

PCN Number:	20210521000.2			PCN Date:	May 21 2021															
Title:	Qualification of additional TIPI as additional Assembly/Test site for select devices																			
Customer Contact:	PCN Manager	Dept:	Quality Services																	
Proposed 1st Ship Date:	Nov 17 2021	Estimated Sample Availability:	Date provided at sample request																	
Change Type:																				
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site															
<input checked="" type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material															
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process															
<input type="checkbox"/>	Mechanical Specification	<input checked="" type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Site															
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Materials															
		<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process															
PCN Details																				
Description of Change:																				
<p>Texas Instruments Incorporated is announcing the qualification of TIPI as an additional Assembly/test site for devices listed below in the product affected section. Construction differences and current assembly site as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Lingsen</th> <th style="text-align: center;">TIPI</th> </tr> </thead> <tbody> <tr> <td>Mount Compound</td> <td style="text-align: center;">SID#003C10332</td> <td style="text-align: center;">8095733</td> </tr> <tr> <td>Mold Compound</td> <td style="text-align: center;">SID#0011G60007</td> <td style="text-align: center;">4222198</td> </tr> <tr> <td>Lead Finish</td> <td style="text-align: center;">NiPdAu, non RLF</td> <td style="text-align: center;">NiPdAu, RLF</td> </tr> <tr> <td>Bond wire diameter</td> <td style="text-align: center;">Au, 1.0 mils</td> <td style="text-align: center;">Cu, 1.0 mils</td> </tr> </tbody> </table> <p>Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.</p>							Lingsen	TIPI	Mount Compound	SID#003C10332	8095733	Mold Compound	SID#0011G60007	4222198	Lead Finish	NiPdAu, non RLF	NiPdAu, RLF	Bond wire diameter	Au, 1.0 mils	Cu, 1.0 mils
	Lingsen	TIPI																		
Mount Compound	SID#003C10332	8095733																		
Mold Compound	SID#0011G60007	4222198																		
Lead Finish	NiPdAu, non RLF	NiPdAu, RLF																		
Bond wire diameter	Au, 1.0 mils	Cu, 1.0 mils																		
Reason for Change:																				
Supply continuity																				
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																				
None																				
Anticipated impact on Material Declaration																				
<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" type="checkbox"/>	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 at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp																	
Changes to product identification resulting from this PCN:																				
Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City																	
Lingsen	LIN	TWN	Taichung																	
TIPI	PHI	PHL	Baguio City																	

Sample product shipping label (not actual product label)





MADE IN: Malaysia
2DC: 2Q:

MSL 2 /260C/1 YEAR	SEAL DT
MSL 1 /235C/UNLIM	03/29/04

OPT:
ITEM: 39
LBL: 5A (L)T0:1750

(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

Product Affected:

TPS3813I50QDBVRQ1	TPS3813K33QDBVRAL	TPS3813K33QDBVRQ1
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TI Information
Selective Disclosure

Automotive New Product Qualification Summary
(As per AEC-Q006 and JEDEC Guidelines)

TPS3813K33QDBVRQ1 Grade 1 AECQ006 Qualification
Approve Date 19-May-2021

Product Attributes

Attributes	Qual Device: TPS3813K33QDBVRQ1	QBS Package Reference: TLV2401QDBVRQ1
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C
Product Function	Power Management	Signal Chain
Wafer Fab Supplier	DFAB	DFAB
Die Revision	A	A
Assembly Site	TIPI	TIPI
Package Type	SOT-23	SOT-23
Package Designator	DBV	DBV
Ball/Lead Count	6	5

- QBS: Qual By Similarity
- Qual Devices TPS3813K33QDBVRQ1 is qualified at LEVEL1-260C
- TPS3813I50QDBVRQ1 is concurrently qualified.

