PCN	Num	ber:	201	20131104000 PCN Date: 11/07/201							11/07/2013		
Title	:	Qualification Devices	of TI	Cla	ark and	JCAP a	as A	Additional Asse	em	bly	and Test	Site	for Select
Customer Contact: PCN Manager Phone: +1(214)480							+1(214)480-	-6037 Dept: Quality Services				ality Services	
Proposed 1 st Ship Date				02/07/2014 Estimated Sample Availability:					Date Provided at Sample request				
Change Type:													
\boxtimes	Asse	embly Site			Assem	bly Pro	ces	SS		\boxtimes	Assembly	[/] Mat	erials
	Desi	gn			Electric	cal Spe	cifi	cation			Mechanic	al Sp	ecification
		Site						g/Labeling			Test Proc		
		er Bump Site			Wafer						Wafer Bu		
	Wafe	er Fab Site			Wafer						Wafer Fa	b Pro	cess
					Part nu								
						PCI	<u> </u>	Details					
Desc	cription	on of Change											
asser sites are a	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: Group 1 Device: NSE to TI Clark												
•						N	SE				TI	Clark	(
Wire	e (mil	s)		Au (0.8, 1.0, 1.3)						Cu (0.8,	1.0,	1.3)	
Grou	Group 2 Device: TI Clark to JCAP												
				CLARK-AT					JCAP-AT				
Bun	np Sit	e		CLARK-BP					JCAP-FAB				
Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.													
		or Change:											
		of supply.											
Anti	cipat	ed impact on	Form	m,	Fit, Fu	nction	, Q	uality or Reli	al	bili	ty (positi	ve /	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)





