PRODUCT / PROCESS CHANGE INFORMATION

1. PCI basic data

1.1 Company	STMicroelectronics International N.V
1.2 PCI No.	MDG/23/14015
1.3 Title of PCI	AMKOR (Taiwan) STM32F412RxY6TR WLSCP package pin1 orientation in carrier tape harmonization
1.4 Product Category	STM32F412RGY6TR STM32F412REY6TR
1.5 Issue date	2023-04-26

2. PCI Team

2.1 Contact supplier	
2.1.1 Name	ROBERTSON HEATHER
2.1.2 Phone	+1 8475853058
2.1.3 Email	heather.robertson@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Ricardo Antonio DE SA EARP
2.1.2 Marketing Manager	Veronique BARLATIER
2.1.3 Quality Manager	Pascal NARCHE

3. Change

3.1 Category	**3.2 Type of change**	**3.3 Manufacturing Location**
Methods	Finished product and Wafer Storage procedure	AMKOR ATT (Taiwan)

4. Description of change

	Old	**New**
4.1 Description	Current situation STM32F412RGY6TR: pin1 top right STM32F412REY6TR: pin1 top right or top left	New situation STM32F412RGY6TR: changed to Pin1 top left STM32F412REY6TR: changed to Pin1 top left
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	Die orientation in carrier tape harmonized to pin 1 top left Bill Of Material : No Change Package : no change Carrier tape : no change Marking : No change	

5. Reason / motivation for change

5.1 Motivation	Pin1 top harmonization to Pin1 top left
5.2 Customer Benefit	SERVICE IMPROVEMENT

6. Marking of parts / traceability of change

6.1 Description	tracability ensure by ST internal tools

7. Timing / schedule

7.1 Date of qualification results	2023-03-17
7.2 Intended start of delivery	2023-03-17
7.3 Qualification sample available?	Not Applicable

8. Qualification / Validation

8.1 Description	14015 MDG-GPM-qualification.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	**Issue Date**	2023-04-26

9. Attachments (additional documentations)
14015 Public product.pdf 14015 MDG-GPM-qualification.pdf 14015 PCN14015_Additional information.pdf

10. Affected parts		
10. 1 Current		10.2 New (if applicable)
10.1.1 Customer Part No	10.1.2 Supplier Part No	10.1.2 Supplier Part No
	STM32F412REY6TR	
	STM32F412RGY6TR	

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Public Products List

Publict Products are off the shelf products. They are not dedicated to specific customers, they are available through ST Sales team, or Distributors, and visible on ST.com

PCI Title : AMKOR (Taiwan) STM32F412RxY6TR WLSCP package pin1 orientation in carrier tape harmonization
PCI Reference : MDG/23/14015

Subject : Public Products List

Dear Customer,

Please find below the Standard Public Products List impacted by the change.

STM32F412REY6TR	**STM32F412RGY6PTR**	**STM32F412RGY6TR**

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PCI 14015
AMKOR (Taiwan) STM32F412RxY6TR WLSCP package pin1 orientation in carrier tape harmonization

Qualification Report

Mar 17th 2023

MDG GPM Product Test Engineering Department

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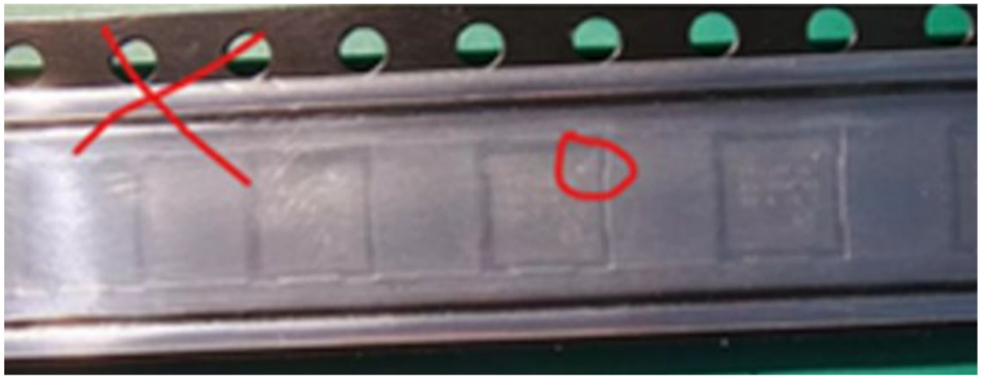
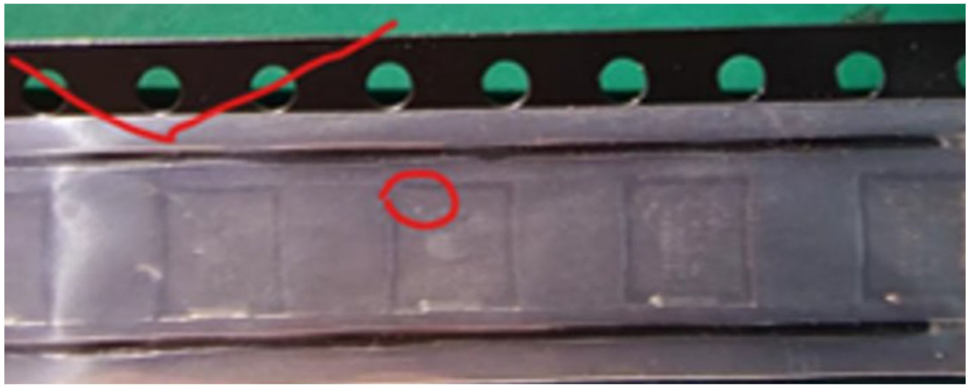
AMKOR WLCSP Package mis-orientation of Pin1 in carrier tape

