



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN#20160609000**  
**Qualification of 100% Cu wire bonding on select nfBGA Devices**  
**Change Notification / Sample Request**

**Date:** 7/1/2016  
**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 proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

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](mailto:PCN_ww_admin_team@list.ti.com)).

Sincerely,

PCN Team  
SC Business Services

**20160609000**  
**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.

<b>DEVICE</b>	<b>CUSTOMER PART NUMBER</b>
AM1808EZCEA3	null
OMAPL138EZWT4	null
TMS320C6746EZWT4	null
AM1806EZWT3	null
TMS320C6742EZWTA2	null
TMS320C6748EZWT4	null
TMS320C6746EZWTA3	null
TMS320C6748EZWT3	null
AM1802EZWTD3	null
AM1802EZCED3	null
TMS320C6746EZCEA3	null
OMAPL138EZWT3	null
TMS320C6748EZWTD4	null
TMS320C6748EZWTD4E	null
OMAPL138EZCEA3	null
OMAPL138EZWTA3	null
AM1808EZWT4	null
AM1808EZCE4	null
AM1808EZWT3	null

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

<b>PCN Number:</b>	20160609000		<b>PCN Date:</b>	07/01/2016										
<b>Title:</b>	Qualification of 100% Cu wire bonding on select nFBGA Devices													
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services											
<b>Proposed 1<sup>st</sup> Ship Date:</b>	10/01/2016	<b>Estimated Sample Availability:</b>	Date provided at sample request											
<b>Change Type:</b>														
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site									
<input checked="" type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material									
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process									
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Site									
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Materials									
				<input type="checkbox"/>	Wafer Fab Process									
<b>PCN Details</b>														
<b>Description of Change:</b>														
Texas Instruments is pleased to announce the qualification of 100% Cu bonding for the nFBGA devices listed below.														
<table border="1"> <thead> <tr> <th></th> <th>Current Bonding</th> <th>New Bonding</th> </tr> </thead> <tbody> <tr> <td>Wire Type/Diam</td> <td>0.80mil Au, 0.80mil Cu</td> <td>0.70mil Cu</td> </tr> <tr> <td>Mold Compound</td> <td>4208515</td> <td>4221805</td> </tr> </tbody> </table>							Current Bonding	New Bonding	Wire Type/Diam	0.80mil Au, 0.80mil Cu	0.70mil Cu	Mold Compound	4208515	4221805
	Current Bonding	New Bonding												
Wire Type/Diam	0.80mil Au, 0.80mil Cu	0.70mil Cu												
Mold Compound	4208515	4221805												
<b>Reason for Change:</b>														
Continuity of supply. 1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties 2) Maximize flexibility within our Assembly/Test production sites. 3) Cu is easier to obtain and stock														
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>														
None														
<b>Anticipated impact on Material Declaration</b>														
<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" type="checkbox"/>	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 from the <a href="#">TI ECO website</a> .											
<b>Changes to product identification resulting from this PCN:</b>														
None														

**Product Affected:**

AM1802EZCED3	AM1810EZWTA3	OMAPL138EZWTA3	TMS320C6746EZWTD4
AM1802EZWTD3	M1OMAPL138EZCER	OMAPL138EZWTA3CS	TMS320C6748EZCE3
AM1806EZCE3	OMAPL132EZWTD2	OMAPL138EZWTA3E	TMS320C6748EZCE4
AM1806EZCE4	OMAPL132EZWTA2	OMAPL138EZWTA3R	TMS320C6748EZCEA3
AM1806EZCEA3	OMAPL132EZWTA2E	OMAPL138EZWTA4	TMS320C6748EZCEA3E
AM1806EZCED4	OMAPL132EZWTA2R	OMAPL138EZWTD4	TMS320C6748EZCED4
AM1806EZWTD3	OMAPL138EZCE3	OMAPL138EZWTD4E	TMS320C6748EZCED4E
AM1806EZWTD4	OMAPL138EZCE4	TMS320C6742EZCE2	TMS320C6748EZWTD3
AM1806EZWTD4	OMAPL138EZCEA3	TMS320C6742EZWTD2	TMS320C6748EZWTD3CS
AM1808EZCE3	OMAPL138EZCEA3D	TMS320C6742EZWTA2	TMS320C6748EZWTD4
AM1808EZCE4	OMAPL138EZCEA3E	TMS320C6746EZCE3	TMS320C6748EZWTA3
AM1808EZCEA3	OMAPL138EZCEA3R	TMS320C6746EZCEA3	TMS320C6748EZWTA3E
AM1808EZCED4	OMAPL138EZCED4	TMS320C6746EZCED4	TMS320C6748EZWTD4
AM1808EZWTD3	OMAPL138EZCED4E	TMS320C6746EZWTD3	TMS320C6748EZWTD4E
AM1808EZWTD4	OMAPL138EZCEML	TMS320C6746EZWTD3CS	TNETV138EINZWT4
AM1808EZWTA3	OMAPL138EZWTD3	TMS320C6746EZWTD4	
AM1808EZWTD4	OMAPL138EZWTD4	TMS320C6746EZWTA3	

