

KIOXIA Corporation

2-5-1, Kasama, Sakae-ku, Yokohama, 247-8585 Japan

PHONE: 81-45-890-2538

Date: June 15, 2022

Ref. No.: 22MQ-G004-1(E)

To: _____

Product Change Notification

We would like to notify you that KIOXIA will be adding an assembly site for stable supply of products. Please see the product changes described below.

1. Affected products

24nm SLC NAND/BENAND™ 6.5x8mm BGA package products

Memory Density	Configuration	Voltage (Vcc)	Part Number
2Gbit	2Gbit BENAND x 1stack	3.3V	TC58BVG1S3HBAI6
		1.8V	TC58BYG1S3HBAI6
	2Gbit SLC NAND x 1stack	1.8V	TC58NYG1S3HBAI6
4Gbit	4Gbit SLC NAND x 1stack	3.3V	TC58BVG2S0HBAI6

2. Change description

- We are planning to add the assembly site as follows.

	Current	Additional
Assembly site	Amkor Assembly and Test (Shanghai) Co., Ltd. ("Amkor (Shanghai)")	Powertech Technology Inc. ("PTI")

- At the additional assembly site PTI,
 - BGA package materials such as die attach film (DAF) material and bonding wire material will be changed.
 - The composition ratio of the mold resin material will be changed.
 - The diameter of the bonding wire will be also changed.
 - There is no change for dimensions and specification.

3. Reason for change

To establish the production capability and for stable supply of products.

4. Implementation schedule

Once approved by our customers, we will start delivery as soon as the products become available.

5. Reliability Data and evaluation samples availability

- Moisture resistance test (MRT), Highly accelerated stress test (HAST) and Temperature cycling (TC) results showed no failures. For reliability test data, please see the attached file.
- Evaluation samples are available.
If you need evaluation samples, please contact our sales representatives.

6. Method to identify the products

The products assembled at the current site and the additional site can be identified by the following methods.


Status	Assembly site	Country/Region of origin	Control code	ADDC
Current	Amkor (Shanghai)	CHINA	KAE	J##
Additional	PTI	TAIWAN	9AE	B##

7. Others

If you have any questions or requests regarding this subject, please contact our sales representatives.

We appreciate your understanding and cooperation.

Sincerely,



Fumito Katafuchi

Group Manager

Memory Customer Quality Engineering Group

Memory Q&R Engineering Department

KIOXIA Corporation

Attachment to PCN #22MQ-G004-1

June 2022

KIOXIA Corporation
Memory Division
Memory Quality & Reliability Engineering Dept.

Confidential

Affected Products and Change Description

24nm SLC NAND/BENAND™ 6.5x8mm BGA package products

Memory Density	Configuration	Voltage (Vcc)	Part Number
2Gbit	2Gbit BENAND x 1stack	3.3V	TC58BVG1S3HBAI6
		1.8V	TC58BYG1S3HBAI6
	2Gbit SLC NAND x 1stack	1.8V	TC58NYG1S3HBAI6
4Gbit	4Gbit BENAND x 1stack	3.3V	TC58BVG2S0HBAI6

Package type :

P-VFBGA67-0608-0.80-001

Change description:

- The assembly site will be added.
- BGA package materials such as die attach film (DAF) material and bonding wire material will be changed.
- The composition ratio of the mold resin will be changed.
- The diameter of the bonding wire will be changed.

Package Reliability Test Results

22MQ-G004-1
Attachment

Test	Condition	Sample Size	Number of Failures
Moisture Resistance Test (MRT)	Bake 125°C/20h →30°C/70%RH/192h →Reflow(260°C maximum x 4times)	60p	0p
Highly Accelerated Stress Test (HAST) #	110°C, 85%RH, Vcc=3.6V, 300h	100p	0p
Temperature Cycling (TC) #	-55°C to 125°C, 700cycles	100p	0p

#: Note: As a pre-conditioning, the samples were subjected to 125°C for 20h, 30°C/70%RH for 192h and 4 cycles of reflow at 260°C maximum.

The package reliability test results showed no failures.

These reliability data are experimental results to be used for reference.

KIOXIA

RESTRICTIONS ON PRODUCT USE

KIOXIA Corporation and its subsidiaries and affiliates are collectively referred to as “KIOXIA”. Hardware, software and systems described in this document are collectively referred to as “Product”.

