PCN Number:	20160301001	PCN Date:	03/04/2016
Title:	Qualification of TIPI as Additional Assembly and Test Site for Select SOT-23 and TQFP Package Devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	06/04/2016	Estimated Sample Availability:	Date Provided at Sample request

Change Type:					
☒	Assembly Site	☒	Design	☐	Wafer Bump Site
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process
☐	Mechanical Specification	☒	Test Site	☐	Wafer Fab Site
☒	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials
				☐	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing the qualification of TIPI as Additional Assembly and Test Site for select devices listed in the "Product Affected" Section.

Current assembly sites and Material differences are as follows.

Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
NFME	NFM	CHN	Nantong, Jiangsu
TI Taiwan	TAI	TWN	Chung Ho, New Taipei City
TI Philippines	**PHI**	**PHL**	**Baguio City**

Material Differences:

Group 1 Device: NFME to TI Philippines (SOT-23 Package)

	Current	Additional Material
Die Rev.	B0	C0
Mount Compound	SID #A-03	4207123
Wire Type	Au	Cu
Mold compound	SID #R-13	4222198

Die revision change covers subsequent layout adoptions for the Cu Wire process conditions. There is no change in form, fit and function due to these adoptions.

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

Group 2 Device: TI Taiwan to TI Philippines (TQFP Package)

- No Material differences between sites

Reason for Change:

Continuity of supply.

Anticipated impact on Material Declaration

☐	No Impact to the Material Declaration	☒	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained from the TI ECO website.

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

None

Changes to product identification resulting from this PCN:

Assembly Site		
NFME	Assembly Site Origin (22L)	ASO: NFM
TI Taiwan	Assembly Site Origin (22L)	ASO: TAI
TI-Philippines	Assembly Site Origin (22L)	ASO: PHI

Group 1 Device:

Die Rev designator will change as shown in the table and sample label below:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
B0	**C0**

Sample product shipping label (not actual product label)

ASSEMBLY SITE CODES: NFME = E, TITL = T, TIPI = W

Product Affected: Group 1 Devices

TLV62565DBVR	TLV62565DBVT	TLV62566DBVR	TLV62566DBVT

Product Affected: Group 2 Devices

TAS5747PHP	TAS5747PHPR

Group 1: Qualification Report

TLV62565DBV & TLV62566DBV Cu Bond Wired Version

Approve Date 29-Feb-2016

Product Attributes

Attributes	Qual Device: TLV62565DBV	Qual Device: TLV62566DBV	QBS Process Reference: TPS51217DSC	QBS Package Reference: TPS2051CDBVR	QBS Package Reference: TPS2552DBVR	QBS Package Reference: TPS76933DBVR
Assembly Site	TIPI	TIPI	CLARK-AT	TIPI	TIPI	TIPI
Package Family	SOT	SOT	WSON	SOT	SOT	SOT
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	RFAB	RFAB	RFAB	RFAB	MH8	DL-LIN
Wafer Process	LBC7	LBC7	LBC7	LBC7 X DCU	LBC7	LBC3S

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260C: TLV62565, TLV62566

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: TLV62565DBV	Qual Device: TLV62566DBV	QBS Process Reference: TPS51217DSC	QBS Package Reference: TPS2051CDBVR	QBS Package Reference: TPS2552DBVR	QBS Package Reference: TPS76933DBVR
AC	Autoclave 121C	96 Hours	1/77/0	-	3/231/0	3/231/0	3/231/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	Pass	Pass	Pass
FLAM	Flammability (UL 94V-0)	--	-	-	-	-	-	3/15/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-	3/231/0	3/231/0
HBM	ESD - HBM	2500 V	1/3/0	-	-	-	-	-
CDM	ESD - CDM	1500 V	1/3/0	-	-	-	-	3/9/0
HTOL	Life Test, 135C	635 Hours	-	-	3/231/0	-	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	3/230/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	3/231/0	3/231/0	3/231/0	3/231/0
LI	Lead Fatigue	Leads	-	-	-	-	-	3/66/0
LI	Lead Pull to Destruction	Leads	-	-	-	-	-	3/66/0
LU	Latch-up	(per JESD78)	1/6/0	-	3/18/0	-	-	-
PD	Physical Dimensions	--	-	-	-	3/15/0	3/15/0	3/15/0
SD	Solderability	8 Hours Steam Age	-	-	-	-	-	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	-	3/231/0	3/231/0	3/231/0	3/231/0
WBP	Bond Pull	Wires	1/30/0	-	-	3/228/0	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	1/30/0	-	-	3/228/0	3/228/0	3/228/0