Qualification Results

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

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: TPS3813K33QDBVRQ1	QBS Package Reference: TLV2401QDBVRQ1
Test Group A – Accelerated Environment Stress Tests								
PC	A1		3	22	SAM Analysis, Pre-Stress	Completed	1/22/0	3/66/0
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 1-260C	1/199/0	3/597/0
PC	A1		3	22	SAM Analysis, Post Stress	Completed	1/22/0	3/66/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	1/77/0	3/231/0
HAST	A2		3	1	Cross Section, Post HAST 96 Hours	Completed	1/1/0	1/1/0
HAST	A2		3	22	SAM Analysis, Post HAST, 96 Hours	-	1/22/0	3/66/0
HAST	A2		3	30	Wire Bond Shear, Post HAST, 96 Hours	Wires	1/30/0	3/90/0
HAST	A2		3	30	Bond Pull over Stitch, post HAST, 96 Hours	Wires	1/30/0	3/90/0
HAST	A2		3	30	Bond Pull over Ball, Post HAST, 96 Hours	Wires	1/30/0	3/90/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	192 Hours	1/70/0	3/210/0
HAST	A2		3	1	Cross Section, Post HAST, 192 Hours	Completed	1/1/0	3/3/0
HAST	A2		3	22	SAM Analysis, Post HAST, 192 Hours	Completed	1/22/0	3/66/0
HAST	A2		3	30	Wire Bond Shear, Post HAST, 192 Hours	Wires	1/30/0	3/90/0
HAST	A2		3	30	Bond Pull over Stitch, Post HAST, 192 Hours	Wires	1/30/0	3/90/0
HAST	A2		3	30	Bond Pull over Ball, Post HAST, 192 Hours	Wires	1/30/0	3/90/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, - 65/150C	500 Cycles	1/77/0	3/231/0

TC	A4	-	3	1	Cross Section, Post T/C 500 Cycles	Completed	1/1/0	3/3/0
TC	A4	-	3	22	SAM Analysis, Post T/C, 500 Cycles	Completed	1/22/0	3/66/0
TC	A4	-	3	30	Wire Bond Shear, Post T/C 500 Cycles	Wires	1/30/0	3/90/0
TC	A4	-	3	30	Bond Pull over Stitch Post T/C 500 Cycles	Wires	1/30/0	3/90/0
TC	A4	-	3	30	Bond Pull over Ball Post T/C 500 Cycles	Wires	1/30/0	3/90/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	1000 Cycles	1/70/0	3/210/0
TC	A4	-	3	1	Cross Section, Post T/C 1000 Cycles	Completed	1/1/0	3/3/0
TC	A4	-	3	22	SAM Analysis, Post T/C, 1000 Cycles	Completed	1/22/0	3/66/0
TC	A4	-	3	30	Wire Bond Shear, Post T/C 1000 Cycles	Wires	1/30/0	3/90/0
TC	A4	-	3	30	Bond Pull over Stitch, Post T/C, 1000 Cycles	Wires	1/30/0	3/90/0
TC	A4	-	3	30	Bond Pull over Ball, Post T/C, 1000 Cycles	Wires	1/30/0	3/90/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000 Cycles	N/A	N/A
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	2000 Cycles	N/A	N/A
HTSL	A6	JEDEC JESD22-A103	3	45	High Temp. Storage Bake, 175C	1000 Hours	1/45/0	3/135/0
HTSL	A6	-	3	1	Cross Section, Post HTSL 500 Hours	Completed	1/1/0	3/3/0
HTSL	A6	JEDEC JESD22-A103	3	44	High Temp Storage Bake 175C	2000 Hours	1/44/0	3/132/0
HTSL	A6	-	3	1	Cross Section, Post HTSL 1000 Hours	Completed	1/1/0	3/3/0

Test Group C – Package Assembly Integrity Tests

WBS	C1	AEC Q100-001	3	30	Bond Shear (Cpk>1.67)	Wires	1/30/0	3/90/0
WBP	C2	MIL-STD883 Method 2011	3	30	Bond Pull (Cpk>1.67)	Wires	1/30/0	3/90/0

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST & TC samples as applicable.

