

<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 checked="" type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site
<input 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
<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.			
		<b>Current Bonding</b>	<b>New Bonding</b>
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	OMAPL132EZWT2	OMAPL138EZWTA3E	TMS320C6748EZCE4
AM1806EZCE4	OMAPL132EZWTA2	OMAPL138EZWTA3R	TMS320C6748EZCEA3
AM1806EZCEA3	OMAPL132EZWTA2E	OMAPL138EZWTA4	TMS320C6748EZCEA3E
AM1806EZCED4	OMAPL132EZWTA2R	OMAPL138EZWTD4	TMS320C6748EZCED4
AM1806EZWT3	OMAPL138EZCE3	OMAPL138EZWTD4E	TMS320C6748EZCED4E
AM1806EZWT4	OMAPL138EZCE4	TMS320C6742EZCE2	TMS320C6748EZWT3
AM1806EZWTD4	OMAPL138EZCEA3	TMS320C6742EZWT2	TMS320C6748EZWT3CS
AM1808EZCE3	OMAPL138EZCEA3D	TMS320C6742EZWTA2	TMS320C6748EZWT4
AM1808EZCE4	OMAPL138EZCEA3E	TMS320C6746EZCE3	TMS320C6748EZWTA3
AM1808EZCEA3	OMAPL138EZCEA3R	TMS320C6746EZCEA3	TMS320C6748EZWTA3E
AM1808EZCED4	OMAPL138EZCED4	TMS320C6746EZCED4	TMS320C6748EZWTD4
AM1808EZWT3	OMAPL138EZCED4E	TMS320C6746EZWT3	TMS320C6748EZWTD4E
AM1808EZWT4	OMAPL138EZCEML	TMS320C6746EZWT3CS	TNETV138EINZWT4
AM1808EZWTA3	OMAPL138EZWT3	TMS320C6746EZWT4	
AM1808EZWTD4	OMAPL138EZWT4	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: TMS320C6748BZWTA3E
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

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

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USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
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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>