12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20111117003B
Qualification of TIEM (Melaka, MLA) as an Additional Assembly and Test Site option for select devices in the DCQ package
Change Notification

Dear Customer:

The purpose of this B version of the PCN is to retract TPS7A4501DCQR/T device highlighted in yellow in the "Product Affected" section of this document.

Severe flooding in Thailand has temporarily disrupted production at some of TI's suppliers, including the sub-contractor Hana Thailand (HNT).

TI is being updated on the situation daily by our production and logistics partners and has taken several actions to mitigate the potential impact to supply, including identifying and qualifying alternative sources.

This is an announcement for the transfer of product to alternate assembly and test sites. To minimize the supply disruption to TI's customer base, we are moving quickly to shift production for the package families identified within this PCN.

While TI has made every attempt to ensure this PCN is inclusive of all needed transfers based on our best current knowledge, this list is subject to change. TI will send updates if changes are identified. In addition, PCNs associated with the related capacity transfers could be accelerated if they enable more efficient usage of the defined alternate sites.

In addition to the prior mentioned transfer strategy that incorporates package family quals and alternate site selection based on each site's current qualification status, TI intends to reduce customer risk by performing additional device yield/bin analysis prior to production deliveries.

TI is committed to delivering quality products while also working with our customers to minimize supply gaps.

Please find the details of this strategy on the following pages. TI requests you acknowledge receipt of this notification within **21** days of the date of this notification. In order to minimize supply delays, TI has already initiated production at the alternate sites with material availability and shipments beginning as early as January 2012.

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

20111117003B
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

TPS7A4501DCQT

Technical details of this Product Change follow on the next page(s).

PCN Number:	20111117003B	PCN Date:	Mar 28, 2017
Title:	Qualification of TIEM (Melaka, MLA) as an Additional Assembly and Test Site option for select devices in the DCQ package		
Customer Contact:	PCN Manager	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

PCN Details

Description of Change:

The purpose of Version B is to retract TPS7A4501DCQR/T device from this notification. This will continue to be sourced from HNT. The device affected is highlighted in yellow in the Product Affected Section and with a ~~**strikethrough**~~.

Qualification of TIEM (Melaka, MLA) as an Additional Assembly and Test Site option for select devices in the DCQ package. See table below for assembly comparison/differences between current and new sites:

	Current: HNT	**New:TIEM-AT**
Mount Compound	400159	080598
Mold Compound	450179	096890
Bond wire diameter	1.0 mil 1.25 mils 1.5 mils 2.0 mils	1.0 mil 1.3 mils 1.5 mils 2.0 mils
Lead Frame	NiPdAu, Cu	Matte Sn

Upon expiration of this PCN, TI will combine lead free solutions in a single ***standard part number***, for example; ***TPS79430DCQ*** – can ship with both Matte Sn and NiPdAu.

Example:

- Customer order for 75 units of TPS79430DCQ with 25 units SPQ (Standard Pack Quantity per Tube).
- TI can satisfy the above order in one of the following ways.
  - I. 3 Tubes of NiPdAu finish.
  - II. 3 Tubes of Matte Sn finish
  - III. 2 Tubes of Matte Sn and 1 tube of NiPdAu finish.
  - IV. 2 Tubes of NiPdAu and 1 tube of Matte Sn finish

Reason for Change:

Continuity of Supply. Introduce alternate sites due to the temporary closure of Hana Thailand.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None.

Changes to product identification resulting from this PCN:

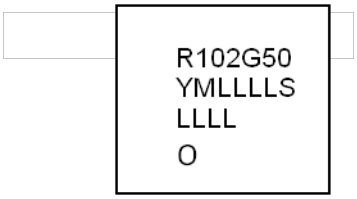
Assembly Site

HNT	Assembly Site Origin (22L)	ASO: HNT
TIEM	**Assembly Site Origin (22L)**	**ASO: CU6**

Sample product shipping label to show code location only - not actual product label

There will be no change in topside symbolization (shown below).

