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

PCN# 20201022000.1A
Qualification of TI Philippines as an additional Assembly site for select devices
Change Notification / Sample Request

Date: January 15, 2021
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

Revision A is to announce the addition of new devices that were not included on the original PCN notification.

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 proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

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 Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact your field sales representative.

Sincerely,

PCN Team
SC Business Services

20201022000.1A
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
TS5A3157DBVR	null
TS5A3159DBVR	null
TS5A3159DBVT	null

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

PCN Number:	20201022000.1A	**PCN Date:**	Jan. 15, 2021
Title:	Qualification of TIPI as an additional Assembly site for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Jan 27, 2021	**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:

Revision A is to announce the addition of new devices that were not included on the original PCN notification. These new devices are included under Group 2 in the Product affected section. The expected first shipment date for these new devices will be 90 days from this notice (**April 15, 2021**) for these newly added devices only. The proposed 1st ship date of Jan 27, 2021 still applies for the original set of devices.

Texas Instruments Incorporated is announcing the qualification TIPI (TI Philippines Inc.) as Additional Assembly Site for select devices listed in the "Product Affected" Section. Current assembly sites and Material differences are as follows.

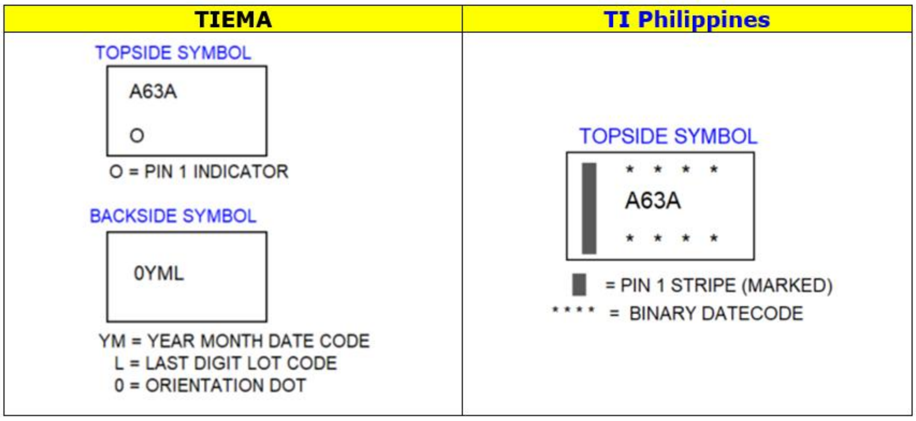
Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
TIEMA	CU6	MYS	Melaka
HANA	HNT	THA	Ayutthaya
TI Philippines	PHI	PHL	Baguio City

Group 1 Device:

Material Differences

	TIEMA	TIPI
Mount compound	8075531	8095733
Mold compound	8097131	4222198
Wire Type	Au	Cu
Lead Finish	Matte Sn	NiPdAu

Marking Differences

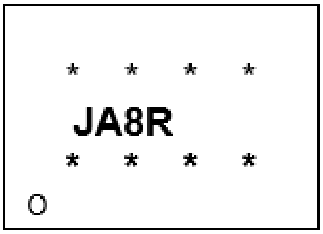
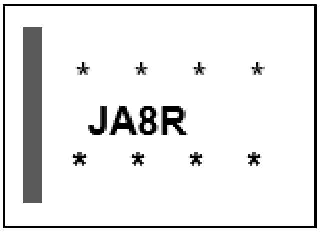


Group 2 Device:

Material Differences:

	HANA	TIPI
Mount compound	400180	4207123
Mold compound	450207	4222198
Wire Type	Au	Cu
Lead Finish	NiPdAu	NiPdAu

Pin 1 Marking Differences:

HANA	TI Philippines
 O = PIN 1 INDICATOR * * * * = BINARY DATE CODE	 ▮ = PIN 1 STRIPE * * * * = BINARY DATE CODE

Reason for Change:

Continuity of supply.

