

PCN Number:	20130903003A		PCN Date:	10/31/2013																									
Title:	Qualification of ASES, TITL and JCAP as Additional Assembly / Test Site for Select Devices																												
Customer Contact:	PCN_ww_admin_team@list.ti.com		Phone:	+1(214)480-6037	Dept: Quality Services																								
Change Type:																													
☒	Assembly Site	☐	Assembly Process	☒	Assembly Materials																								
☐	Design	☐	Electrical Specification	☐	Mechanical Specification																								
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process																								
☒	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process																								
☐	Wafer Fab Site	☐	Wafer Fab Materials	☐	Wafer Fab Process																								
	☐	Part number change																											
PCN Details																													
Description of Change:																													
Revision A is to remove select devices in the Product Affected Section (with strikethrough) and highlighted in yellow under Group 1 Device. These devices were inadvertently added and not affected by this change. Texas Instruments Incorporated is announcing the qualification of ASES, TITL 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: HNT to ASES <table border="1"> <thead> <tr> <th></th> <th>HNT</th> <th>ASES</th> </tr> </thead> <tbody> <tr> <td>Wire type</td> <td>1.0 Mil Au</td> <td>1.0 Mil Cu</td> </tr> <tr> <td>Mold Compound</td> <td>450179</td> <td>EN2000515</td> </tr> </tbody> </table> Group 2 Device: AMKOR K1 to TITL <table border="1"> <thead> <tr> <th></th> <th>AMKOR K1</th> <th>TITL</th> </tr> </thead> <tbody> <tr> <td>Lead finish</td> <td>Matte Sn</td> <td>NiPdAu</td> </tr> <tr> <td>Mold Compound</td> <td>101319570</td> <td>4205442</td> </tr> </tbody> </table> Group 3 Device: STS to JCAP <table border="1"> <thead> <tr> <th></th> <th>STS-AT</th> <th>JCAP-AT</th> </tr> </thead> <tbody> <tr> <td>Bump Site</td> <td>STS-BP</td> <td>JCAP-FAB</td> </tr> </tbody> </table> Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.							HNT	ASES	Wire type	1.0 Mil Au	1.0 Mil Cu	Mold Compound	450179	EN2000515		AMKOR K1	TITL	Lead finish	Matte Sn	NiPdAu	Mold Compound	101319570	4205442		STS-AT	JCAP-AT	Bump Site	STS-BP	JCAP-FAB
	HNT	ASES																											
Wire type	1.0 Mil Au	1.0 Mil Cu																											
Mold Compound	450179	EN2000515																											
	AMKOR K1	TITL																											
Lead finish	Matte Sn	NiPdAu																											
Mold Compound	101319570	4205442																											
	STS-AT	JCAP-AT																											
Bump Site	STS-BP	JCAP-FAB																											
Reason for Change:																													
Continuity of Supply																													
Anticipated Impact on Fit, Form, Function, Quality or Reliability (Positive / Negative):																													
None																													

Changes to Product Identification Resulting from this PCN:

Group 1 Device: HNT to ASESH

Assembly Site		
Hana Thailand	Assembly Site Origin (22L)	ASO: HNT
ASE Shanghai	Assembly Site Origin (22L)	ASO: ASH

ASSEMBLY SITE CODES: HNT =H, [ASESH](#) = A

Group 2 Device: AMKOR K1 to TITL

Assembly Site		
AMKOR Korea K1	Assembly Site Origin (22L)	ASO: AMN
TI Taiwan	Assembly Site Origin (22L)	ASO: TAI

ASSEMBLY SITE CODES: AMN =7, [TITL](#) = T

Group 3 Device: SCS to JCAP

Assembly Site		
STATS ChipPAC-AT	Assembly Site Origin (22L)	ASO: STS
JCAP-AT	Assembly Site Origin (22L)	ASO: JCP

ASSEMBLY SITE CODES: STS =G, [JCAP](#) = P

Sample product shipping label (not actual product label)



