B100F256GM32-C0
EFM32PG1B100F256GM32-C0R
EFM32PG1B100F256IM32-C0
EFM32PG1B100F256IM32-C0R
EFM32PG1B200F128GM32-C0
EFM32PG1B200F128GM32-C0R
EFM32PG1B200F128GM48-C0
EFM32PG1B200F128GM48-C0R
EFM32PG1B200F256GM32-C0
EFM32PG1B200F256GM32-C0R
EFM32PG1B200F256GM48-C0
EFM32PG1B200F256GM48-C0R
EFM32PG1B200F256IM32-C0
EFM32PG1B200F256IM32-C0R
EFM32PG1B200F256IM48-C0
EFM32PG1B200F256IM48-C0R

Note: The part number list impacts custom part numbers of the above base part numbers.

Last Date of Unchanged Product: 1/31/2019

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

Qualification data for assembly is attached in the Appendix.

EFM32PG1BXXX and EFM32JG1BXXX Rev C0

Qualification Report



SILICON LABS

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.

Part Rev C0, 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 - 7x7 QFN | | | | | | | |
| HAST | JA110 130°C, 85%RH Vcc=3.8V, 96 hours | 3 lots, N=25 | Q038584 Q038040 Q037588 | 0/43 0/28 0/25 | 1 1 1 | 3 lots 0/96 | Pass |
| UHAST | JA110 130°C, 85%RH Vcc=3.8V, 96 hours | 3 lots, N=25 | Q038123 Q038039 Q037724 | 0/28 0/28 0/27 | 1 1 1 | 3 lots 0/83 | Pass |
| Temp Cycle | JA104 Cond C: -65°C to 150°C 500 cycles | 3 lots, N=25 | Q037586 Q038041 Q038121 | 0/25 0/28 0/27 | 1 1 1 | 3 lots 0/80 | Pass |
| HTSL | JA103 150°C, 1000hr | 3 lots, N=25 | Q038038 Q038124 Q037590 | 0/28 0/28 0/25 | 1 1 1 | 3 lots 0/81 | Pass |
| Test Group A – Accelerated Environment Stress Tests - 5x5 QFN | | | | | | | |
| HAST | JA110 130°C, 85%RH Vcc=3.8V, 96 hours | 3 lots, N=25 | Q038584 Q038040 Q037588 | 0/43 0/28 0/25 | 1 1 1 | 3 lots 0/96 | Pass |
| UHAST | JA110 130°C, 85%RH Vcc=3.8V, 96 hours | 3 lots, N=25 | Q038014 Q038013 Q037772 | 0/35 0/35 0/27 | 1 1 1 | 3 lots 0/97 | Pass |
| Temp Cycle | JA104 Cond C: -65°C to 150°C 500 cycles | 3 lots, N=25 | Q037776 Q038010 Q038009 | 0/27 0/35 0/35 | 1 1 1 | 3 lots 0/97 | Pass |
| HTSL | JA103 150°C, 1000hr | 3 lots, N=25 | Q038012 Q038011 Q037774 | 0/35 0/35 0/27 | 1 1 1 | 3 lots 0/97 | Pass |
| Test Group A – Accelerated Environment Stress Tests - 5x5 QFN - UTACTH | | | | | | | |
| HAST | JA110 130°C, 85%RH Vcc=3.8V, 96 hours | 3 lots, N=25 | Q039547 Q039546 Q039516 | 0/30 0/30 0/30 | 1 1 1 | 3 lots 0/90 | Pass |
| UHAST | JA110 130°C, 85%RH Vcc=3.8V, 96 hours | 3 lots, N=77 | Q039543 Q039542 Q039518 | 0/30 0/30 0/30 | 1 1 1 | 3 lots 0/90 | Pass |
| Temp Cycle | JA104 Cond C: -65°C to 150°C 500 cycles | 3 lots, N=25 | Q039545 Q039544 Q039517 | 0/30 0/30 0/30 | 1 1 1 | 3 lots 0/90 | Pass |
| HTSL | JA103 150°C, 1000hr | 3 lots, N=25 | Q039539 Q039538 Q039519 | 0/30 0/30 0/30 | 1 1 1 | 3 lots 0/90 | Pass |

Approved by: K. Torres

1 of 3

Prepared on: 25 June 2018

EFM32PG1BXXX and EFM32JG1BXXX Rev C0

Qualification Report



SILICON LABS

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.