- Before

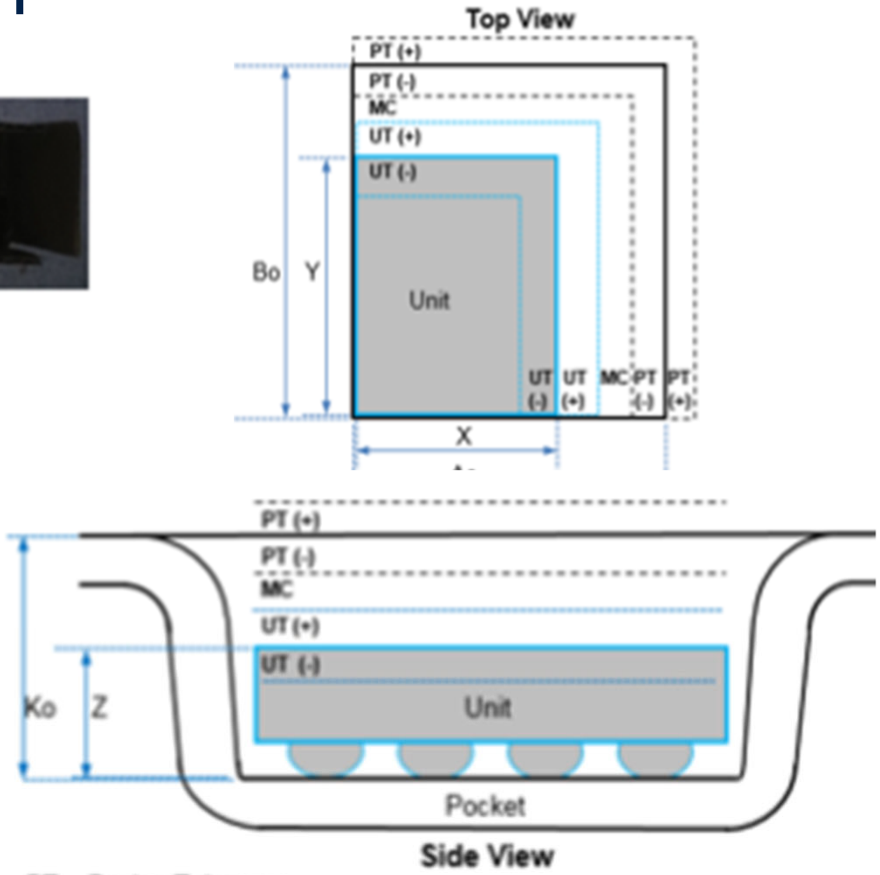


- After



Risk assessment and conclusion

(a) Unit & Pocket Dimension



PT – Pocket Tolerance
MC – Minimum Clearance
UT – Unit Tolerance

X, Y & Z – Unit dimension
Ao, Bo & Ko – Pocket dimension

- Carrier Tape fit analysis on orientation top left
  - Risk assessment done
  - Minimum (50 um) and Maximum clearance meet with pin1 top left
  - Note that clearance are meet also with pin1 top right.
  - No risk to produce on any of both orientation.

- Conclusion : No concern on the Fit Analysis between pocket size (Ao, Bo, Ko) & die size (X,Y,Z).

Legal Information

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PRODUCT/PROCESS CHANGE NOTIFICATION

PCI 14015– Additional information

AMKOR (Taiwan) STM32F412REY6TR and STM32F412RGY6TR WLSCP package pin1 orientation in carrier tape harmonization

MDG – General Purpose Microcontrollers (GPM) sub-group

Assembly site	Current orientation	New orientation
	Two possible orientations for Pin 1	Harmonized position Pin 1 Top left
Pin 1 orientation example within the carrier tape	 Top right	 Top left
	 Top left	

What is the change?

There is no Bill Of Material change. Package is unchanged, Carrier tape unchanged, Marking unchanged. Only Die orientation is harmonized to top left inside the carrier tape.

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