Junction Operating Temperature by Automotive Grade Level:

Grade 0 (or E): -40°C to +150°C

Grade 1 (or Q): -40°C to +125°C

Grade 2 (or T): -40°C to +105°C

Grade 3 (or L): -40°C to +85°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):

Room/Hot/Cold: HTOL, ED

Room/Hot: THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU

Room: AC/uHAST

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

	TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, - 65/150C	500 Cycles	1/77/0	3/231/0
	TC	A4	-	3	1	Cross Section, Post T/C 500 Cycles	Completed	1/1/0	3/3/0
	TC	A4	-	3	22	SAM Analysis, Post T/C, 500 Cycles	Completed	1/22/0	3/66/0
	TC	A4	-	3	30	Wire Bond Shear, Post T/C 500 Cycles	Wires	1/30/0	3/90/0
	TC	A4	-	3	30	Bond Pull over Stitch Post T/C 500 Cycles	Wires	1/30/0	3/90/0
	TC	A4	-	3	30	Bond Pull over Ball Post T/C 500 Cycles	Wires	1/30/0	3/90/0
	TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, - 65/150C	1000 Cycles	1/70/0	3/210/0
	TC	A4	-	3	1	Cross Section, Post T/C 1000 Cycles	Completed	1/1/0	3/3/0
	TC	A4	-	3	22	SAM Analysis, Post T/C, 1000 Cycles	Completed	1/22/0	3/66/0
	TC	A4	-	3	30	Wire Bond Shear, Post T/C 1000 Cycles	Wires	1/30/0	3/90/0
	TC	A4	-	3	30	Bond Pull over Stitch, Post T/C, 1000 Cycles	Wires	1/30/0	3/90/0
	TC	A4	-	3	30	Bond Pull over Ball, Post T/C, 1000 Cycles	Wires	1/30/0	3/90/0
	PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, - 40/125C	1000 Cycles	N/A	N/A
	PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, - 40/125C	2000 Cycles	N/A	N/A
	HTSL	A6	JEDEC JESD22-A103	3	45	High Temp. Storage Bake, 175C	1000 Hours	1/45/0	3/135/0
	HTSL	A6	-	3	1	Cross Section, Post HTSL 500 Hours	Completed	1/1/0	3/3/0
	HTSL	A6	JEDEC JESD22-A103	3	44	High Temp Storage Bake 175C	2000 Hours	1/44/0	3/132/0
	HTSL	A6	-	3	1	Cross Section, Post HTSL 1000 Hours	Completed	1/1/0	3/3/0



TI Information
Selective Disclosure

Automotive New Product Qualification Summary (As per AEC-Q006 and JEDEC Guidelines)

TPS3813K33QDBVRAL Grade 1 AECQ006 Qualification Approve Date 19-May-2021

Product Attributes

Attributes	QBS Product Reference: <u>TPS3813K33QDBVRAL</u>	QBS Product Reference: <u>TPS3813K33QDBVRQ1</u>	QBS Package Reference: <u>TLV2401QDBVRQ1</u>
Automotive Grade Level	Grade 1	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C	-40 to +125 C
Product Function	Power Management	Power Management	Signal Chain
Wafer Fab Supplier	DFAB	DFAB	DFAB
Die Revision	A	A	A
Assembly Site	TIPI	TIPI	TIPI
Package Type	SOT-23	SOT-23	SOT-23
Package Designator	DBV	DBV	DBV
Ball/Lead Count	6	6	5

- QBS: Qual By Similarity
- Qual Devices TPS3813K33QDBVRAL is qualified at LEVEL1-260C

