

PCN Number:	20150928000C	PCN Date:	08/25/2016
Title:	Qualification of TIPI as Additional Assembly and Test Site for Select SOT-23 Package Devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Change Type:			
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change
<input type="checkbox"/>	Mechanical Specification	<input checked="" type="checkbox"/>	Test Site
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
		<input type="checkbox"/>	Wafer Bump Site
		<input type="checkbox"/>	Wafer Bump Material
		<input type="checkbox"/>	Wafer Bump Process
		<input type="checkbox"/>	Wafer Fab Site
		<input type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Wafer Fab Process
PCN Details			
Description of Change:			
Revision C is to remove select devices in the Product Affected Section (with strikethrough) and highlighted in yellow. These devices were inadvertently added and not affected by this change.			
Device in the Product Affected Section (with strikethrough) and no highlight were retracted under Revision B of this PCN.			
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.			
Group 1 Devices:			
Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
NFME	NFM	CHN	Nantong, Jiangsu
TI Philippines	PHI	PHL	Baguio City
Material Components:			
	Current	Additional Material	
Mount Compound	SID #A-03	4207173	
Wire Type	Au	Cu	
Mold compound	SID #R-13	4222226	
Group 2 Devices:			
Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
NFME	NFM	CHN	Nantong, Jiangsu
LEN	LIN	TW	Taichung
TI Philippines	PHI	PHL	Baguio City
Material Components:			
	Current		Additional Material
	NFME	LEN	TI Philippines
Mount Compound	SID #A-03	SID#0003C10332	4207173
Wire Type	Au	Au	Cu
Mold compound	SID #R-13	SID#0011G60007	4222226
Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.			
Reason for Change:			
Continuity of supply.			
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
LEN	Assembly Site Origin (22L)	ASO: LIN
TI-Philippines	Assembly Site Origin (22L)	ASO: PHI

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 2G
 MSL 2 /260C/1 YEAR SEAL DT
 MSL 1 /235C/UNLIM 03/29/04
 OPT:
 ITEM: 39
LBL: 5A (L)TO:1750



(1P) SN74LS07NSR
 (Q) 2000 (D) 0336
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483SI2
 (P)
 (2P) REV: (V) 0033317
 (20L) CSO: SHE (21L) CCO:USA
 (22L) ASO: MLA (23L) ACO: MYS

ASSEMBLY SITE CODES: NFME = E, LEN = 3, TIPI = W

Product Affected Group 1:

TPS76933DBVR	TPS76933DBVT	TPS77025DBVR	TPS77025DBVT
TPS76933DBVRG4	TPS76933DBVTG4	TPS77025DBVRG4	

Product Affected Group 2:

900-0380801	TPS2051CDBVT	TPS76133DBVT	TPS76950DBVT
905X0205100	TPS2061CDBVR	TPS76133DBVTG4	TPS76950DBVTG4
FX1077	TPS2061CDBVT	TPS76138DBVR	TPS77012DBVR
HPA00385DBVR	TPS2065CDBVR	TPS76138DBVT	TPS77012DBVT
HPA00714DBVR	TPS2065CDBVR-2	TPS76150DBVR	TPS77012DBVTG4
HPA01085DBVR	TPS2065CDBVT	TPS76150DBVRG4	TPS77015DBVR
HPA01085DVBR	TPS2065CDBVT-2	TPS76150DBVT	TPS77015DBVT
HPA01091DBVR	TPS2069CDBVR	TPS76150DBVTG4	TPS77015DBVTG4
HPA01198DBVR	TPS2069CDBVT	TPS76316DBVR	TPS77018DBVR
HPA02257DBVR	TPS2513DBVR	TPS76316DBVRG4	TPS77018DBVRG4
SN1409057DBVR	TPS2513DBVT	TPS76316DBVT	TPS77018DBVT
TLV70130DBVR	TPS2514DBVR	TPS76316DBVTG4	TPS77018DBVTG4
TLV70130DBVT	TPS2514DBVT	TPS76318DBVR	TPS77027DBVR
TLV70133DBVR	TPS2552DBVR	TPS76318DBVRG4	TPS77027DBVRG4
TLV70133DBVT	TPS2552DBVT	TPS76318DBVT	TPS77027DBVT
TLV70212DBVR	TPS2553DBVR	TPS76318DBVTG4	TPS77027DBVTG4
TLV70212DBVT	TPS2553DBVR-1	TPS76325DBVR	TPS77028DBVR
TLV70215DBVR	TPS2553DBVT	TPS76325DBVRG4	TPS77028DBVT
TLV70215DBVT	TPS2553DBVT-1	TPS76325DBVT	TPS77028DBVTG4
TLV70215PDBVR	TPS3110E15DBVR	TPS76325DBVTG4	TPS77030DBVR
TLV70215PDBVT	TPS3110E15DBVRG4	TPS76327DBVR	TPS77030DBVRG4
TLV70218DBVR	TPS3110E15DBVT	TPS76327DBVT	TPS77030DBVT
TLV70218DBVT	TPS3110E15DBVTG4	TPS76327DBVTG4	TPS77030DBVTG4
TLV70220PDBVR	TPS3124J18DBVR	TPS76328DBVR	TPS77033DBVR
TLV70220PDBVT	TPS3124J18DBVT	TPS76328DBVRG4	TPS77033DBVRG4
TLV70225DBVR	TPS3124J18DBVTG4	TPS76328DBVT	TPS77033DBVT

