TEXAS INSTRUMENTS **12500 TI Boulevard, MS 8640, Dallas, Texas 75243**

PCN# 20160202001
Qualification of ASEN as Additional Assembly and Test Site for Select UQFN Package Devices
Change Notification / Sample Request

Date: 2/5/2016
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

We request you acknowledge receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If you require samples or additional data to support your evaluation, please request within 30 days.

The changes discussed within this PCN will not take effect any earlier than **90** days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change. This notification period is per TI's standard process.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services

20160202001
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
TS3USB221RSER	null
TPD6E001RSER	null
SN74AVC4T774RSVR	null
TS3USB30ERSWR	null
TCA6408ARSVR	null
TS3USB221ARSER	null
TXB0104RUTR	null
SN74AVC4T245RSVR	null
SN74AVC2T245RSWR	null
TS3USB221ERSER	null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20160202001	**PCN Date:**	02/05/2016
Title:	Qualification of ASEN as Additional Assembly and Test Site for Select UQFN Package Devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	05/05/2016	**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 ASEN 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
UTAC	NSE	TH	Bangkok
JCET	JCE	CN	Jiangyin
HANA	HNT	TH	Ayutthaya
ASEN	**ASN**	**CN**	**Suzhou**

Material Differences:

	UTAC	JCET	HANA	ASEN
Mount Compound	PZ0037	120402001600	400173	1400238112
Mold Compound	CZ0136	120903003709	450176	1801512111
Lead finish	NiPdAu	NiPdAu	NiPdAuAg	NiPdAu

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 from the TI ECO website.

Changes to product identification resulting from this PCN:

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

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
Pb
G4
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:

SN74AVC2T245RSWR	TPD13S523RSVR	TS3USB221RSER	TXB0104RUTR
SN74AVC4T245RSVR	TPD6E001RSER	TS3USB30ERSWR	TXB0304RUTR
SN74AVC4T774RSVR	TS3USB221ARSER	TS5A23159RSER	
TCA6408ARSVR	TS3USB221ERSER	TS5USBA224RSWR	

Qualification Report

ASEN RSE Package (Hong-how HP20VI-RH screen print)
Qualification Approved on 1/21/2016

Product Attributes

Attributes	Qual Device: TS3USB221ERSER	QBS Product Reference: TS3USB221ARSE	QBS Product Reference: TS3USB221EDRC	QBS Package Reference: SN74AVC4T245RSVR
Assembly Site	ASEN	NSE	TIM (MAL)	ASEN
Package Family	QFN	QFN	QFN	-
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	50B10	50b10.13	50B10.13	ASLC10

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260C: TS3USB221RSER, TS3USB221ERSER
- Qual Devices qualified at LEVEL1-260CG: TS3USB221ARSER, TS5A23159RSER

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TS3USB221ERSER	QBS Product Reference: TS3USB221ARSE	QBS Product Reference: TS3USB221EDRC	QBS Package Reference: SN74AVC4T245RSVR
AC	Autoclave 121C	96 Hours	-	3/231/0	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	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	-	3/231/0	-	3/231/0
HBM	ESD - HBM	7000 V	-	3/9/0	1/3/0	-
HBM	ESD - HBM -HIGH	12000 V	-	3/9/0	-	-
CDM	ESD - CDM	1500 V	-	3/9/0	1/3/0	-
HTOL	Life Test, 150C	300 Hours	-	3/348/0	-	3/231/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	3/231/0
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	3/231/0	-	-
LU	Latch-up	(per JESD78)	-	3/9/0	1/6/0	-
PD	Physical Dimensions	--	3/15/0	-	-	3/15/0
SD	Solderability	Pb Free	-	-	-	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	-	3/231/0
WBP	Bond Strength	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

Qualification Report

ASEN RSV Package (Hong-how HP20VI-RH screen print)
Qualification Approved on 1/21/2016

Product Attributes

Attributes	Qual Device: SN74AVC4T245RSVR	QBS Product Reference: SN74AVC4T245PWR	QBS Product Reference: TCA6408APWR
Assembly Site	ASEN	MLA	TIM
Package Family	-	TSSOP	TSSOP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	FFAB	FFAB	FFAB
Wafer Process	ASLC10	ASLC10	LBC7

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260C: SN74AVC4T245RSVR, SN74AVC4T774RSVR, TCA6408ARSVR

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: SN74AVC4T245RSVR	QBS Product Reference: SN74AVC4T245PWR	QBS Product Reference: TCA6408APWR
AC	Autoclave 121C	96 hours	3/231/0	-	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	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	3/231/0	-	-
HBM	ESD - HBM	3000 V	-	-	1/3/0
HBM	ESD - HBM -HIGH	8000 V	-	1/3/0	-
CDM	ESD - CDM	1500 V	-	1/3/0	1/3/0
HTOL	Life Test, 150C	300 Hours	3/231/0	-	1/77/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	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	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	-	1/77/0
WBP	Bond Strength	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

Qualification Report

ASEN RSW Package (Hong-how HP20VI-RH screen print)
Qualification Approved on 1/21/2016

Product Attributes

Attributes	Qual Device: TS3USB30ERSWR	QBS Package Reference: SN74AVC4T245RSVR
Assembly Site	ASEN	ASEN
Package Family	QFN	-
Flammability Rating	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	FFAB	FFAB
Wafer Process	50b10	ASLC10

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260C: TS3USB30ERSWR, SN74AVC2T245RSWR

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TS3USB30ERSWR	QBS Package Reference: SN74AVC4T245RSVR
AC	Autoclave 121C	96 Hours	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	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	-	3/231/0
HTOL	Life Test, 150C	300 Hours	-	3/231/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	3/231/0
PD	Physical Dimensions	--	3/15/0	3/15/0
SD	Solderability	Pb Free	-	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0
WBP	Bond Strength	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.

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