

PCN Number:	20151203000	PCN Date:	12/14/2015
Title:	Qualification of ASESH and UTAC as Additional Assembly and Test Site for Select Package Devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	03/14/2016	Estimated Sample Availability:	Date Provided at Sample request
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:			
Texas Instruments Incorporated is announcing the qualification of ASESH and UTAC 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 Device: (Adding ASESH)			
Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
UTAC	NS2	TH	Bangpakong
ASESH	ASH	CN	Shanghai
Material Differences:			
	UTAC	ASESH	
Mount Compound	PZ0013	EY1000063	
Mold Compound	CZ0094	EN2000515	
Wire Type	Au	Cu	
Lead Finish	NiPdAu	NiPdAu-Ag	
Group 2 Device: (Adding UTAC)			
Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
ASESH	ASH	CN	Shanghai
UTAC	NS2	TH	Bangpakong
Material Differences:			
	ASESH	UTAC	
Mount Compound	EY1000063	PZ0031	
Mold Compound	EN2000515	CZ0094	
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			
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 from the TI ECO website .
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Changes to product identification resulting from this PCN:

Assembly Site		
ASESH	Assembly Site Origin (22L)	ASO: ASH
UTAC	Assembly Site Origin (22L)	ASO: NS2

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 2D
 MSL 2 /260C/1 YEAR SEAL DT
 MSL 1 /235C/UNLIM 03/29/04
 OPT: 39
 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

ASSEMBLY SITE CODES: ASESH = A, UTAC = B

Product Affected Group 1:

TPS5401DGQ	TPS5401DGQT	TPS54260DGQR
TPS5401DGQR	TPS54260DGQ	

Product Affected Group 2:

TPS22958DGKR	TPS22958DGKT
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Group 1 Qualification Report

Move TPS54260DGQ and TPS5401DGQ at ASESH as part of
NS2 to ASESH MSOP TKY Offload

Product Attributes

Attributes	Qual Device: TPS5401DGQ	Qual Device: TPS54260DGQ	QBS Product Reference: TPS5401DGQ	QBS Product Reference: TPS54160DGQ	QBS Product Reference: TPS54260DGQ
Assembly Site	ASE SHANGHAI	ASE SHANGHAI	UTAC	UTAC	UTAC
Package Family	VSSOP	VSSOP	VSSOP	VSSOP	VSSOP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	DM0S5	DM0S5	DM0S5	DMOS5	DMOS5
Wafer Process	LBC5	LBC5	LBC5	LBC5	LBC5

Attributes	QBS Process Reference: TAS5186DDV	QBS Process Reference: TPA3300D2VFP	QBS Package Reference: TPS54240DGQ	QBS Package Reference: TPS62040DGQ
Assembly Site	TAI	TAI	ASE SHANGHAI	ASE SHANGHAI
Package Family	TSSOP	LQFP	VSSOP	VSSOP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	DMOS5	DMOS5	DMOS5	FFAB
Wafer Process	LBC5	LBC5	LBC5	3370A12X3

- QBS: Qual By Similarity

- Qual Devices is qualified at LEVEL1-260C: TPS54260DGQR, TPS5401DGQR

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS5401DGQ	Qual Device: TPS54260DGQ	QBS Product Reference: TPS5401DGQ	QBS Product Reference: TPS54160DGQ	QBS Product Reference: TPS54260DGQ
AC	Autoclave 121C	96 Hours	-	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	-	-	Pass	Pass	Pass
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-
HBM	ESD - HBM	1000 V	-	-	-	1/3/0	-
CDM	ESD - CDM	1000 V	-	-	-	1/3/0	1/3/0
HTOL	Life Test, 150C	300 Hours	-	-	-	1/116/0	1/77/0
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	-
HTOL	Life Test, 140C	1000 Hours	-	-	-	-	-
HTOL	Life Test, 155C	240 Hours	-	-	-	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	-	-	-	-
LU	Latch-up	(per JESD78)	-	-	-	1/6/0	1/6/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	1/77/0	-
TS	Thermal Shock, -65/150C	500 Cycles	-	-	-	-	-
WBP	Bond Pull	Wires	-	-	-	-	-
WBS	Ball Bond Shear	Wires	-	-	-	-	-
YLD	FTY and Bin Analysis	-	Pass	Pass	Pass	Pass	Pass