TLV70225DBVT	TPS3125J12DBVR	TPS76328DBVTG4	TPS77033DBVTG4
TLV70228DBVR	TPS3125J12DBVRG4	TPS76330DBVR	TPS77050DBVR
TLV70228DBVT	TPS3125J12DBVT	TPS76330DBVRG4	TPS77050DBVRG4
TLV70228PDBVR	TPS3125J12DBVTG4	TPS76330DBVT	TPS77050DBVT
TLV70228PDBVT	TPS3125L30DBVR	TPS76330DBVTG4	TPS77050DBVTG4
TLV70229DBVR	TPS3125L30DBVRG4	TPS76333DBVR	TPS78833DBVR
TLV70229DBVT	TPS3125L30DBVT	TPS76333DBVRG4	TPS78833DBVT
TLV70230DBVR	TPS3125L30DBVTG4	TPS76333DBVT	TPS78833DBVTG4
TLV70230DBVT	TPS3808G01DBVR	TPS76333DBVTG4	TPS79118DBVR
TLV70231DBVR	TPS3808G01DBVRG4	TPS76338DBVR	TPS79118DBVRG4
TLV70231DBVT	TPS3808G01DBVT	TPS76338DBVT	TPS79118DBVT
TLV70233DBVR	TPS3808G01DBVTG4	TPS76338DBVTG4	TPS79118DBVTG4
TLV70233DBVT	TPS3808G09DBVR	TPS76350DBVR	TPS79133DBVR
TLV70233PDBVR	TPS3808G09DBVRG4	TPS76350DBVRG4	TPS79133DBVRG4
TLV70233PDBVT	TPS3808G09DBVT	TPS76350DBVT	TPS79133DBVT
TLV70235DBVR	TPS3808G09DBVTG4	TPS76350DBVTG4	TPS79133DBVTG4
TLV70235DBVT	TPS3808G18DBVR	TPS76433DBVR	TPS79147DBVR
TLV70237DBVR	TPS3808G18DBVRG4	TPS76433DBVRG4	TPS79147DBVT
TLV70237DBVT	TPS3808G18DBVT	TPS76433DBVT	TPS79147DBVTG4
TLV70245DBVR	TPS3808G18DBVTG4	TPS76433DBVTG4	TPS79225DBVR
TLV70245DBVT	TPS3808G30DBVR	TPS76912DBVR	TPS79225DBVT
TLV702475DBVR	TPS3808G30DBVRG4	TPS76912DBVRG4	TPS79225DBVTG4
TLV702475DBVT	TPS3808G30DBVT	TPS76912DBVT	TPS79228DBVR
TLV70430DBVR	TPS3808G30DBVTG4	TPS76912DBVTG4	TPS79228DBVRG4
TLV70430DBVT	TPS73018DBVR	TPS76915DBVR	TPS79228DBVT
TLV70433DBVR	TPS73018DBVRG4	TPS76915DBVRG4	TPS79228DBVTG4
TLV70433DBVT	TPS73018DBVT	TPS76915DBVT	TPS79230DBVR
TLV70436DBVR	TPS73018DBVTG4	TPS76915DBVTG4	TPS79230DBVRG4
TLV70436DBVT	TPS73025DBVR	TPS76918DBVR	TPS79230DBVT
TLV70450DBVR	TPS73025DBVRG4	TPS76918DBVRG4	TPS79230DBVTG4
TLV70450DBVT	TPS73025DBVT	TPS76918DBVT	TPS79318DBVR
TLV71209DBVR	TPS73025DBVTG4	TPS76918DBVTG4	TPS79318DBVRG4
TLV71209DBVT	TPS730285DBVR	TPS76925DBVR	TPS79318DBVT
TLV71210DBVR	TPS730285DBVT	TPS76925DBVRG4	TPS79318DBVTG4
TLV71210DBVT	TPS730285DBVTG4	TPS76925DBVT	TPS79325DBVR
TLV73310PDBVR	TPS73028DBVR	TPS76925DBVTG4	TPS79325DBVRG4
TLV73311PDBVR	TPS73028DBVRG4	TPS76927DBVR	TPS793285DBVR
TLV73312PDBVR	TPS73028DBVT	TPS76927DBVT	TPS793285DBVRG4
TLV73315PDBVR	TPS73028DBVTG4	TPS76927DBVTG4	TPS793285DBVT
TLV73318PDBVR	TPS73030DBVR	TPS76928DBVR	TPS793285DBVTG4
TLV73325PDBVR	TPS73030DBVRG4	TPS76928DBVRG4	TPS79328DBVR
TLV733285PDBVR	TPS73030DBVT	TPS76928DBVT	TPS79328DBVRG4
TLV73328PDBVR	TPS73030DBVTG4	TPS76928DBVTG4	TPS79330DBVR
TLV73330PDBVR	TPS73033DBVR	TPS76930DBVR	TPS79330DBVRG4
TLV73333PDBVR	TPS73033DBVRG4	TPS76930DBVRG4	TPS79333DBVR
TPS2041CDBVR	TPS73033DBVT	TPS76930DBVT	TPS79333DBVRG4
TPS2041CDBVT	TPS73033DBVTG4	TPS76930DBVTG4	TPS793475DBVR
TPS2051BDBVR	TPS76133DBVR	TPS76950DBVR	TPS793475DBVRG4
TPS2051CDBVR	TPS76133DBVRG4	TPS76950DBVRG4	