Product Affected: Group 1 Device

OPA1632DGN	THS3202DGNG4	THS4121IDGN	THS4150CDGNG4
OPA1632DGNG4	THS3202DGNR	THS4121IDGNG4	THS4150CDGNR
OPA1632DGNR	THS3202DGNRG4	THS4121IDGNR	THS4150CDGNGRG4
OPA1632DGNRG4	THS4011CDGN	THS4121IDGNGRG4	THS4150IDGN
THS3001CDGN	THS4011CDGNG4	THS4130CDGK	THS4150IDGNG4
THS3001CDGNG4	THS4011CDGNR	THS4130CDGKG4	THS4150IDGNR
THS3001CDGNR	THS4011CDGNGRG4	THS4130CDGN	THS4150IDGNGRG4
THS3001CDGNGRG4	THS4011IDGN	THS4130CDGNG4	THS4151CDGK
THS3001HVCDGN	THS4011IDGNG4	THS4130CDGNR	THS4151CDGKG4
THS3001HVCDGNG4	THS4011IDGNR	THS4130CDGNGRG4	THS4211DGK
THS3001HVIDGN	THS4011IDGNGRG4	THS4130IDGK	THS4211DGKG4
THS3001HVIDGNG4	THS4022IDGN	THS4130IDGKG4	THS4211DGN
THS3001IDGN	THS4022IDGNG4	THS4130IDGKR	THS4211DGNG4
THS3001IDGNG4	THS4022IDGNR	THS4130IDGKRG4	THS4211DGNR
THS3001IDGNR	THS4022IDGNGRG4	THS4130IDGN	THS4211DGNRG4
THS3001IDGNGRG4	THS4031CDGN	THS4130IDGNG4	THS4222DGK
THS3062DGN	THS4031CDGNG4	THS4130IDGNR	THS4222DGKG4
THS3062DGNG4	THS4031CDGNR	THS4130IDGNGRG4	THS4222DGN
THS3110IDGN	THS4031CDGNGRG4	THS4131CDGK	THS4222DGNG4
THS3110IDGNG4	THS4031IDGN	THS4131CDGKG4	THS4222DGNR
THS3110IDGNR	THS4031IDGNG4	THS4131CDGKR	THS4222DGNRG4

THS3110IDGNRG4	THS4031IDGNR	THS4131CDGKRG4	THS4500IDGK
THS3111CDGNR	THS4031IDGNRG4	THS4131CDGN	THS4500IDGKG4
THS3111CDGNRG4	THS4032CDGN	THS4131CDGNG4	THS4500IDGN
THS3111IDGN	THS4032CDGNG4	THS4131CDGNR	THS4500IDGNG4
THS3111IDGNG4	THS4032IDGN	THS4131CDGNRG4	THS4500IDGNR
THS3111IDGNR	THS4032IDGNG4	THS4131IDGK	THS4500IDGNRG4
THS3111IDGNRG4	THS4032IDGNR	THS4131IDGKG4	THS4504DGK
THS3120CDGN	THS4032IDGNRG4	THS4131IDGKR	THS4504DGKG4
THS3120CDGNG4	THS4121CDGK	THS4131IDGKRG4	THS4504DGN
THS3120CDGNR	THS4121CDGKG4	THS4131IDGN	THS4504DGNG4
THS3120CDGNRG4	THS4121CDGKR	THS4131IDGNG4	THS4504DGNR
THS3120IDGN	THS4121CDGKRG4	THS4131IDGNR	THS4504DGNRG4
THS3120IDGNG4	THS4121CDGN	THS4131IDGNRG4	THS4505DGK
THS3121IDGN	THS4121CDGNG4	THS4140CDGN	THS4505DGKG4
THS3121IDGNG4	THS4121CDGNR	THS4140CDGNG4	THS4505DGN
THS3202DGK	THS4121CDGNRG4	THS4140IDGN	THS4505DGNG4
THS3202DGKG4	THS4121IDGK	THS4140IDGNG4	THS4505DGNR
THS3202DGKR	THS4121IDGKG4	THS4140IDGNR	THS4505DGNRG4
THS3202DGKRG4	THS4121IDGKR	THS4140IDGNRG4	THS6072IDGNR
THS3202DGN	THS4121IDGKRG4	THS4150CDGN	THS6072IDGNRG4

