PCN Number:	20170223004	PCN Date:	March 1, 2017
Title:	Qualification of ASEN and JCET as an additional Assembly & Test site for select devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	June 1, 2017	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:

Qualification of ASEN and JCET as an additional Assembly & 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
NSE	NSE	THA	Bangkok
ASEN	**ASN**	**CHN**	**Suzhou**

Material Differences:

	NSE	ASEN
Mount compound	PZ0039	1400238112
Mold compound	CZ0140	1801512111
Wire Type/diam	Au, 0.6mil	Au, 0.8mil

Group 2 Devices:

Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
ASEN	ASN	CHN	Suzhou
JCET	**JCE**	**CHN**	**Jiangyin**

Material Differences:

	ASEN	JCET
Mount compound	1400329111	120402002600
Mold compound	1800819111	120903003009

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			
☐	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 at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp

Changes to product identification resulting from this PCN:

Assembly Site		
NSE	Assembly Site Origin (22L)	ASO: NSE
ASEN	Assembly Site Origin (22L)	ASO: ASN
JCET	Assembly Site Origin (22L)	ASO: JCE

Sample product shipping label (not actual product label)

ASSEMBLY SITE CODES: NSE = J, ASN = W, JCE = F

Product Affected Group 1 Devices:

TPD4E004DRYR	TPD4S009DRYR

Product Affected Group 2 Devices:

TPD1E1B04DPYR	TPD1E1B04DPYT

Group 1: Qualification Report

Qualifying TPD4E004DRYR and TPD4S009DRYR at ASEN

Approve Date 17-Feb-2017

Product Attributes

Attributes	Qual Device: TPD4E004DRYR	Qual Device: TPD4S009DRYR	QBS Product Reference: TPD4S009DRY	QBS Process Reference: SN74AUC1G08DCK
Assembly Site	ASEN	ASEN	NSE	HNT
Package Family	SON	SON	SON	SOT
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V 0
Wafer Fab Supplier	SFAB	FFAB	FFAB	FFAB
Wafer Process	JI2	ASL3C-RW / 50B10.13_BOPO	50b10.13_BOPO	25B10/D9672

Attributes	QBS Process Reference: SN74AVC8T245PW	QBS Process Reference: TPD12S520DBT	QBS Package Reference: TPD2E001DRYR	QBS Package Reference: TPD4S012DRYR
Assembly Site	MLA	MLA	ASEN	ASEN
Package Family	TSSOP	TSSOP	SON	SON
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	FFAB	FFAB	FFAB	FFAB
Wafer Process	33B10/D9722	50B10/D9793	A3C10TPI /P9785	A3C10TPI/P9787

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260C: TPD4S009DRYR, TPD4E004DRYR

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPD4E004DRYR	Qual Device: TPD4S009DRYR	QBS Product Reference: TPD4S009DRY	QBS Process Reference: SN74AUC1G08DCK
AC	Autoclave 121C	96 Hours	-	1/77/0	-	1/77/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	Pass	Pass
FLAM	Flammability (IEC 695-2-2)	--	-	-	-	-
FLAM	Flammability (UL 94V-0)	--	-	-	-	-
FLAM	Flammability (UL-1694)	--	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	1/77/0
ESD	ESD - IEC Air Gap	12000 V	1/3/0	-	-	-
ESD	ESD - IEC Contact	8000 V	1/3/0	-	-	-
HBM	ESD - HBM -HIGH	15000 V	1/3/0	-	-	-
CDM	ESD - CDM	1500 V	-	-	1/3/0	1/3/0
HTOL	Life Test, 150C	300 Hours	-	-	1/77/0	1/77/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-
LU	Latch-up	(per JESD78)	-	-	1/6/0	1/6/0
PD	Physical Dimensions	--	-	-	-	-
SD	Solderability	Pb-Free	-	-	-	-
SD	Solderability	Pb	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	1/77/0	1/77/0
WBP	Bond Pull	Wires	-	1/30/0	-	-
WBS	Ball Bond Shear	Wires	-	1/30/0	-	-

Type	Test Name / Condition	Duration	QBS Process Reference: SN74AVC8T245PW	QBS Process Reference: TPD12S520DBT	QBS Package Reference: TPD2E001DRYR	QBS Package Reference: TPD4S012DRYR
AC	Autoclave 121C	96 Hours	1/77/0	1/77/0	3/231/0	3/231/0
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	-
FLAM	Flammability (UL-1694)	--	-	-	3/15/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	1/77/0	1/77/0	1/77/0	-

ESD	ESD - IEC Air Gap	12000 V	-	-	-	-
ESD	ESD - IEC Contact	8000 V	-	-	-	-
HBM	ESD - HBM -HIGH	15000 V	-	-	-	-
CDM	ESD - CDM	1500 V	-	1/3/0	-	-
HTOL	Life Test, 150C	300 Hours	1/77/0	1/77/0	1/77/0	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	3/231/0	3/231/0
LU	Latch-up	(per JESD78)	1/6/0	1/6/0	-	-
PD	Physical Dimensions	--	-	-	3/15/0	-
SD	Solderability	Pb-Free	-	-	3/66/0	-
SD	Solderability	Pb	-	-	3/66/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	1/76/0	1/77/0	3/231/0	3/231/0
WBP	Bond Pull	Wires	-	-	3/228/0	3/228/0
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

Group 2: Qualification Report

Second Source A-T site: TPD1E1B04DPYR (CFAB ULC2.0 / JCET 2 pin DPY)

Approve Date 08-Dec-2016

Product Attributes

Attributes	Qual Device: TPD1E1B04DPYR	QBS Product Reference: TPD1E1B04DPYR	QBS Process Reference: TPD4E02B05A1	QBS Package Reference: TPD1E10B09DPYR
Assembly Site	JCET	ASEN	JCET	JCET
Package Family	-	-	SON 2.5 X 1 MM	-
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	CFAB	CFAB	CFAB	HIJI
Wafer Process	ULC2.0	ULC2.0	ULC 2.0	VD

- QBS: Qual By Similarity
- Qual Device TPD1E1B04DPYR is qualified at LEVEL1-260C
- Device TPD1E1B04DPYR contains multiple dies.

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPD1E1B04DPYR	QBS Product Reference: TPD1E1B04DPYR	QBS Process Reference: TPD4E02B05A1	QBS Package Reference: TPD1E10B09DPYR
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0	3/231/0	-
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	-	-
FLAM	Flammability (IEC 695-2-2)	--	-	3/15/0	-	3/15/0
FLAM	Flammability (UL 94V-0)	--	-	3/15/0	-	3/15/0
FLAM	Flammability (UL-1694)	--	-	3/15/0	-	3/15/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	3/231/0	4/308/0

HBM	ESD - HBM	4000 V	-	1/3/0	3/9/0	-
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	3/9/0	-
HTOL	Life Test, 150C	300 Hours	-	-	3/231/0	4/308/0
HTRB	Life Test, 150C (HTRB)	300 Hours	-	3/231/0	-	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	3/300/0	-	3/231/0	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	3/231/0	-	3/231/0
PD	Physical Dimensions	--	3/15/0	3/15/0	-	3/15/0
SD	Surface Mount Solderability	Pb Free	3/66/0	3/66/0	-	-
SD	Solderability	Post 8 Hours Steam Age	-	-	-	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	3/231/0	3/231/0
TS	Thermal Shock, -65/150C	500 Cycles	-	-	-	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0
WBP	Bond Pull	Wires	3/9/0	3/228/0	-	-
WBP	Bond Strength	Wires	-	-	3/90/0	3/228/0
WBS	Ball Bond Shear	Wires	3/9/0	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.

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com