Group 1: Qualification Report TIPI SOT: Phase-1 (5pin DBV) Qualification

Product Attributes

Attributes	Qual Device: TPS76933DBVR
Die Attributes	-
Die Revision	A
Wafer Fab Supplier	DL-LIN
Wafer Process	LBC3S
Package Attributes	-
Assembly Site	TIPI
Package Family	SOT
Package Designator	DBV
Package Size (mils)	62.99 X 114.17
Body Thickness (mils)	47.24
Pin Count	5
Lead Frame Type	CU
Lead Finish	NIPDAU
Lead Pitch(mils)	37.4
Mount Compound	4207173
Mold Compound	4222226
Bond Wire Composition	Cu
Bond Wire Diameter(mils)	1.0
Flammability Rating	UL 94 V-0

- QBS: Qual By Similarity

- Qual Device TPS76933DBVR is qualified at LEVEL1-260CG

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS76933DBVR
AC	Autoclave 121C	96 Hours	3/231/0
CDM	ESD - CDM	1500 V	3/9/0
DS	Die Shear	-	3/30/0
ED	Electrical Characterization, side by side	Per Datasheet Parameters	Pass
FLAM	Flammability (UL 94V-0)	--	3/15/0
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0
HBM	ESD - HBM	4000 V	3/9/0
HTOL	Life Test, 150C	300 Hours	3/230/0
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0
LI	Lead Fatigue	Leads	3/66/0
LI	Lead Pull to Destruction	Leads	3/66/0
MISC	Salt Atmosphere	24 Hours	3/66/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	3/36/0
PD	Physical Dimensions	(per mechanical drawing)	3/15/0
PKG	Lead Finish Adhesion	Leads	3/45/0
SD	Solderability	8 Hours Steam Age	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0
VM	Visual / Mechanical	(per mfg. Site specification)	3/984/0
VM	Visual Quality Reliability Inspection	Post Autoclave	3/6/0
VM	Visual Quality Reliability Inspection	Post Biased HAST	3/6/0

Type	Test Name / Condition	Duration	Qual Device: TPS76933DBVR
VM	Visual Quality Reliability Inspection	Post Temperature Cycle	3/6/0
WBP	Bond Pull	Wires	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0
XRAY	X-ray	(top side only)	3/15/0

- 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 TIPI SOT: Phase-1 (5pin DBV) Cu wire, 300mm Wafer