Product Affected: Group 2 Device			
MSP430V250IPZ			
Product Affected: Group 3 Device			
CDC3RL02YFPR	TPS22932BYFPR	TPS22932BYFPT	

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 : THS3202DGK (MSL1-260C)			
Package Construction Details			
Assembly Site:	ASESH	Mold Compound:	EN2000515
# Pins-Designator, Family:	8-DGK, MSOP	Mount Compound:	EY1000063
Lead Finish, Base	NiPdAu, Cu	Bond Wire:	1.0 Mil Dia. Cu
Qualification: ☐ Plan ☒ Test Results			
Reliability Test	Conditions	Sample Size / Fail	
Electrical Characterization	-	Pass	
**Temperature Cycle	-65C/+150C (500 Cyc)	77/0	
Manufacturability (MQ)	(per mfg. Site specification)	Pass	
Moisture Sensitivity	L1-260C	12/0	
Notes ** - Preconditioning sequence: Level 1-260C.			

Reference Qualification					
Qual Vehicle : LM358ADGKR (MSL1-260C)					
Package Construction Details					
Assembly Site:	ASESH	Mold Compound:	EN2000515		
# Pins-Designator, Family:	8-DGK, MSOP	Mount Compound:	EY1000063		
Lead Finish, Base	NiPdAu, Cu	Bond Wire:	1.0 Mil Dia. Cu		
Qualification: ☐ Plan ☒ Test Results					
Reliability Test	Conditions	Sample Size / Fail			
		Lot#1	Lot#2	Lot#3	
**Steady-state Life Test	150C (168 Hours)	77/0	77/0	77/0	
**High Temp. Storage Bake	150C (500 Hours)	77/0	77/0	77/0	
**Biased HAST	130C/85%RH (96 Hours)	77/0	77/0	77/0	
**Autoclave 121C	121C, 2 atm (96 Hours)	77/0	77/0	77/0	
**Temperature Cycle	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
Solderability	Steam age, 8 Hours	22/0	22/0	22/0	
Flammability	Method A - UL94-0	5/0	5/0	5/0	
Flammability	Method B - IEC 695-2-2	5/0	5/0	5/0	
Flammability	Method C - UL 1694	5/0	5/0	5/0	
Salt Atmosphere	24 Hours	5/0	5/0	5/0	
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.					
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 : MSP430F4794IPZ (MSL1-260C)					
Package Construction Details					
Assembly Site:	TITL	Mold Compound:	4205442		
# Pins-Designator, Family:	100-PZ, LQFP	Mount Compound:	4042504		
Lead Finish, Base	NiPdAu, Cu	Bond Wire:	0.95 Mil Dia. Au		
Qualification: ☐ Plan ☒ Test Results					
Reliability Test	Conditions	Sample Size / Fail			
Electrical Characterization	-	Pass			
**Operating Life Test	150C (300 Hours)	120/0			
**Temperature Cycle	-65C/+150C (1000 Cyc)	77/0			
**High Temp. Storage Bake	170C (420 Hours)	77/0			
ESD CDM	+/-500V	3/0			
ESD HBM	+/-2KV	3/0			
ESD MM	+/-500V	3/0			
X-ray	Top side only	5/0			
Manufacturability (MQ)	(per mfg. Site specification)	Pass			
Notes **- Preconditioning sequence: Level 1-260C.					

Qualification Data: Group 3

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 : CD3239 (MSL1-260C)

Package Construction Details

Assembly & Bump Site:	JCAP	Bump Composition:	SnAgCu
# Pins-Designator, Family:	25-YFP, WCSP	Bump Diameter:	0.23mm

Qualification: ☐ Plan ☒ 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.

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