Qualification Results

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

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	QBS Product Reference: TPS3813K33Q DBVRAL	QBS Product Reference: TPS3813K33QD BVRQ1	QBS Package Reference: TLV2401QDBVR Q1
Test Group A – Accelerated Environment Stress Tests									
PC	A1		3	22	SAM Analysis, Pre-Stress	Completed	-	1/22/0	3/66/0
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 1-260C	-	1/199/0	3/597/0
PC	A1		3	22	SAM Analysis, Post Stress	Completed	-	1/22/0	3/66/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	-	1/77/0	3/231/0
HAST	A2		3	1	Cross Section, Post HAST 96 Hours	Completed	-	1/1/0	1/1/0
HAST	A2		3	22	SAM Analysis, Post HAST, 96 Hours	-	-	1/22/0	3/66/0
HAST	A2		3	30	Wire Bond Shear, Post HAST, 96 Hours	Wires	-	1/30/0	3/90/0
HAST	A2		3	30	Bond Pull over Stitch, post HAST, 96 Hours	Wires	-	1/30/0	3/90/0
HAST	A2		3	30	Bond Pull over Ball, Post HAST, 96 Hours	Wires	-	1/30/0	3/90/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	192 Hours	-	1/70/0	3/210/0
HAST	A2		3	1	Cross Section, Post HAST, 192 Hours	Completed	-	1/1/0	3/3/0
HAST	A2		3	22	SAM Analysis, Post HAST, 192 Hours	Completed	-	1/22/0	3/66/0
HAST	A2		3	30	Wire Bond Shear, Post HAST, 192 Hours	Wires	-	1/30/0	3/90/0
HAST	A2		3	30	Bond Pull over Stitch, Post HAST, 192 Hours	Wires	-	1/30/0	3/90/0
HAST	A2		3	30	Bond Pull over Ball, Post HAST, 192 Hours	Wires	-	1/30/0	3/90/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	3/231/0

	TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	3/231/0
	TC	A4	-	3	1	Cross Section, Post T/C 500 Cycles	Completed	-	1/1/0	3/3/0
	TC	A4	-	3	22	SAM Analysis, Post T/C, 500 Cycles	Completed	-	1/22/0	3/66/0
	TC	A4	-	3	30	Wire Bond Shear, Post T/C 500 Cycles	Wires	-	1/30/0	3/90/0
	TC	A4	-	3	30	Bond Pull over Stitch Post T/C 500 Cycles	Wires	-	1/30/0	3/90/0
	TC	A4	-	3	30	Bond Pull over Ball Post T/C 500 Cycles	Wires	-	1/30/0	3/90/0
	TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	1000 Cycles	-	1/70/0	3/210/0
	TC	A4	-	3	1	Cross Section, Post T/C 1000 Cycles	Completed	-	1/1/0	3/3/0
	TC	A4	-	3	22	SAM Analysis, Post T/C, 1000 Cycles	Completed	-	1/22/0	3/66/0
	TC	A4	-	3	30	Wire Bond Shear, Post T/C 1000 Cycles	Wires	-	1/30/0	3/90/0
	TC	A4	-	3	30	Bond Pull over Stitch, Post T/C, 1000 Cycles	Wires	-	1/30/0	3/90/0
	TC	A4	-	3	30	Bond Pull over Ball, Post T/C, 1000 Cycles	Wires	-	1/30/0	3/90/0
	PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000 Cycles	-	N/A	N/A
	PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	2000 Cycles	-	N/A	N/A
	HTSL	A6	JEDEC JESD22-A103	3	45	High Temp. Storage Bake, 175C	1000 Hours	-	1/45/0	3/135/0
	HTSL	A6	-	3	1	Cross Section, Post HTSL 500 Hours	Completed	-	1/1/0	3/3/0
	HTSL	A6	JEDEC JESD22-A103	3	44	High Temp Storage Bake 175C	2000 Hours	-	1/44/0	3/132/0
	HTSL	A6	-	3	1	Cross Section, Post HTSL 1000 Hours	Completed	-	1/1/0	3/3/0
Test Group C – Package Assembly Integrity Tests										
	WBS	C1	AEC Q100- 001	3	30	Bond Shear (Cpk>1.67)	Wires	-	1/30/0	3/90/0
	WBP	C2	MIL-STD883 Method 2011	3	30	Bond Pull (Cpk>1.67)	Wires	-	1/30/0	3/90/0

A1 (PC): Preconditioning:
Performed for THB, Biased HAST, AC, uHAST & TC samples as applicable.

Junction Operating Temperature by Automotive Grade Level:

Grade 0 (or E): -40°C to +150°C
Grade 1 (or Q): -40°C to +125°C
Grade 2 (or T): -40°C to +105°C
Grade 3 (or I): -40°C to +85°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):

Room/Hot/Cold: HTOL, ED
Room/Hot: THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
Room: AC/uHAST

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

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