Device Marking:



YM = YEAR MONTH DATE CODE

LLLL = ASSEMBLY LOT CODE

S = ASSEMBLY SITE CODE (Varies by Assembly Site)

O = PIN 1 INDICATOR

O - PIN 1 (MARKED)

Products Affected:

HPA00162DCQ	TL1963A-33DCQR	TPS73618DCQR	TPS79433DCQR
HPA00400DCQR	TL1963A-33DCQT	TPS73625DCQ	TPS79501DCQ
HPA00401DCQR	TL1963ADCQR	TPS73625DCQR	TPS79501DCQR
HPA00501DCQR	TL1963ADCQT	TPS73630DCQ	TPS79516DCQ
HPA00524DCQR	~~TPS72501DCQ~~	TPS73630DCQR	TPS79516DCQR
HPA00610DCQR	~~TPS72501DCQR~~	TPS73633DCQ	TPS79518DCQ
HPA01087DCQR	~~TPS72515DCQ~~	TPS73633DCQR	TPS79518DCQR
REG102GA-2.5	~~TPS72515DCQR~~	TPS73701DCQ	TPS79525DCQ
REG102GA-2.85	TPS72516DCQ	TPS73701DCQR	TPS79525DCQR
REG102GA-3	TPS72516DCQR	TPS73718DCQ	TPS79530DCQ
REG102GA-3.3	~~TPS72518DCQ~~	TPS73718DCQR	TPS79530DCQR
REG102GA-3.3/2K5	~~TPS72518DCQR~~	TPS73725DCQ	TPS79533DCQ
REG102GA-5	TPS72525DCQ	TPS73725DCQR	TPS79533DCQR
REG102GA-5/2K5	TPS72525DCQR	TPS73733DCQ	TPS79601DCQ
REG102GA-A	TPS726126DCQ	TPS73733DCQR	TPS79601DCQR
REG102GA-A/2K5	TPS726126DCQR	TPS73734DCQ	TPS79618DCQ
REG103GA-2.5	TPS72615DCQ	TPS73734DCQR	TPS79618DCQR
REG103GA-2.5/2K5	TPS72615DCQR	TPS73801DCQR	TPS79625DCQ
REG103GA-2.7	TPS72616DCQ	TPS78601DCQ	TPS79625DCQR
REG103GA-3	TPS72616DCQR	TPS78601DCQR	TPS79628DCQ
REG103GA-3.3	TPS72618DCQ	TPS78618DCQ	TPS79628DCQR
REG103GA-3.3/2K5	TPS72618DCQR	TPS78618DCQR	TPS79630DCQ
REG103GA-5	~~TPS72625DCQ~~	TPS78625DCQ	TPS79630DCQR
REG103GA-5/2K5	~~TPS72625DCQR~~	TPS78625DCQR	TPS79633DCQ
REG103GA-A	TPS73201DCQ	TPS78628DCQR	TPS79633DCQR
REG103GA-A/2K5	TPS73201DCQR	TPS78630DCQ	TPS79650DCQ
REG104GA-2.5	TPS73215DCQ	TPS78630DCQR	TPS79650DCQR

REG104GA-2.5/2K5	TPS73215DCQR	TPS78633DCQ	~~TPS7A4501DCQR~~
REG104GA-3	TPS73218DCQ	TPS78633DCQR	~~TPS7A4501DCQT~~
REG104GA-3.3	TPS73218DCQR	TPS78650DCQ	TPS7A4515DCQR
REG104GA-3.3/2K5	TPS73225DCQ	TPS78650DCQR	TPS7A4515DCQT
REG104GA-5	TPS73225DCQR	TPS79401DCQ	TPS7A4518DCQR
REG104GA-5/2K5	TPS73230DCQR	TPS79401DCQR	TPS7A4518DCQT
REG104GA-A	TPS73233DCQ	TPS79418DCQ	TPS7A4525DCQR
REG104GA-A/2K5	TPS73233DCQR	TPS79418DCQR	TPS7A4525DCQT
SN0804036DCQR	TPS73250DCQ	TPS79425DCQ	TPS7A4533DCQR
TL1963A-15DCQR	TPS73250DCQR	TPS79425DCQR	TPS7A4533DCQT
TL1963A-15DCQT	TPS73601DCQ	TPS79428DCQ	TPS7A6701DCQR
TL1963A-18DCQR	TPS73601DCQR	TPS79428DCQR	TPS7A6801DCQR
TL1963A-18DCQT	TPS73615DCQ	TPS79430DCQ	
TL1963A-25DCQR	TPS73615DCQR	TPS79430DCQR	
TL1963A-25DCQT	TPS73618DCQ	TPS79433DCQ	

Qualification Data:

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.