(1P) \$N74L\$07N\$R (Q) 2000 (D) 0336 (31T)LOT: 3959047MLA (4W) TKY(1T) 7523483\$12 (P) (2P) REV: (V) 0033317

(2P) REV: (V) 0033317 (20L) CSO: SHE (21L) CCO:USA (22L) ASO: MLA (23L) ACO: MYS

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:	🔀 Tes	st Results							
Reliability Test Condition				Sample Size/Fail					
Reliability Test	HUILIONS		Lot#1	Lot#2	Lot#3				
Electrical Characterization	-	-			Pass	Pass			
**T/C -65C/150C	-65	-65C/+150C (500 Cyc)			77/0	77/0			
Manufacturability	er mfg. Site s _l	pecification)	Pass	Pass	Pass				
Moisture Sensitivity (level 3 @			peak +5/-0C)	12/0	12/0	12/0			
Notes **- Preconditioning									
Qua	Qual Vehicle 2: DAC5682ZIRGCR (MSL3-260C)								
			truction Details	_					
Assembly Site:	Clark-A	AT	Mold Compound:	42086	25				
# Pins-Designator, Family:	64-RG0	C, VQFN	Mount Compound:	42071	23				
Lead frame (Finish, Base):	NiPdAu	, Cu	Bond Wire:	0.8 Mi	l Dia., Cu				
Qualification: Plan	🛛 Tes	st Results							
Reliability Test	Co	nditions			mple Size,				
·				Lot#1	Lot#2	Lot#3			
Electrical Characterization	-			Pass	-	-			
**High Temp. Storage Bake		0C (420hrs)		77/0	77/0	77/0			
**Autoclave 121C		1C, 2 atm (96		77/0	77/0	77/0			
**T/C -65C/150C		5C/+150C (50		77/0	77/0	77/0			
-	Manufacturability (per			Pass	Pass	-			
Moisture Sensitivity			peak +5/-0C)	12/0	12/0	12/0			
Notes **- Preconditioning	sequen	ce: Level 3-2	60C.						
Reference Qualification	on:								
Qual V	ehicle :	1 : SH6966A	CCORGCRG4 (MSL 3-2	260C)					
	Package Construction Details								
Assembly Site:	TI Clark		Mold Compound:	4208625	5				
# Pins-Designator, Family:	64-RGC,	QFN	Mount Compound:	4207768					
Leadframe (Finish, Base):	NiPdAu		Bond Wire:	1.15 Mil Dia., Cu					
Qualification: Plan Test Results									
Poliability Tost									
Reliability Test	Condi	itions		ple Size /					
		Condi	itions		ple Size / Lot 2				
Die Shear		Condi	itions						
Die Shear X-ray		-	itions –	Lot 1	Lot 2	Lot3			
	on (MQ)	- (top s		Lot 1 10/0	Lot 2 10/0	Lot3 10/0			
X-ray	on (MQ)	- (top s	ide only)	Lot 1 10/0 5/0	Lot 2 10/0 5/0	Lot3 10/0 5/0			
X-ray Manufacturability Qualification	on (MQ)	- (top s	ide only)	Lot 1 10/0 5/0 Pass	Lot 2 10/0 5/0 Pass	Lot3 10/0 5/0 Pass			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C	on (MQ)	- (top s 500 C 170C	ide only) ycles	Lot 1 10/0 5/0 Pass 87/0	Lot 2 10/0 5/0 Pass 87/0	Lot3 10/0 5/0 Pass 87/0			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake		- (top s 500 C 170C 130C/	ide only) ycles (420 Hrs)	Lot 1 10/0 5/0 Pass 87/0 77/0	Lot 2 10/0 5/0 Pass 87/0 77/0	Lot3 10/0 5/0 Pass 87/0 77/0			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake **Biased HAST		- (top s 500 C 170C 130C/	ide only) ycles (420 Hrs) (85%RH (96 Hrs)	Lot 1 10/0 5/0 Pass 87/0 77/0	Lot 2 10/0 5/0 Pass 87/0 77/0	Lot3 10/0 5/0 Pass 87/0 77/0			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake **Biased HAST **Thermal Shock, -65/1500		- (top s 500 C 170C 130C/	ide only) ycles (420 Hrs) (85%RH (96 Hrs)	Lot 1 10/0 5/0 Pass 87/0 77/0 77/0	Lot 2 10/0 5/0 Pass 87/0 77/0 77/0	Lot3 10/0 5/0 Pass 87/0 77/0 77/0			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake **Biased HAST **Thermal Shock, -65/1500 Visual/Mechanical		- (top s 500 C 170C 130C/	ycles (420 Hrs) (85%RH (96 Hrs) Cycles	Lot 1 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass	Lot 2 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass	Lot3 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake **Biased HAST **Thermal Shock, -65/1500 Visual/Mechanical Physical Dimensions		- (top s 500 C 170C 130C/ 500 C	ycles (420 Hrs) (85%RH (96 Hrs) Cycles	Lot 1 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0	Lot 2 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0	Lot3 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake **Biased HAST **Thermal Shock, -65/150C Visual/Mechanical Physical Dimensions Salt Atmosphere		- (top s 500 C 170C 130C/ 500 C	ide only) ycles (420 Hrs) 85%RH (96 Hrs) Cycles s , 2 atm (96 Hrs) Steam age	Lot 1 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0	Lot 2 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0	Lot3 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake **Biased HAST **Thermal Shock, -65/1500 Visual/Mechanical Physical Dimensions Salt Atmosphere **Autoclave		- (top s 500 C 170C 130C/ 500 C	ide only) ycles (420 Hrs) 85%RH (96 Hrs) Cycles rs , 2 atm (96 Hrs)	Lot 1 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0	Lot 2 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0	Lot3 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake **Biased HAST **Thermal Shock, -65/1500 Visual/Mechanical Physical Dimensions Salt Atmosphere **Autoclave Solderability		- (top s 500 C 170C 130C/ 500 C 24 Hr 121C 8 Hrs	ide only) ycles (420 Hrs) 85%RH (96 Hrs) Cycles s , 2 atm (96 Hrs) Steam age	Lot 1 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0 22/0	Lot 2 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0 22/0	Lot3 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0 22/0			
X-ray Manufacturability Qualification **Temp Cycle, -65C/150C **High Temp Storage Bake **Biased HAST **Thermal Shock, -65/1500 Visual/Mechanical Physical Dimensions Salt Atmosphere **Autoclave Solderability Bond Pull		- (top s 500 C 170C 130C/ 500 C 24 Hr 121C 8 Hrs	ide only) ycles (420 Hrs) (85%RH (96 Hrs) Cycles s, 2 atm (96 Hrs) Steam age all bonds, min. 3 units all bonds, min. 3 units	Lot 1 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0 22/0 76/0	Lot 2 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0 22/0 76/0	Lot3 10/0 5/0 Pass 87/0 77/0 77/0 77/0 Pass 5/0 22/0 77/0 22/0 76/0			