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

Group 2: Qualification Report

TAS5747PHP with assembly in TIPI - 2 mil Cu and 0.8 mil Cu bond wire
Approved 02/10/2014

Product Attributes

Attributes	Qual Device: TAS5747PHP	QBS Product: TAS5745 _DIE REV	QBS Product: TAS5745PHP	QBS Process: VSP6825BZRC	QBS Package: SN755870PZP	QBS Package: TAS5709PHP
Assembly Site	TIPI	TITL	TITL	PHI	PHI	PHI
Package Family	HTQFP	HTQFP	HTQFP	JRBGA	HTQFP	TQFP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	RFAB	RFAB	RFAB	RFAB HIJI	HIJI	DMOS5
Wafer Fab Process	1833C05.24 LBC7	1833C05 LBC7	1833C05 LBC7	1833C05 LBC4	CMOS-DI	1833C05X4 LBC5X

- QBS: Qual By Similarity
- Qual Device TAS5747PHP is qualified at LEVEL3-260C
- Devices contain multiple dies: TAS5747PHP, TAS5745 _DIE REV, TAS5745PHP, VSP6825BZRC, TAS5708PHP, TAS5709PHP

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	Test Name / Condition	Duration	Qual Device: TAS5747PHP	QBS Product: TAS5745 _DIE REV	QBS Product: TAS5745PHP	QBS Process: VSP6825BZRC	QBS Package: SN755870PZP	QBS Package: TAS5709PHP
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	4/267/0	-	-
THB	Biased Temperature and Humidity, 85C/85%RH	1000 Hours	-	-	-	-	3/78/0	-
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0	3/230/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	1/77/0	3/231/0	3/231/0	3/246/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/231/0	3/231/0	-
TS	Thermal Shock - 65/150C	500 Cycles	-	-	-	-	3/231/0	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	3/120/0	-
HTOL	Life Test, 140C	480 Hours	-	-	-	3/231/0	-	-
WBS	Ball Bond Shear	Wires	-	-	1/76/0	-	-	2/152/0
WBP	Bond Pull	Wires	-	-	1/76/0	-	-	2/152/0
SD	Solderability	8 Hours Steam Age	-	-	-	-	3/66/0	-
SD	Surface Mount Solderability	8 Hours Steam Age-Pb Free Solder	-	-	-	-	-	3/66/0
PD	Physical Dimensions-Anita	--	-	-	-	-	1/5/0	-
PD	Physical Dimensions	--	-	-	-	-	2/10/0	3/15/0
LI	Lead Fatigue	Leads	-	-	-	-	-	3/66/0

HBM	ESD - HBM	1000 V	-	1/3/0	-	3/9/0	-	-
CDM	ESD - CDM	250 V	-	1/3/0	-	3/9/0	-	-
LU	Latch-up	(per JESD78)	-	1/6/0	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	-	-	-	-
FLAM	Flammability (IEC 695-2-2)	--	-	-	-	-	3/15/0	-
FLAM	Flammability (UL 94V-0)	--	-	-	-	-	3/15/0	-
LI	Lead Bend	Leads	-	-	-	-	3/9/0	-
LI	Lead Pull	Leads	-	-	-	-	3/9/0	3/66/0

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

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