Product Attributes

Attributes	Qual Device: TLV70233DBVR
Assembly Site	PHI (TIPI)
Package Family	SOT-23
Flammability Rating	UL 94 V-0
Wafer Fab Supplier	RFAB
Wafer Fab Process	LBC7

- QBS: Qual By Similarity

- Qual Device TLV70233DBVR is qualified at LEVEL1-260C

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TLV70233DBVR
MSL	Moisture Sensitivity, Jedec	Level 1-260C	3/36/0
AC	Autoclave 121C	96 Hours	3/231/0
DS	Die Shear	-	3/30/0
ED	Electrical Characterization, side by side	Per Datasheet Parameters	Pass
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass
PD	Physical Dimensions	(per mechanical drawing)	3/15/0
SD	Solderability	Steam 8 hrs	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0
VM	Visual / Mechanical	(per mfg. Site specification)	3/984/0
VM	Visual Quality Reliability Inspection	Post Autoclave	3/6/0
VM	Visual Quality Reliability Inspection	Post Temp Cycle	3/6/0
WBP	Bond Pull	Wires	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0
XRAY	X-ray	(top side only)	3/15/0

- 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

TIPI SOT: Phase-1 (6 pin DBV) Cu wire, 200mm Wafer

Product Attributes

Attributes	Qual Device: TPS3808G01DBVR
Assembly Site	TIPI
Package Family	SOT
Flammability Rating	UL 94 V-0
Wafer Fab Supplier	FFAB
Wafer Fab Process	3370A12X3

- QBS: Qual By Similarity
- Qual Device TPS3808G01DBVR is qualified at LEVEL1-260CG

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS3808G01DBVR
MSL	Moisture Sensitivity, Jedec	Level 1-260C	3/36/0
AC	Autoclave 121C	96 Hours	3/231/0
DS	Die Shear	-	3/30/0
ED	Electrical Characterization, side by side	Per Datasheet Parameters	Pass
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass
PD	Physical Dimensions	(per mechanical drawing)	3/15/0
SD	Solderability	Steam 8 hrs	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0
VM	Visual / Mechanical	(per mfg. Site specification)	3/984/0
VM	Visual Quality Reliability Inspection	Post Autoclave	3/6/0
VM	Visual Quality Reliability Inspection	Post Temp Cycle	3/6/0
WBP	Bond Pull	Wires	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0
XRAY	X-ray	(top side only)	3/15/0

- 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

TIPI SOT: Phase-1 (5pin DBV) METDCu Cu wire

Product Attributes

Attributes	Qual Device: TPS2051CDBVR
Assembly Site	PHI (TIPI)
Package Family	SOT-23
Flammability Rating	UL 94 V-0
Wafer Fab Supplier	RFAB
Wafer Fab Process	LBC7 X DCU

- QBS: Qual By Similarity
- Qual Device TPS2051CDBVR is qualified at LEVEL2-260C

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS2051CDBVR
MSL	Moisture Sensitivity, Jedec	Level 1-260C	3/36/0
MSL	Moisture Sensitivity, Jedec	Level 2-260C	3/36/0
AC	Autoclave 121C	96 Hours	3/231/0
DS	Die Shear	-	3/30/0
ED	Electrical Characterization, side by side	Per Datasheet Parameters	Pass
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass
PD	Physical Dimensions	(per mechanical drawing)	3/15/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0
VM	Visual / Mechanical	(per mfg. Site specification)	3/984/0
VM	Visual Quality Reliability Inspection	Post Autoclave	3/6/0
VM	Visual Quality Reliability Inspection	Post Temp Cycle	3/6/0
WBP	Bond Pull	Wires	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0
XRAY	X-ray	(top side only)	3/15/0

- 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

TIPI SOT: Phase-1 (6-pin DBV) -- 2.0 mil Cu Wire, BOAC

Product Attributes

Attributes	Qual Device: TPS2552DBVR
Assembly Site	TIPI
Package Family	SOT
Flammability Rating	UL 94 V-0
Wafer Fab Supplier	MH8
Wafer Process	LBC7

- QBS: Qual By Similarity
- Qual Device TPS2552DBVR is qualified at LEVEL1-260CG

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS2552DBVR
AC	Autoclave 121C	96 Hours	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	Pass
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0
PD	Physical Dimensions	--	3/15/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0
WBP	Bond Pull	Wires	3/228/0
WBS	Ball Bond Shear	Wires	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

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