Type	Test Name / Condition	Duration	QBS Process Reference: TA S5186DDV	QBS Process Reference: TPA3300D2VFP	QBS Package Reference: TPS54240DGQ	QBS Package Reference: TPS62040DGQ
AC	Autoclave 121C	96 Hours	3/230/0	-	3/231/0	-
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	Pass	Pass
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-	-	3/231/0
HBM	ESD - HBM	1000 V	-	3/9/0	-	-
CDM	ESD - CDM	1000 V	-	-	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-
HTOL	Life Test, 140C	1000 Hours	-	3/359/0	-	-
HTOL	Life Test, 155C	240 Hours	3/339/0	-	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	3/231/0	-	3/231/0	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	-	-	3/230/0
LU	Latch-up	(per JESD78)	-	3/18/0	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/228/0	-	3/231/0	6/427/0
TS	Thermal Shock, -65/150C	500 Cycles	3/230/0	-	-	-
WBP	Bond Pull	Wires	-	-	3/228/0	-
WBS	Ball Bond Shear	Wires	-	-	3/228/0	-
YLD	FTY and Bin Analysis	-	Pass	-	-	-

- 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

TPS22958DGK (Secondary A-T Site for package / Single Channel with QOD, UTAC, Dual Cu Wire Diameter)

Product Attributes

Attributes	Qual Device: TPS22958DGK	QBS Product Reference: TPS22958DGK	QBS Product Reference: TPS22958DGN	QBS Product Reference: TPS22968DPU	QBS Product Reference: TPS22968DPUR
Assembly Site	UTAC	ASESH	ASESH	CLARK-AT	CLARK AT
Package Family	VSSOP/MSOP	VSSOP/MSOP	VSSOP/MSOP	QFN	QFN
Flammability Rating	-	-	-	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	RFAB/CLARK-BUMP	RFAB/CLARK-BUMP	RFAB/CLARK-BUMP	RFAB	RFAB
Wafer Process	LBC7	LBC7	LBC7	LBC7	LBC7

Attributes	QBS Process Reference: TPS2543QRTE	QBS Package Reference: BQ24090DGQ	QBS Package Reference: TPS2062DGN	QBS Package Reference: TPS54260DGQ
Assembly Site	CLARK-AT	NS2	UTAC / NSE	NS2
Package Family	TQFN	VSSOP	MSOP-PwrPAD (HTSSOP)	VSSOP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	RFAB	MIHO	DFAB	DMOS5
Wafer Process	LBC7	LBC7	LBC4X	LBC5

- QBS: Qual By Similarity
- Qual Device TPS22958DGK 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: TPS22958DGK	QBS Product Reference: TPS22958DGK	QBS Product Reference: TPS22958DGN	QBS Product Reference: TPS22968DPU
AC	Autoclave 121C	96 Hours	3/231/0	1/77/0	3/231/0	1/93/0
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	-
ELFR	Early Life Failure Rate, 150C	24 Hours	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	1/77/0	-	-	-
HBM	ESD - HBM	4000 V	-	-	1/3/0	-
CDM	ESD - CDM	1500 V	-	-	1/3/0	-
HTOL	Life Test, 150C	300 Hours	1/77/0	-	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	3/231/0	-	-	-
HTSL	High Temp. Storage Bake, 175C	500 Hours	-	-	-	-
LU	Latch-up	(per JESD78)	-	-	1/6/0	-
PD	Physical Dimensions	--	-	-	-	-
SD	Surface Mount Solderability	Pb Free	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	1/77/0	3/231/0	1/95/0
WBP	Bond Pull	Wires	-	-	-	-
WBP	Bond Strength	Wires	3/228/0	3/228/0	3/228/0	1/76/0
WBS	Ball Bond Shear	Wires	-	-	-	-

Type	Test Name / Condition	Duration	QBS Product Reference: TPS22968DPUR	QBS Process Reference: TPS2543QRTE	QBS Package Reference: BQ24090DGQ	QBS Package Reference: TPS2062DGN	QBS Package Reference: TPS54260DGQ
AC	Autoclave 121C	96 Hours	-	3/231/0	3/231/0	3/231/0	3/231/0
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	3/90/0	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	-	Pass	Pass	Pass
ELFR	Early Life Failure Rate, 150C	24 Hours	-	3/2640/0	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	-	3/78/0	-
HBM	ESD - HBM	4000 V	1/3/0	1/3/0	-	-	-
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	-	-	-
HTOL	Life Test, 150C	300 Hours	-	3/231/0	-	3/119/0	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	3/231/0	-
HTSL	High Temp. Storage Bake, 175C	500 Hours	-	3/149/0	3/231/0	-	3/231/0
LU	Latch-up	(per JESD78)	1/6/0	1/6/0	-	-	-
PD	Physical Dimensions	--	-	3/90/0	-	-	-
SD	Surface Mount Solderability	Pb Free	-	2/30/0	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	6/462/0	6/461/0	6/462/0
WBP	Bond Pull	Wires	-	-	3/228/0	-	3/228/0
WBP	Bond Strength	Wires	-	-	-	-	-
WBS	Ball Bond Shear	Wires	-	-	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

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

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USA	PCNAmericasContact@list.ti.com
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