



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

**PCN#20200924003.1**  
**Qualification of additional assembly sites for select MSOP Devices**  
**Change Notification / Sample Request**

**Date:** September 25, 2020

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 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](mailto:PCN_admin_team@list.ti.com)). For sample requests or sample related questions, contact your field sales representative.

Sincerely,

PCN Team  
SC Business Services

**20200924003.1**  
**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**

LM3485MM/NOPB  
LM3481MM/NOPB  
LM258ADGKR  
LM2903DGKR  
LM3485MMX/NOPB  
LM3478MMX/NOPB  
LM393DGKR  
LM5007MM/NOPB  
LM3478MM/NOPB  
LM3481MMX/NOPB  
LM5007MMX/NOPB  
LM5008MM/NOPB  
TMP75AIDGKR  
LM2904DGKR  
LM293DGKR  
LM358ADGKR  
LM5008MMX/NOPB  
INA225AIDGKR  
INA225AIDGKT  
LM258DGKR  
LM358DGKR  
LM5008AMM/NOPB  
LM5008AMMX/NOPB  
PGA308AIDGSR  
PGA308AIDGST  
TMP75AIDGKT  
TPS2001DDGK  
TPS2001DDGKR

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

**PCN Number:** 20200924003.1 **PCN Date:** Sept 25 2020

**Title:** Qualification of additional assembly sites for select MSOP Devices

**Customer Contact:** [PCN Manager](#) **Dept:** Quality Services

**Proposed 1<sup>st</sup> Ship Date:** Dec 23 2020 **Estimated Sample Availability:** Date provided at sample request

<b>Change Type:</b>		
<input checked="" type="checkbox"/> Assembly Site	<input type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Site
<input 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 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"/> Wafer Fab Process

**PCN Details**

**Description of Change:**

Texas Instruments Incorporated is announcing the qualification of additional Assembly sites for devices listed below in the product affected section. Construction differences and current assembly sites are as follows:

<b>VSSOP (MSOP) build sites</b>	
Assembly Sites	ASESHAT, HFTFAT, HNA, TIEM, UTAC, HNC
Lead Finish	NiPdAu; NiPdAuAg; MatteSn
Mold Compound	SID#450179 SID#450240 SID#450265 SID#EN2000515 SID#R-30 8096859-0001
Mount Compound	SID#400154 SID#A-18 SID#EY1000063 SID#PZ0031 SID#PZ0037 4213245-0003

Upon expiry of this PCN TI will combine lead free solutions in a single **standard part number**, for the devices in group 2. For example; **INA225AIDGKT** – can ship with both Matte Sn and NiPdAu/Ag.

Example:

- Customer order for 7500 units of INA225AIDGKT with 2500 units SPQ (Standard Pack Quantity per Reel).
- TI can satisfy the above order in one of the following ways.
  - I. 3 Reels of NiPdAu finish.

- II. 3 Reels of Matte Sn finish
- III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.
- IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.

**Reason for Change:**

Supply continuity

**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	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TI Melaka	CU6	MYS	Melaka
ASESH	ASH	CHN	Shanghai
<b>HFTF</b>	<b>HFT</b>	<b>CHN</b>	<b>Hefei</b>
<b>Hana Thailand</b>	<b>HNT</b>	<b>THA</b>	<b>Ayutthaya</b>
<b>UTAC</b>	<b>NSW</b>	<b>THA</b>	<b>Bangkok</b>
<b>Hana China</b>	<b>CHS</b>	<b>CHN</b>	<b>Jiaxing City</b>

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS  
 MADE IN: Malaysia  
 2DC: 20:  
 MSL 2 /260C/1 YEAR SEAL DT  
 MSL 1 /235C/UNLIM 03/29/04  
 OPT:  
 ITEM: 39  
 LBL: 5A (L)T0:1750