1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties
2) Maximize flexibility within our Assembly/Test production sites.
3) Cu is easier to obtain and stock

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-Info website. There is no impact to the material meeting current regulatory compliance requirements with this PCN change.

Changes to product identification resulting from this PCN:

Assembly Site		
TIEMA	Assembly Site Origin (22L)	ASO: CU6
HANA	Assembly Site Origin (22L)	ASO: HNT
TIPI	Assembly Site Origin (22L)	ASO: PHI

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS

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)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

Group 1 Product Affected:

LM321MF/NOPB	LP2980AIM5-5.0/NOPB	LP2985AIM5-3.3/NOPB	LP5907MFX-1.8/NOPB
LM321MFX/NOPB	LP2980AIM5X-3.0/NOPB	LP2985AIM5-5.0/NOPB	LP5907MFX-2.5/NOPB
LMC7101AIM5/NOPB	LP2980AIM5X-3.3/NOPB	LP2985AIM5X-3.3/NOPB	LP5907MFX-2.8/NOPB
LMC7101AIM5X/NOPB	LP2980AIM5X-5.0/NOPB	LP2985AIM5X-5.0/NOPB	LP5907MFX-2.85/NOPB
LMC7101BIM5/NOPB	LP2980IM5-3.0/NOPB	LP2985IM5-3.3/NOPB	LP5907MFX-2.9/NOPB
LMC7101BIM5X/NOPB	LP2980IM5-3.3/NOPB	LP2985IM5-5.0/NOPB	LP5907MFX-3.0/NOPB
LMC7101BIM5X/S7002311	LP2980IM5-5.0/NOPB	LP2985IM5X-3.3/NOPB	LP5907MFX-3.1/NOPB
LP2980AIM5-3.0/NOPB	LP2980IM5X-3.0/NOPB	LP2985IM5X-5.0/NOPB	LP5907MFX-3.2/NOPB
LP2980AIM5-3.3/NOPB	LP2980IM5X-3.3/NOPB	LP5907MFX-1.2/NOPB	LP5907MFX-3.3/NOPB
LP2980AIM5-3.3/S7002302	LP2980IM5X-5.0/NOPB	LP5907MFX-1.5/NOPB	LP5907MFX-4.5/NOPB

Group 2 Product Affected:

TS5A3157DBVR	TS5A3159DBVR	TS5A3159DBVT
TS5A3157DBVRG4	TS5A3159DBVRG4	TS5A3159DBVTG4

Group 1 Qualification Report

Approve Date 22-Sep-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: LM321MFX/NOPB	Qual Device: LP2985AIM550NO	Qual Device: LP5907MFX-4.5/NOPB	QBS Package Reference: TLV1805QDBVRQ1	QBS Package Reference: TPS2051CDBVR	QBS Package Reference: TPS76933DBVR
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0	3/231/0	3/231/0	-	-
ED	Electrical Characterization, side by side	(per datasheet limits)	Pass	Pass	Pass	Pass	-	-
HAST	Biased HAST, 130C/85%RH	192 Hours (for information)	-	-	-	3/231/0	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	3/231/0	-	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	3/231/0	-	-	-	-
HTSL	High Temp Storage Bake 175C	1000 Hours	-	-	-	3/231/0	-	-
SD	Solderability	Pb Free	-	-	-	1/15/0	3/66/0	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
WBP	Bond Pull	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0

- QBS: Qual By Similarity
- Qual Devices LM321MFX/NOPB, LP5907MFX-4.5/NOPB, LP2985AIM550NO are qualified at LEVEL1-260CG
- 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

Approve Date 20-Oct-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TS5A3159DBVR	QBS Package Reference: TPS76933DBVR
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0
HTOL	Life Test, 150C	300 Hours	-	3/230/0
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0	3/231/0
SD	Solderability	8 Hours Steam Age	-	3/66/0
TC	Temperature Cycle, -65/150C	500 Cycles	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

- QBS: Qual By Similarity
- Qual Device TS5A3159DBVR is qualified at LEVEL1-260C
- 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

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