12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20170404000
Qualification of 4221437 Underfill Material for select devices
Change Notification / Sample Request

Date: April 05, 2017
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

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

We request you acknowledge receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If you require samples or additional data to support your evaluation, please request within 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. This notification period is per TI's standard process.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services

20170404000
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
TMS32C6414EGLZ5E0	null
TMS32C6414EZLZA5E0	null
TMS32C6414EZLZA6E3	null
TMS32C6414EGLZ6E3	null
TMS32C6414EZLZ7E3	null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20170404000	**PCN Date:**	Apr 05, 2017
Title:	Qualification of 4221437 Underfill Material set for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	July 05, 2017	**Estimated Sample Availability:**	Date Provided at Sample request

Change Type:

☐	Assembly Site	☐	Design	☐	Wafer Bump Site
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Site
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials
				☐	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing the qualification 4221437 Underfill Material for select devices listed in the "Product Affected" Section.

	Current	Proposed
Underfill Material	4202191	**4221437**

Reason for Change:

Continuity of supply.

Discontinuation of LOCTITE ECCOBOND 4202191 underfill material due to raw material discontinuation. Current raw material inventory will support until end of April 2017.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

Anticipated impact on Material Declaration

☐	No Impact to the Material Declaration	☒	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp

Changes to product identification resulting from this PCN:

None

Product Affected:

TMS320C6411AGLZ	TMS32C6414EZLZ6E3	TMS32C6415EGLZA5E0	TMS32C6416EGLZ6E3
TMS320C6411AZLZ	TMS32C6414EZLZ7E3	TMS32C6415EGLZA6E3	TMS32C6416EGLZ7E3
TMS32C6414EGLZ5E0	TMS32C6414EZLZA5E0	TMS32C6415EGLZW6E3	TMS32C6416EGLZA5E0
TMS32C6414EGLZ6E3	TMS32C6414EZLZA6E3	TMS32C6415EZLZ5E0	TMS32C6416EGLZA6E3
TMS32C6414EGLZ7E3	TMS32C6414EZLZW5E0	TMS32C6415EZLZ6E3	TMS32C6416EZLZ5E0
TMS32C6414EGLZA5E0	TMS32C6414EZLZW6E3	TMS32C6415EZLZ7E3	TMS32C6416EZLZ6E3
TMS32C6414EGLZA6E3	TMS32C6415EGLZ5E0	TMS32C6415EZLZA5E0	TMS32C6416EZLZA6E3
TMS32C6414EZLZ5E0	TMS32C6415EGLZ6E3	TMS32C6416EGLZ5E0	

Qualification Report

Solder Bump FCBGA Underfill Conversion to Namics 4221437 for Kelvin (TMS320C6414/6415/6416E) products

Approve Date 22-Mar-2017

Product Attributes

Attributes	Qual Device: KELVIN2
Die Attributes	-
Die Revision	2.0*
Wafer Process	1233C035.A (120nm)
Passivation	PBO
Package Attributes	-
Assembly Site	PHI (TIPI)
Package Family	FCBGA
Package Designator	ZLZ
Package Size (mils)	23mmx23mm
Pin Count	532
Solder Ball Composition	SnAgCu**
Green Status	RoHS

*Die Revision 1.0 is qualified by similarity.
**Sn/Pb solder ball product part numbers are qualified by similarity as solder ball material has no expected effect on bump-interconnect underfill-influenced failure mechanisms.

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: KELVIN2
PC	PreCon Level 4	Moisture Soak/96hrs at 30C/60%RH	3/399/0
TC	Temperature Cycle, -55/125C, 700cyc	-55/125C, JEDEC Soak Mode 1, 700cyc	3/165/0
UHAST	Unbiased HAST 110C/85%RH	264 Hr/110C/85%RH	3/165/0

- Moisture Preconditioning was performed for Unbiased HAST and Temperature Cycle

- THB, HTSL, and HTOL are not required tests for this qualification but were completed for product qualification with previous underfill material (current production).

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com