



PCN No: PCN1-110704

Qualification of selected products at additional assembly and test sites

A decorative graphic on the right side of the page, consisting of a series of concentric circles in shades of green and blue. The numbers 0, 1, 2, 3, and 4 are arranged in a horizontal line across the circles, with 0 being the largest and 4 being the smallest.

Initial Change Notification

Date: 7/04/2011

This is an initial announcement of change to a device that is currently offered by Energy Micro. The details of this change are on the following pages.

This notice does not change the end-of-life status of any product.

We request your acknowledge receipt of this notification within 30 days of the date of this notice. If no response is received within 30 days, this change will be assumed to meet your approval. If you require samples to conduct an evaluation, please make any request within the 30 days.

The changes discussed within this PCN will not take effect any earlier than 90 days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change.

Sincerely,

Viggo Gronli

Product Manager

1. Affected Products

The devices listed on this page are the complete list of affected devices.

Device	Package
EFM32G200F16	QFN32
EFM32G200F32	QFN32
EFM32G200F64	QFN32
EFM32G210F128	QFN32
EFM32G230F32	QFN64
EFM32G230F64	QFN64
EFM32G230F128	QFN64
EFM32G840F32	QFN64
EFM32G840F64	QFN64
EFM32G840F128	QFN64
EFM32G290F32	BGA112
EFM32G290F64	BGA112
EFM32G290F128	BGA112
EFM32G890F32	BGA112
EFM32G890F64	BGA112
EFM32G890F128	BGA112

Please see the next pages for technical details of this product change.

PCN Number	PCN1-110704	PCN Date	7/04/2011
Title	Qualification of selected products at additional assembly and test site		
Customer Contact	Contact name: Viggo Gronli Title: Product Manager Phone No: +47 23 00 98 00 Fax No: +47 23 00 98 01 E-mail: v.gronli@energymicro.com		
Proposed first ship date	October 3 rd 2011		
Change classification and type	<input checked="" type="checkbox"/> Major <input type="checkbox"/> Minor		
<input checked="" type="checkbox"/> Assembly site	<input type="checkbox"/> Assembly process	<input checked="" type="checkbox"/> Assembly materials	
<input type="checkbox"/> Design	<input type="checkbox"/> Electrical specification	<input type="checkbox"/> Mechanical specification	
<input checked="" type="checkbox"/> Test site	<input checked="" type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test process	
<input type="checkbox"/> Wafer bump site	<input type="checkbox"/> Wafer bump material	<input type="checkbox"/> Wafer bump process	
<input type="checkbox"/> Wafer fab site	<input type="checkbox"/> Wafer fab materials	<input type="checkbox"/> Wafer fab process	

PCN Details

Description of Change(s):

Energy Micro is pleased to announce the qualification of selected products at additional assembly and test sites for devices listed in "Product Affected" section.

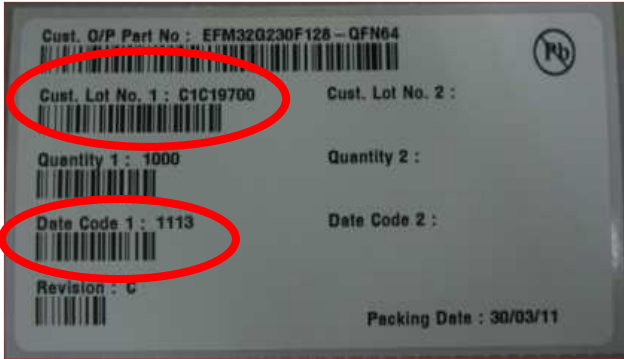
Currently Qualified Site:
UTAC Singapore (assembly and test)

Additional Site:
ASE Korea (assembly and test)

