

PCN Number:	20131104000		PCN Date:	11/07/2013												
Title:	Qualification of TI Clark and JCAP as Additional Assembly and Test Site for Select Devices															
Customer Contact:	PCN Manager	Phone:	+1(214)480-6037	Dept: Quality Services												
Proposed 1st Ship Date:	02/07/2014	Estimated Sample Availability:	Date Provided at Sample request													
Change Type:																
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>												
<input type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification	<input type="checkbox"/>												
<input checked="" type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>												
<input checked="" type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>												
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials	<input type="checkbox"/>												
		<input type="checkbox"/>	Part number change													
PCN Details																
Description of Change:																
<p>Texas Instruments Incorporated is announcing the qualification of TI Clark and JCAP as additional assembly/test site for select devices listed in the "Product Affected" Section. Current assembly sites are indicated in the "Changes to Product Identification" tables below. Assembly differences are as follows:</p> <p>Group 1 Device: NSE to TI Clark</p> <table border="1"> <thead> <tr> <th></th> <th>NSE</th> <th>TI Clark</th> </tr> </thead> <tbody> <tr> <td>Wire (mils)</td> <td>Au (0.8, 1.0, 1.3)</td> <td>Cu (0.8, 1.0, 1.3)</td> </tr> </tbody> </table> <p>Group 2 Device: TI Clark to JCAP</p> <table border="1"> <thead> <tr> <th></th> <th>CLARK-AT</th> <th>JCAP-AT</th> </tr> </thead> <tbody> <tr> <td>Bump Site</td> <td>CLARK-BP</td> <td>JCAP-FAB</td> </tr> </tbody> </table> <p>Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.</p>						NSE	TI Clark	Wire (mils)	Au (0.8, 1.0, 1.3)	Cu (0.8, 1.0, 1.3)		CLARK-AT	JCAP-AT	Bump Site	CLARK-BP	JCAP-FAB
	NSE	TI Clark														
Wire (mils)	Au (0.8, 1.0, 1.3)	Cu (0.8, 1.0, 1.3)														
	CLARK-AT	JCAP-AT														
Bump Site	CLARK-BP	JCAP-FAB														
Reason for Change:																
Continuity of supply.																
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																
None																

Changes to product identification resulting from this PCN:

Group 1 Device: NSE to TI Clark

Assembly Site		
TI Clark	Assembly Site Origin (22L)	ASO: QAB
JCAP-AT	Assembly Site Origin (22L)	ASO: JCP

ASSEMBLY SITE CODES: NSE =J, TI-Clark = I

Group 2 Device: TI Clark to JCAP

Assembly Site		
NSE Thailand	Assembly Site Origin (22L)	ASO: NSE
TI Clark - Philippines	Assembly Site Origin (22L)	ASO: QAB

ASSEMBLY SITE CODES: TI CLARK =I, JCAP = P

Sample product shipping label (not actual product label)

Product Affected: Group 1 Device

ADS6128IRGZR	ADS6148IRGZTG4	AFE7070IRGZT	DAC5682ZIRGCR
ADS6128IRGZRG4	ADS6149IRGZR	DAC3282IRGZR	DAC5682ZIRGCRG4
ADS6128IRGZT	ADS6149IRGZRG4	DAC3282IRGZT	DAC5682ZIRGCT
ADS6128IRGZTG4	ADS6149IRGZT	DAC3283IRGZR	DAC5682ZIRGCTG4
ADS6129IRGZR	ADS6149IRGZTG4	DAC3283IRGZT	DAC5688IRGC25
ADS6129IRGZRG4	ADS61B29IRGZR	DAC5681IRGC25	DAC5688IRGCR
ADS6129IRGZT	ADS61B29IRGZT	DAC5681IRGCR	DAC5688IRGCRG4
ADS6129IRGZTG4	ADS61B49IRGZR	DAC5681IRGCT	DAC5688IRGCT
ADS6148IRGZR	ADS61B49IRGZT	DAC5681ZIRGCR	DAC5688IRGCTG4
ADS6148IRGZRG4	AFE7070IRGZ25	DAC5681ZIRGCT	DAC5689IRGCR
ADS6148IRGZT	AFE7070IRGZR	DAC5682ZIRGC	DAC5689IRGCT

Product Affected: Group 2 Device

TSU6721YFPR

Qualification Data : Group 1

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1: AFE7070IRGZR (MSL3-260C)

Package Construction Details

Assembly Site:	Clark-AT	Mold Compound:	4208625
# Pins-Designator, Family:	48-RGZ, VQFN	Mount Compound:	4207123
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu

Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
Electrical Characterization	-	Pass	Pass	Pass
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Manufacturability	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	(level 3 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes ** - Preconditioning sequence: Level 3-260C.				
Qual Vehicle 2: DAC5682ZIRGCR (MSL3-260C)				
Package Construction Details				
Assembly Site:	Clark-AT	Mold Compound:	4208625	
# Pins-Designator, Family:	64-RGC, VQFN	Mount Compound:	4207123	
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.8 Mil Dia., Cu	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size/Fail		
		Lot#1	Lot#2	Lot#3
Electrical Characterization	-	Pass	-	-
**High Temp. Storage Bake	170C (420hrs)	77/0	77/0	77/0
**Autoclave 121C	121C, 2 atm (96 Hrs)	77/0	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0
Manufacturability	(per mfg. Site specification)	Pass	Pass	-
Moisture Sensitivity	(level 3 @ 260C peak +5/-0C)	12/0	12/0	12/0
Notes ** - Preconditioning sequence: Level 3-260C.				
Reference Qualification:				
Qual Vehicle 1 : SH6966ACC0RGCRG4 (MSL 3-260C)				
Package Construction Details				
Assembly Site:	TI Clark	Mold Compound:	4208625	
# Pins-Designator, Family:	64-RGC, QFN	Mount Compound:	4207768	
Leadframe (Finish, Base):	NiPdAu	Bond Wire:	1.15 Mil Dia., Cu	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size / Fail		
		Lot 1	Lot 2	Lot3
Die Shear	-	10/0	10/0	10/0
X-ray	(top side only)	5/0	5/0	5/0
Manufacturability Qualification (MQ)		Pass	Pass	Pass
**Temp Cycle, -65C/150C	500 Cycles	87/0	87/0	87/0
**High Temp Storage Bake	170C (420 Hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
**Thermal Shock, -65/150C	500 Cycles	77/0	77/0	77/0
Visual/Mechanical		Pass	Pass	Pass
Physical Dimensions		5/0	5/0	5/0
Salt Atmosphere	24 Hrs	22/0	22/0	22/0
**Autoclave	121C, 2 atm (96 Hrs)	77/0	77/0	77/0
Solderability	8 Hrs Steam age	22/0	22/0	22/0
Bond Pull	76 ball bonds, min. 3 units	76/0	76/0	76/0
Bond Shear	76 ball bonds, min. 3 units	76/0	76/0	76/0
Moisture Sensitivity	L3-260C	22/0	22/0	22/0
**- Preconditioning sequence: Level 3-260C.				

Qual Vehicle 2 : TPS2231RGPR (MSL 2-260C)

Package Construction Details				
Assembly Site:	TI Clark	Mold Compound:	4208625	
# Pins-Designator, Family:	20-RGP, QFN	Mount Compound:	4207768	
Leadframe (Finish, Base):	NiPdAu	Bond Wire:	2.0 Mil Dia., Cu	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size / Fail		
		Lot 1	Lot 2	Lot3
Die Shear	-	10/0	10/0	10/0
X-ray	(top side only)	5/0	5/0	5/0
**High Temp Storage Bake	170C (420 Hrs)	77/0	77/0	77/0
**Thermal Shock, -65/150C	500 Cycles	77/0	77/0	77/0
**Temp Cycle, -65C/150C	500 Cycles	87/0	87/0	87/0
Visual/Mechanical		Pass	Pass	Pass
Physical Dimensions		5/0	5/0	5/0
Salt Atmosphere	24 Hrs	22/0	22/0	22/0
**High Temp Operating Life	155C (240 Hrs)	77/0	77/0	77/0
**Autoclave	121C, 2 atm (96 Hrs)	77/0	77/0	77/0
Solderability	8 Hrs Steam age	22/0	22/0	22/0
Bond Pull	76 ball bonds, min. 3 units	76/0	76/0	76/0
Bond Shear	76 ball bonds, min. 3 units	76/0	76/0	76/0
Moisture Sensitivity	L2-260C	22/0	22/0	22/0
Manufacturability Qualification (MQ)		Pass	Pass	Pass
**- Preconditioning sequence: Level 2-260C.				

Qual Vehicle 3 : TPS650240RHBR (MSL 2-260C)

Package Construction Details			
Assembly Site:	TI Clark	Mold Compound:	4208625
# Pins-Designator, Family:	32-RHB, QFN	Mount Compound:	4207768
Leadframe (Finish, Base):	NiPdAu	Bond Wire:	1.3 Mil Dia., Cu
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results			
Reliability Test	Conditions	Sample Size / Fail	
Die Shear	-	10/0	
X-ray	(top side only)	5/0	
Manufacturability Qualification (MQ)		Pass	
**Thermal Shock, -65/150C	500 Cycles	77/0	
**Temp Cycle, -65C/150C	500 Cycles	87/0	
**Autoclave	121C, 2 atm (96 Hrs)	77/0	
Visual/Mechanical		Pass	
Physical Dimensions		5/0	
Bond Pull	76 ball bonds, min. 3 units	76/0	
Bond Shear	76 ball bonds, min. 3 units	76/0	
**High Temp Storage Bake	170C (420 Hrs)	77/0	
Moisture Sensitivity	L2-260C	22/0	
**- Preconditioning sequence: Level 2-260C.			

Qualification Data: Group 2

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle : TSU6721YFPR (MSL1-260C)				
Package Construction Details				
Assembly & Bump Site:	JCAP	Bump Composition:	SnAgCu	
# Pins-Designator, Family:	25-YFP, WCSP	Bump Diameter:	0.23mm	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size / Fail		
		Lot#1		
Electrical Characterization	-	Pass		
Bump Shear	Per A-T specification	54/0		
Manufacturability (MQ)	(per mfg. Site specification)	Pass		
Reference Qualification				
Qual Vehicle : CD3239 (MSL1-260C)				
Package Construction Details				
Assembly & Bump Site:	JCAP	Bump Composition:	SnAgCu	
# Pins-Designator, Family:	25-YFP, WCSP	Bump Diameter:	0.23mm	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size / Fail		
		Lot#1	Lot#2	Lot#3
**Steady-state Life Test	150C (300 Hours)	116/0	116/0	116/0
**High Temp. Storage Bake	150C (1000 Hours)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (96 Hours)	77/0	77/0	77/0
**Unbiased HAST	130C/85%RH (96 Hours)	77/0	77/0	77/0
**Temperature Cycle	-55C/+125C (1000 Cyc)	77/0	77/0	77/0
Manufacturability (MQ)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	L1-260C	12/0	12/0	12/0
Notes **- Preconditioning sequence: Level 1-260C.				

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	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
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