Part Rev C0, 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 - 7x7 QFN - UTACTH | | | | | | | |
| HAST | JA110 130°C, 85%RH Vcc=3.8V, 96 hours | 3 lots, N>=25 | Q040183 | 0/29 | 1 | | |
| | | | Q040184 | 0/30 | 1 | | |
| | | | Q040139 | 0/30 | 1 | 4 lots | Pass |
| | | | Q040185 | 0/30 | 1 | 0/119 | |
| UHAST | JA110 130°C, 85%RH 96 hours | 3 lots, N>=77 | Q040192 | 0/30 | 1 | | |
| | | | Q040193 | 0/30 | 1 | 3 lots | Pass |
| | | | Q040194 | 0/30 | 1 | 0/90 | |
| Temp Cycle | JA104 Cond C: -65°C to 150°C 500 cycles | 3 lots, N>=25 | Q040189 | 0/30 | 1 | | |
| | | | Q040190 | 0/30 | 1 | 3 lots | Pass |
| | | | Q040191 | 0/30 | 1 | 0/90 | |
| HTSL | JA103 150°C, 1000hr | 3 lots, N>=25 | Q040186 | 0/30 | 1 | | |
| | | | Q040187 | 0/30 | 1 | 3 lots | Pass |
| | | | Q040188 | 0/30 | 1 | 0/90 | |
| Test Group B – Accelerated Lifetime Simulation Tests | | | | | | | |
| HTOL | JA108 T _J = 125°C, Dynamic Vcc=3.8V, 1000 hours | 3 lots, N>=77 | Q038136 | 0/80 | | | |
| | | | Q038102 | 0/53 | | | |
| | | | Q037998 | 0/78 | | 4 lots | Pass |
| | | | Q037622 | 0/79 | | 0/290 | |
| LTOL | JA108 T _A = -10°C, Dynamic Vcc=3.8V, 1000 hours | 1 lot, N>=32 | Q037624 | 0/40 | | 1 lots 0/40 | Pass |
| ELFR | JA108 T _J = 125°C, Dynamic Vcc=3.8V, 48 hours | 3 lots, N>=500 | Q038755 | 0/501 | | | |
| | | | Q037570 | 0/508 | | | |
| | | | Q037999 | 0/507 | | 4 lots | Pass |
| | | | Q038137 | 0/505 | | 0/2021 | |

Approved by: K. Torres

2 of 3

Prepared on: 25 June 2018

EFM32PG1BXXX and EFM32JG1BXXX Rev C0

Qualification Report



SILICON LABS

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.

Part Rev C0, TSMC Fabrication, SPIL Assembly except as noted

| Test Name | Test Condition | Qualification | Lot ID or Start | Fail/Pass or End | Notes | Summary | Status |
|---|-------------------------------------|---------------|--------------------|------------------|--------|-----------------|----------|
| NVM Endurance, Retention and Operating Life | JEDEC22-A117 25°C 500 hours | 3 lots, N=>39 | Q038148 | 0/40 | 2 | 3 lots 0/120 | Pass |
| | | | Q038147 | 0/40 | 2 | | |
| | | | Q037725 | 0/40 | 2 | | |
| NVM Endurance, Retention and Operating Life | JEDEC22-A117 125°C 1000 hours | 3 lots, N=>39 | Q038066 | 0/40 | 3 | 4 lots 1/159 | Pass |
| | | | Q038028 | 0/40 | 3 | | |
| | | | Q038024 | 1/39 | 3, 4 | | |
| | | | Q037652 | 0/40 | 3 | | |
| Test Group E – Electrical Verification | | | | | | | |
| ESD-HBM | JA114 | 1 lot, N=>3 | Q038744 | | | | Class 2 |
| ESD-CDM | JC101 | 1 lot, N=>3 | Q039297 | | 5 | | Class C3 |
| | | | Q039296 | | 6 | | Class C3 |
| | | | Q042324 | | 7 | | Class C3 |
| | | | Q042638 | | 8 | | Class C3 |
| Latch Up | JEDEC78 ±100mA | 1 lot, N=>3 | Q039298 Q039300 | 25 °C 25 °C | 5 6 | | Pass |
| Latch Up | JEDEC78 ±100mA | 1 lot, N=>3 | Q039299 Q039301 | 125 °C 125 °C | 5 6 | | 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. Failure analysis on the failure was inconclusive. An additional 40 units were stressed from the same wafer lot (Q038028) to reduce the LTPD% below the requirement. LTPD% = 5.76 at 90% confidence with 0 fails and a sample size = 40. LTPD% = 4.80 at 90% confidence with 1 failure and a sample size = 80.
5. Results for the 7x7 QFN Package assembled at SPIL
6. Results for the 5x5 QFN package assembled at SPIL
7. Results for the 7x7 QFN package assembled at UTACTH
8. Results for the 5x5 QFN package assembled at UTACTH