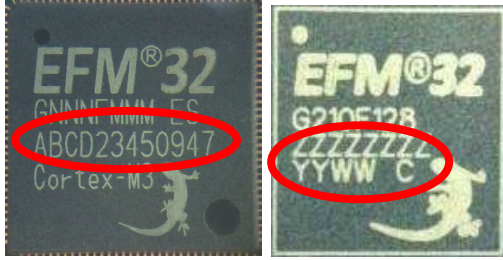
Bill Of Material

Package type	Material type	Current	New
BGA	Mold Compound	Nitto Denko GE-100LC	Sumikon EME-G760L
BGA	Die Attach	Yizbond NC7720	Ablebond 2025D
BGA	Bond wire	99.99% Au, AW66 Ø20.3um	Cu/Pd, Ø25.4um
BGA	Substrate	Mitsubishi HL832NXA	Doosan Corp DS-7409HG B
BGA	Solder mask	Taiyo PSR4000AUS308	Taiyo PSR4000AUS308
BGA	Solder ball	96.5Sn/3.0Ag/0.5Cu, Dia 0.45mm	98.5Sn/1.0Ag/0.5Cu, 0.46mm
QFN	Mold Compound	Hitachi CEL9220HF10	Sumikon EME-G700
QFN	Die Attach	Ablebond 3230	Hitachi EN4900GC
QFN	Bond wire	99.99% Au, AW66 Ø20.3um	Cu/Pd, Ø25.4um
QFN	Leadframe	PPF-C194	PPF-C194

All new material is Green and free of Antimony and Bromine. All affected products will still be RoHS and REACH compliant.

Tray and Tape			
Material	Current	New	
Tray for QFN32	Peak TX QFN0606 1.0 1435 6 rev D	Daewon JQFA-0606-0.85T	
Tray for QFN64	Daewon JMFA-0909-0.85T	Daewon JQFA-0909-0.85T	
Tray for BGA112	UBoT UB10101.50823XA	Daewon JCL-1010-1.04T	
Tape for QFN32	Advantec T102532AT	BI EMT Co K50999A732J	
Tape for QFN64	Advantec T102535AT	Advantec T102535AT	
Tape for BGA112	Advantec T102786AT	Kostat KS-2416-384	
There are no changes in number of units per tray or tape&reel, nor the reel size.			
Internal, External boxes and labels			
The internal and external boxes will be similar to current boxes, but originates from a different vendor. The labels will match the current and contain the same information.			
Changes to package outline			
Package type	Parameter	Current	New
BGA112	Package height	Max: 1.38mm	Max: 1.3mm
BGA112	Ball diameter	Typ: 0.47mm	Typ: 0.48mm
These are the only changes to the package outlines.			
Reason for Change(s): Continuity of supply			
Anticipated impact on Form, Fit, Function, Quality or Reliability: None.			
Changes to product identification resulting from this PCN:			
To be able to identify the material coming from the new sites, the FAB lot code and date code should be used. These codes are on both the labels and the top markings.			
Sample product shipping label (not actual product label):			
			

Sample top marking (not actual marking):



The following FAB lot codes are from the new production line

C2G637.00

C2K519.00

, and date code made after 1132 (YYWW = Year and week)

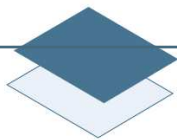
Qualification Data:

Qualification Vehicle 1: EFM32G840F128			
Qualification: <input checked="" type="checkbox"/> Plan <input type="checkbox"/> Test results			
Reliability Test	Specifications	Conditions	Sample Size (Pass/Fail)
Moisture Sensitivity Level*	J-STD-020D, JESD22-A113	30°C / 60%RH, reflow 260°C	450
Temperature Cycling (TC)	JESD22-A104	-65°C/150°C, 1000 cycles	77/0
High Temperature Storage (HTS)	JESD22-A103	150°C / Nitrogen Environment, 1000 hrs	77/0
Autoclave (PCT)	JESD22-A102	121°C / 100% RH, 96 hrs	77/0
Biased HAST	JESD22-A110	130°C / 85%RH, 3.3V, 96 hrs	77/0

* Samples for moisture sensitivity are subsequently populated for the other reliability tests.

Qualification Vehicle 2: EFM32G890F128			
Qualification: <input checked="" type="checkbox"/> Plan <input type="checkbox"/> Test results			
Reliability Test	Specifications	Conditions	Sample Size (Pass/Fail)
Moisture Sensitivity Level*	J-STD-020D, JESD22-A113	30°C / 60%RH, reflow 260°C	450
Temperature Cycling (TC)	JESD22-A104	-55°C/125°C, 1000 cycles	77/0
High Temperature Storage (HTS)	JESD22-A103	150°C / Nitrogen Environment, 1000 hrs	77/0
HAST	JESD22-A102	130°C / 85%RH, 96 hrs	77/0
Biased HAST	JESD22-A110	130°C / 85%RH, 3.3V, 96 hrs	77/0

* Samples for moisture sensitivity are subsequently populated for the other reliability tests.



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