(Pb) G4

(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

G4: NiPdAu  
 G3: Matte Sn

**Product Affected:**

INA225AIDGKR	LM3478MM/NOPB	LM358DGKR	LM5008MMX/NOPB
INA225AIDGKT	LM3478MMX/NOPB	LM393DGKR	PGA308AIDGSR
LM258ADGKR	LM3481MM/NOPB	LM5007MM/NOPB	PGA308AIDGST
LM258DGKR	LM3481MMX/NOPB	LM5007MMX/NOPB	TMP75AIDGKR
LM2903DGKR	LM3485MM/NOPB	LM5008AMM/NOPB	TMP75AIDGKT
LM2904DGKR	LM3485MMX/NOPB	LM5008AMMX/NOPB	TPS2001DDGK
LM293DGKR	LM358ADGKR	LM5008MM/NOPB	TPS2001DDGKR

## MSOP Qualification Report

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

	Stress Test	Duration	HFTF LM5008MM/NOPB	ASESH THS4304DGK
TC	Temperature Cycling -65/150C	500 Cycles	3/231/0	3/231/0
HAST	Biased HAST 130C/85%RH	96 hours	3/231/0	3/231/0
THB	Temperature Humidity Bias, 85C/85%RH	1000 hours	-	-
HTSL	High Temp. Storage Bake 150C	1000 hours	-	-
HTSL	High Temp. Storage Bake 170C	420 hours	3/231/0	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 hours	3/231/0	-
AC	Autoclave 121C	96 hours	-	3/231/0
SD	Solderability	8 Hour Steam age or 155C Dry Bake	3/66/0 (PGA308AIDGSR)	3/66/0 (THS4304DGK)
MQ	Manufacturability	-	Pass	Pass

	Stress Test	Duration	HNA TPS77301DGK	TIEMA LM3489QMM
TC	Temperature Cycling -65/150C	500 Cycles	3/231/0	3/231/0
HAST	Biased HAST 130C/85%RH	96 hours	3/231/0	-
THB	Temperature Humidity Bias, 85C/85%RH	1000 hours	-	3/231/0
HTSL	High Temp. Storage Bake 150C	1000 hours	3/231/0	1/77/0
HTSL	High Temp. Storage Bake 170C	420 hours	-	-
UHAST	Unbiased HAST, 130C/85%RH	96 hours	-	-
AC	Autoclave 121C	96 hours	3/231/0	3/231/0
SD	Solderability	8 Hour Steam age or 155C Dry Bake	3/66/0 (TS5A23160DGSR)	3/66/0 (LM2660MM/NOPB)
MQ	Manufacturability	-	Pass	Pass

	Stress Test	Duration	HNC LM358DGKR	UTAC TPS22958DGK
TC	Temperature Cycling -65/150C	500 Cycles	3/231/0	3/231/0
HAST	Biased HAST 130C/85%RH	96 hours	3/231/0	3/231/0 (Note a)
THB	Temperature Humidity Bias, 85C/85%RH	1000 hours	-	-
HTSL	High Temp. Storage Bake 150C	1000 hours	3/231/0	-
HTSL	High Temp. Storage Bake 170C	420 hours	-	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 hours	-	-
AC	Autoclave 121C	96 hours	3/231/0	3/231/0
SD	Solderability	8 Hour Steam age or 155C Dry Bake	3/66/0 (MC33078DGKR)	3/66/0 (TPS61085TDGKRQ1)
MQ	Manufacturability	-	Pass	Pass

All qualification devices in the tables are qualified at L1-260C MSL rating.

Note a – 2 lots of Biased HAST were collected on INA159AIDGK

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, and HTSL, as applicable
- The following are equivalent HTSL options based on activation energy of 0.7eV: 150C/1k Hours, and 170C/420 Hours

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 contacts shown below or your local Field Sales Representative.

<b>Location</b>	<b>E-Mail</b>
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
WW PCN Team	<a href="mailto:PCN_ww_admin_team@list.ti.com">PCN_ww_admin_team@list.ti.com</a>

### IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale ([www.ti.com/legal/termsofsale.html](http://www.ti.com/legal/termsofsale.html)) or other applicable terms available either on [ti.com](http://ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.