Qualification Schedule:	**Start:**	12/2011	**End:**	End of 01/2012

Qual Vehicle 1: REG103GA MSL = LEVEL2-260C

Assembly Site:	TIEM-Melaka	Mold Compound:	096890
# Pins-Designator, Family:	6-DCQ, SOT223	Mount Compound:	080598
Lead Frame (Finish, Base):	Matte SN, Cu	Bond Wire:	1.5 Mil Dia., Au
Passivation:	SiON/PSG/SiO2 0.6um		

Qualification: ☒ **Plan** ☐ **Test Results**

Reliability Test	Conditions	Sample Size (PASS/FAIL)
Preconditioning	(per the appropriate pkg level)	154/0
Electrical Characterization	Full Temperature	15/0
High Temp. Storage Bake	170 C / 420 Hrs (3xReflow)	77/0
**Unbiased HAST	130C/85%RH (96Hrs)	77/0
**T/C -65C/150C	-65C/+150C (500 Cycles)	77/0
Physical Dimensions	(per mechanical drawing)	5/0
Bond Strength	76 ball bonds, min. 3 units	76/0
Bond Pull	Indicate Downbonds vs. lead finger results. 76 Wire, 3 units min	76/0
Die Shear	-	10/0
Manufacturability	(per mfg. Site specification)	Pass
X-ray	(top side only)	5/0
Moisture Sensitivity	(level 2 @ 260C +5/-0C)	12/0

**Preconditioning: L2C -260C

Qual Vehicle 2: TPS73701DCQ MSL = LEVEL2-260C

Assembly Site:	TIEM-Melaka	Mold Compound:	096890
# Pins-Designator, Family:	6-DCQ, SOT223	Mount Compound:	080598
Lead Finish:	Matte SN, Cu	Bond Wire:	1.3 Mils Dia., Au
Passivation:	12KA CN		

Qualification: ☒ **Plan** ☐ **Test Results**			
Reliability Test	Conditions	Sample Size (PASS/FAIL)	
		Lot # 1	Lot # 2
Preconditioning	(per the appropriate pkg level)	231/0	77/0
Electrical Characterization.	Full Temperature(PDS)	15/0	-
High Temp. Storage Bake	170 C / 420 Hrs (3xReflow)	77/0	-
**Biased HAST	130C/85%RH (96 Hrs)	77/0	77/0
**Unbiased HAST	130C/85%RH (96Hrs)	77/0	-
**T/C -65C/150C	-65C/+150C (500 Cycles)	77/0	-
Post Wafer Saw Inspection	30 die/wafer, 5 separate locations	30/0	30/0
Physical Dimensions	(per mechanical drawing)	5/0	5/0
Bond Strength	76 ball bonds, min. 3 units	76/0	76/0
Bond Pull	Indicate Down bonds vs. lead finger results. 76 Wire, 3 units min	76/0	76/0
Die Shear	-	10/0	10/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass
X-ray	(top side only)	5/0	-
Moisture Sensitivity	(level 2 @ 260C +5/-0C)	12/0	-
**Preconditioning: L2C -260C			

Qual Vehicle 3: TPS7A4501DCQ MSL **=** LEVEL2-260C			
Assembly Site:	TIEM-Melaka	Mold Compound:	096890
# Pins-Designator, Family:	6-DCQ, SOT223	Mount Compound:	080598
Lead Frame (Finish, Base):	Matte SN, Cu	Bond Wire:	2.0 Mils Dia., Au
Passivation:	10KACN		

Qualification: ☒ **Plan** ☐ **Test Results**		
Reliability Test	Conditions	Sample Size (PASS/FAIL)
Preconditioning	(per the appropriate pkg level)	154/0
Electrical Characterization	Full Temperature	15/0
High Temp. Storage Bake	150C (1000 Hrs) (3xReflow)	77/0
**Unbiased HAST	130C/85%RH (96Hrs)	77/0
**T/C -65C/150C	-65C/+150C (500 Cycles)	77/0
Solderability	Steam age, 8 hours	22/0
Lead Pull	# of leads to destruction, min. 3 units	22/0
Lead Fatigue	# of leads, min. 3 units	22/0
Lead Finish Adhesion	# of leads, min. 3 units	15/0
Physical Dimensions	(per mechanical drawing)	5/0
Flammability	Method A - UL94-0	5/0
Die Shear	-	10/0
Manufacturability	(per mfg. Site specification)	1/0
Salt Atmosphere	24 Hrs	22/0
X-ray	(top side only)	5/0
Moisture Sensitivity	(level 2 @ 260C +5/-0C)	12/0
**Preconditioning: L2C -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