## Qualification Report

### 0.70mil PCC + Dry Compression Mold Technology Qual - Freon 361ZWT nFBGA driver

Approve Date 08-Jun-2015

#### Product Attributes

Attributes	Qual Device: TMS320C6748BZWTA3E	QBS Product Reference: 771570ZCE365	QBS Package Reference: TNETV1061ZWC
Assembly Site	PHI (TIPI)	PHI (TIPI)	PHI (TIPI)
Package Family	NFBGA	NFBGA	NFBGA
Wafer Fab Supplier	UMC FAB12I	UMCI	DMOS6
Wafer Fab Process	1218C021.M6	1218C021.M7	1533C035.15C2

- QBS: Qual By Similarity

- Qual Device TMS320C6748BZWTA3E is qualified at LEVEL3-260CG

#### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TMS320C6748BZWTA3E	QBS Product Reference: 771570ZCE365	QBS Package Reference: TNETV1061ZWC
PC	PreCon Level 3	3XIR/260C	3/960/0	3/870/0	-
PC	PreCon Level 4	3XIR/260C	-	-	3/1080/0
HTOL	Life Test, 125C	1000hrs/125C	-	3/240/0	3/240/0
THB	Biased Temperature and Humidity, 85C/85%RH	1000hrs/85C/85%RH	3/78/0	-	-
UHAST	Unbiased HAST 110C/85%RH	264hrs/110C/85%RH	3/240/0	3/240/0	3/300/0
TC	Temperature Cycle, -55/125C	1000cyc/-55C/125C	3/240/0	3/240/0	3/240/0
HTSL	High Temp Storage Bake 150C	1000hrs/150C	3/240/0	3/300/0	3/179/0
WBP	Bond Strength	76 ball bonds, min. 3	3/Pass	-	3/228/0

Type	Test Name / Condition	Duration	Qual Device: TMS320C6748BZWT3E	QBS Product Reference: 771570ZCE365	QBS Package Reference: TNETV1061ZWC
		units			
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	3/Pass	3/Pass	3/Pass
PD	Physical Dimensions	(per mechanical drawing)	-	-	1/10/0
YLD	FTY and Bin Summary	-	3/Pass	-	3/Pass

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours

- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours

- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

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

## Qualification Report

### 0.70mil PCC + Dry Compression Mold Technology Qual - DM365 338ZCE nFBGA driver

Approve Date 19-Jun-2015

#### Product Attributes

Attributes	Qual Device: 771570ZCE365	QBS Package Reference: TMS320C6748BZWT3E
Assembly Site	PHI (TIPI)	PHI (TIPI)
Package Family	NFBGA	NFBGA
Wafer Fab Supplier	UMCI	UMC FAB12I
Wafer FAB Process	1218C021.M7	1218C021.M6

- QBS: Qual By Similarity

- Qual Device 771570ZCE365 is qualified at LEVEL3-260C

#### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: 771570ZCE365	QBS Package Reference: TMS320C6748BZWT3E
HTOL	Life Test, 125C	1000hrs/125C	3/240/0	
HTSL	High Temp Storage Bake 150C	1000hrs/150C	3/300/0	3/240/0
HTSL	High Temp Storage Bake 150C	1500hrs/150C		3/240/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	3/Pass	3/Pass
PC	PreCon Level 3	3XIR/260C	3/870/0	3/960/0
TC	Temperature Cycle, -55/125C	1000cyc/-55C/125C	3/240/0	3/240/0
TC	Temperature Cycle, -55/125C	1500cyc-ext/-55C/125C		3/210/0
THB	Biased Temperature and Humidity, 85C/85%RH	1000hrs/85C/85%RH		3/78/0
THB	Biased Temperature and Humidity, 85C/85%RH	2500hours/85C/85%RH		3/77/0
UHAST	Unbiased HAST 110C/85%RH	264hrs/110C/85%RH	3/240/0	3/240/0

Type	Test Name / Condition	Duration	Qual Device: 771570ZCE365	QBS Package Reference: TMS320C6748BZWT A3E
WBP	Bond Strength	76 ball bonds, min. 3 units		3/Pass
YLD	FTY and Bin Summary	-		3/Pass

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours

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**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	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>