- KIOXIA reserves the right to make changes to the information in this document and related Product without notice.
- This document and any information herein may not be reproduced without prior written permission from KIOXIA. Even with KIOXIA’s written permission, reproduction is permissible only if reproduction is without alteration/omission.
- Though KIOXIA works continually to improve Product’s quality and reliability, Product can malfunction or fail. Customers are responsible for complying with safety standards and for providing adequate designs and safeguards for their hardware, software and systems which minimize risk and avoid situations in which a malfunction or failure of Product could cause loss of human life, bodily injury or damage to property, including data loss or corruption. Before customers use the Product, create designs including the Product, or incorporate the Product into their own applications, customers must also refer to and comply with (a) the latest versions of all relevant KIOXIA information, including without limitation, this document, the specifications, the data sheets and application notes for Product and the precautions and conditions set forth in the “Reliability Information” in KIOXIA Corporation’s website and (b) the instructions for the application with which the Product will be used with or for. Customers are solely responsible for all aspects of their own product design or applications, including but not limited to (a) determining the appropriateness of the use of this Product in such design or applications; (b) evaluating and determining the applicability of any information contained in this document, or in charts, diagrams, programs, algorithms, sample application circuits, or any other referenced documents; and (c) validating all operating parameters for such designs and applications.

KIOXIA ASSUMES NO LIABILITY FOR CUSTOMERS’ PRODUCT DESIGN OR APPLICATIONS.

- **PRODUCT IS NEITHER INTENDED NOR WARRANTED FOR USE IN EQUIPMENTS OR SYSTEMS THAT REQUIRE EXTRAORDINARILY HIGH LEVELS OF QUALITY AND/OR RELIABILITY, AND/OR A MALFUNCTION OR FAILURE OF WHICH MAY CAUSE LOSS OF HUMAN LIFE, BODILY INJURY, SERIOUS PROPERTY DAMAGE AND/OR SERIOUS PUBLIC IMPACT (“UNINTENDED USE”).** Except for specific applications as expressly stated in this document, Unintended Use includes, without limitation, equipment used in nuclear facilities, equipment used in the aerospace industry, lifesaving and/or life supporting medical equipment, equipment used for automobiles, trains, ships and other transportation, traffic signaling equipment, equipment used to control combustions or explosions, safety devices, elevators and escalators, and devices related to power plant. **IF YOU USE PRODUCT FOR UNINTENDED USE, KIOXIA ASSUMES NO LIABILITY FOR PRODUCT.** For details, please contact your KIOXIA sales representative or contact us via our website.
- Do not disassemble, analyze, reverse-engineer, alter, modify, translate or copy Product, whether in whole or in part.
- Product shall not be used for or incorporated into any products or systems whose manufacture, use, or sale is prohibited under any applicable laws or regulations.
- The information contained herein is presented only as guidance for Product use. No responsibility is assumed by KIOXIA for any infringement of patents or any other intellectual property rights of third parties that may result from the use of Product. No license to any intellectual property right is granted by this document, whether express or implied, by estoppel or otherwise.
- **ABSENT A WRITTEN SIGNED AGREEMENT, EXCEPT AS PROVIDED IN THE RELEVANT TERMS AND CONDITIONS OF SALE FOR PRODUCT, AND TO THE MAXIMUM EXTENT ALLOWABLE BY LAW, KIOXIA (1) ASSUMES NO LIABILITY WHATSOEVER, INCLUDING WITHOUT LIMITATION, INDIRECT, CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OR LOSS, INCLUDING WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF OPPORTUNITIES, BUSINESS INTERRUPTION AND LOSS OF DATA, AND (2) DISCLAIMS ANY AND ALL EXPRESS OR IMPLIED WARRANTIES AND CONDITIONS RELATED TO SALE, USE OF PRODUCT, OR INFORMATION, INCLUDING WARRANTIES OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ACCURACY OF INFORMATION, OR NONINFRINGEMENT.**
- Do not use or otherwise make available Product or related software or technology for any military purposes, including without limitation, for the design, development, use, stockpiling or manufacturing of nuclear, chemical, or biological weapons or missile technology products (mass destruction weapons). Product and related software and technology may be controlled under the applicable export laws and regulations including, without limitation, the Japanese Foreign Exchange and Foreign Trade Law and the U.S. Export Administration Regulations. Export and re-export of Product or related software or technology are strictly prohibited except in compliance with all applicable export laws and regulations.
- Please contact your KIOXIA sales representative for details as to environmental matters such as the RoHS compatibility of Product. Please use Product in compliance with all applicable laws and regulations that regulate the inclusion or use of controlled substances, including without limitation, the EU RoHS Directive. **KIOXIA ASSUMES NO LIABILITY FOR DAMAGES OR LOSSES OCCURRING AS A RESULT OF NONCOMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS.**