12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20130903003
Qualification of ASESH, TITL and JCAP as Additional Assembly and Test Site for Select Devices
Change Notification / Sample Request

Dear Customer:

This is an announcement of change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

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.

We request you acknowledge receipt of this notification within **30** days of the date of this notice. If you require samples to conduct an evaluation, please make any request within the 30 days—samples are not built ahead of the change. Please see the schedule on the following pages for availability dates. You may contact the PCN Manager or your local Field Sales Representative to acknowledge this PCN and request samples.

The changes discussed within this PCN will not take effect any earlier than **90** days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change. This notification period is per TI's standard process. Any negotiated alternative change requirements will be provided via the customer's defined process. Customers with previously negotiated, special requirements will be handled separately. Any inquiries should be directed to your local Field Sales Representative.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services
Phone: +1(214) 480-6037
Fax: +1(214) 480-6659

PCN# 20130903003
Attachment: 1

Products Affected:

According to our records, there are the affected device(s) that you have purchased within the past twenty-four (24) months. Technical details of this Product Change follow on the next page(s).

PCN Number:	20130903003	**PCN Date:**	09/12/2013
Title:	Qualification of ASESH, 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		
Proposed 1st Ship Date:	12/12/2013	**Estimated Sample Availability:**	Date Provided at Sample request

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:

Texas Instruments Incorporated is announcing the qualification of ASESH, 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 ASESH

	HNT	ASESH
Wire type	1.0 Mil Au	1.0 Mil Cu
Mold Compound	450179	EN2000515

Group 2 Device: AMKOR K1 to TITL

	AMKOR K1	TITL
Lead finish	Matte Sn	NiPdAu
Mold Compound	101319570	4205442

Group 3 Device: STS to JCAP

	STS-AT	JCAP-AT
Bump Site	STS-BP	JCAP-FAB

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

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	THS4150CDGNRG4
OPA1632DGNRG4	THS4011CDGN	THS4121IDGNRG4	THS4150IDGN
THS3001CDGN	THS4011CDGNG4	THS4130CDGK	THS4150IDGNG4
THS3001CDGNG4	THS4011CDGNR	THS4130CDGKG4	THS4150IDGNR
THS3001CDGNR	THS4011CDGNRG4	THS4130CDGN	THS4150IDGNRG4
THS3001CDGNRG4	THS4011IDGN	THS4130CDGNG4	THS4151CDGK
THS3001HVCDGN	THS4011IDGNG4	THS4130CDGNR	THS4151CDGKG4
THS3001HVCDGNG4	THS4011IDGNR	THS4130CDGNRG4	THS4211DGK
THS3001HVIDGN	THS4011IDGNRG4	THS4130IDGK	THS4211DGKG4
THS3001HVIDGNG4	THS4022IDGN	THS4130IDGKG4	THS4211DGN
THS3001IDGN	THS4022IDGNG4	THS4130IDGKR	THS4211DGNG4
THS3001IDGNG4	THS4022IDGNR	THS4130IDGKRG4	THS4211DGNR
THS3001IDGNR	THS4022IDGNRG4	THS4130IDGN	THS4211DGNRG4
THS3001IDGNRG4	THS4031CDGN	THS4130IDGNG4	THS4222DGK
THS3062DGN	THS4031CDGNG4	THS4130IDGNR	THS4222DGKG4
THS3062DGNG4	THS4031CDGNR	THS4130IDGNRG4	THS4222DGN
THS3110IDGN	THS4031CDGNRG4	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