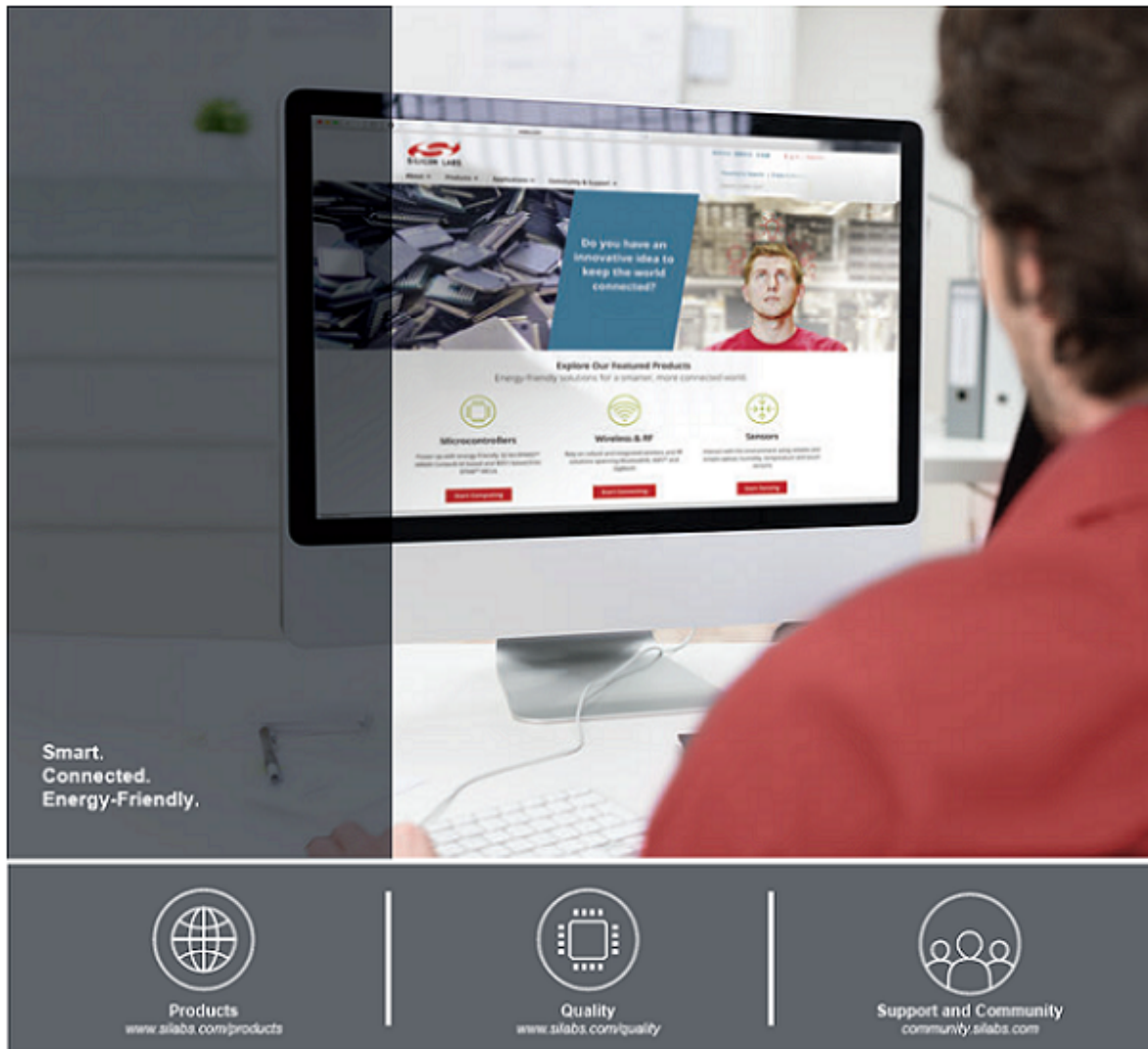
This report applies to the following part numbers:

| | | |
|-------------------------|-------------------------|-------------------------|
| EFM32PG1B100F128GM32-C0 | EFM32PG1B200F256GM48-C0 | EFM32JG1B200F128GM32-C0 |
| EFM32PG1B100F256GM32-C0 | EFM32PG1B200F256IM32-C0 | EFM32JG1B200F128GM48-C0 |
| EFM32PG1B100F256IM32-C0 | EFM32PG1B200F256IM48-C0 | EFM32JG1B200F256GM32-C0 |
| EFM32PG1B200F128GM32-C0 | EFM32JG1B100F128GM32-C0 | EFM32JG1B200F256GM48-C0 |
| EFM32PG1B200F128GM48-C0 | EFM32JG1B100F256GM32-C0 | EFM32JG1B200F256IM32-C0 |
| EFM32PG1B200F256GM32-C0 | EFM32JG1B100F256IM32-C0 | EFM32JG1B200F256IM48-C0 |

Approved by: K. Torres

3 of 3

Prepared on: 25 June 2018



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®, ISOModem®, 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>