Qı	ual Vehicle 2 :	TPS2	2231RGPR (MSL 2-260	C)			
Package Construction Detail	ils			-			
Assembly Site:	TI Clark		Mold Compound:	4208625			
# Pins-Designator, Family: 20-RGP, QFN			Mount Compound:	420776			
Leadframe (Finish, Base): NiPdAu			Bond Wire:	2.0 Mil [
Qualification: Plan	☐ ☐ Test Res	ults					
				San	Sample Size / Fail		
Reliability Test			ditions	Lot 1	Lot 2	Lot3	
Die Shear		-		10/0	10/0	10/0	
X-ray X-ray		(top	side only)	5/0	5/0	5/0	
**High Temp Storage Bake			C (420 Hrs)	77/0	77/0	77/0	
**Thermal Shock, -65/150)C		Cycles	77/0	77/0	77/0	
**Temp Cycle, -65C/150C	_		Cycles	87/0	87/0	87/0	
Visual/Mechanical			-,	Pass	Pass	Pass	
Physical Dimensions				5/0	5/0	5/0	
Salt Atmosphere		24 H	Hrs	22/0	22/0	22/0	
**High Temp Operating Life	 P	1	C (240 Hrs)	77/0	77/0	77/0	
**Autoclave	<u> </u>		C, 2 atm (96 Hrs)	77/0	77/0	77/0	
Solderability			rs Steam age	22/0	22/0	22/0	
Bond Pull			pall bonds, min. 3 units	76/0	76/0	76/0	
Bond Shear			pall bonds, min. 3 units	76/0	76/0	76/0	
Moisture Sensitivity			260C	22/0	22/0	22/0	
Manufacturability Qualification (MQ)				Pass	Pass	Pass	
**- Preconditioning sequence: Level 2-260			l	. 0.00		. 455	
			0240RHBR (MSL 2-26	0C)			
Package Construction Detail			02.1011.1511 (1.151.2.2.2.	 			
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: Plan	☐ ☐ Test Res	ulte	Bona Wile.] 1.5 /	Jiai, Ca		
Reliability Test	Z rest kes		ditions	Sample Size / Fail			
,			uitions	<u> </u>			
Die Shear		- /	and a such A	10/0			
X-ray	ion (MO)	(top	side only)	5/0			
Manufacturability Qualificat		EOO	Cycles	Pass			
**Thermal Shock, -65/150			Cycles	77/0			
**Temp Cycle, -65C/150C			Cycles		87/0		
**Autoclave		121	C, 2 atm (96 Hrs)		77/0		
Visual/Mechanical					Pass		
Physical Dimensions		70 1	all banda min 2		5/0		
Bond Pull			pall bonds, min. 3 units		76/0		
Bond Shear			pall bonds, min. 3 units		76/0		
**High Temp Storage Bake			C (420 Hrs)		77/0		
Moisture Sensitivity			260C		22/0		
**- Preconditioning sequen	ce: Level 2-260)C.					

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 Composit			ition: SnAgCu				
# Pins-Designator, Family:	P, WCSP	Bump Dian	neter: 0.23mm						
Qualification: Plan Test Results									
Reliability Test		Conditions		S	ample Size	/ Fail			
					Lot#1				
Electrical Characterization		-			Pass				
Bump Shear		Per A-T specific			54/0				
Manufacturability (MQ)		(per mfg. Site s	pecification)	Pass					
Reference Qualification									
Qual Vehicle : CD3239 (MSL1-260C)									
Package Construction Details									
Assembly & Bump Site:	JCAP		Bump Compos	sition:	SnAgCu				
# Pins-Designator, Family:	25-YF	P, WCSP	neter: 0.23mm						
Qualification: Plan X Test Results									
Reliability Test		Conditions	Sample Size / Fail						
				Lot#	1 Lot#2	Lot#3			
**Steady-state Life Test		150C (300 Hou	116/	0 116/0	116/0				
**High Temp. Storage Bake		150C (1000 Hours)			77/0	77/0			
**Biased HAST		130C/85%RH (96 Hours)			77/0	77/0			
**Unbiased HAST	130C/85%RH (96 Hours)			77/0	77/0				
**Temperature Cycle		-55C/+125C (1	77/0		77/0				
Manufacturability (MQ)		(per mfg. Site s	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.

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