



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20211207001.1

**Qualification of HFTF as an additional Assembly site for select devices
Change Notification / Sample Request**

Date: December 08, 2021

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.

Texas Instruments requires acknowledgement of 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 samples or additional data are required, requests must be received within **30 days** of this notification.

The changes discussed within this PCN will not take effect any earlier than the proposed first ship date 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 or to provide acknowledgement of this PCN, you may 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 local Field Sales Representative.

PCN Team
SC Business Services



20211207001.1
Change Notification / Sample Request
Attachments

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
INA226AIDGSR	null
INA226AIDGST	null
INA233AIDGST	null

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

PCN Number:	20211207001.1		PCN Date:	December 08, 2021				
Title:	Qualification of HFTF as an additional Assembly site for the select devices							
Customer Contact:	PCN Manager	Dept:	Quality Services					
Proposed 1st Ship Date:	Mar 8, 2022	Estimated Sample Availability:	Date provided at sample request					
Change Type:								
<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"/>	<input type="checkbox"/> Wafer Fab Process						
PCN Details								
Description of Change:								
Texas Instruments is pleased to announce the qualification of HFTF as an additional assembly site for the list of devices shown below. Current assembly site and Material differences are as follows:								
	ASESH	HFTF						
Mount Compound	SID#EY1000063	SID#A-18						
Mold Compound	SID#EN2000515	SID#R-30						
Lead Finish	NiPdAuAg	Matte Sn						
Reason for Change:								
Continuity of Supply								
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):								
None								
Impact on Environmental Ratings								
Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.								
RoHS	REACH	Green Status	IEC 62474					
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change					
Changes to product identification resulting from this PCN:								
Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City					
ASESH	ASH	CHN	Shanghai					
HFTF	HFT	CHN	Hefei					
Sample product shipping label (not actual product label)								
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  <p>TEXAS INSTRUMENTS</p> <p>MADE IN: Malaysia</p> <p>2DC: 20:</p> <table border="1"> <tr> <td>MSL 2 / 260C / 1 YEAR</td> <td>SEAL DT</td> </tr> <tr> <td>MSL 1 / 235C / UNLIM</td> <td>03/29/04</td> </tr> </table> <p>OPT:</p> <p>ITEM: 39</p> <p>LBL: 5A (L)T0:1750</p> </div> <div style="flex: 1; text-align: center;">  </div> <div style="flex: 2;"> <p>(1P) SN74LS07NSR</p> <p>(Q) 2000 (D) 0336</p> <p>(31T) LOT: 3959047MLA</p> <p>(4W) TKY (1T) 7523483SI2</p> <p>(P)</p> <p>(2P) REV: (V) 0033317</p> <p>(20L) CSO: SHE (21L) CCO:USA</p> <p>(22L) ASO: MLA (23L) ACO: MYS</p> </div> </div>					MSL 2 / 260C / 1 YEAR	SEAL DT	MSL 1 / 235C / UNLIM	03/29/04
MSL 2 / 260C / 1 YEAR	SEAL DT							
MSL 1 / 235C / UNLIM	03/29/04							

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Product Affected:

INA226AIDGSR	INA226AIDGST	INA233AIDGSR	INA233AIDGST
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Qualification Report

Approve Date 02-Nov-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>INA226AIDGSR</u>	Qual Device: <u>INA230AIDGS</u>	QBS Process Reference: <u>INA225AQDGKRQ1</u>	QBS Package Reference: <u>LM5008MM_PCC</u>	QBS Package Reference: <u>PGA308AIDGSR</u>
-	Solderability, Pb-Free	155C Dry Bake	-	-	-	-	3/66/0
-	unbiased HAST 130C/85%RH	96 Hours	-	-	-	-	3/231/0
AC	Autoclave 121C	96 Hours	-	-	1/77/0	-	-
CDM	ESD - CDM	1500 V	1/3/0	-	1/3/0	-	-
DS	Die Shear	Die	-	-	-	3/30/0	3/30/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	3/90/0	-	-
FLAM	Flammability	Method A - UL94 V-0	-	-	-	1/Pass	1/Pass
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	1/77/0	3/231/0	-
HBM	ESD - HBM	4000 V	1/3/0	-	-	-	-
HBM	ESD - HBM - Q100	2500 Volts	-	-	1/3/0	-	-
HTOL	Life Test, 150C	408 Hours	-	-	1/77/0	-	-
HTSL	High Temp Storage Bake 175C	500 Hours	-	-	1/45/0	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	3/231/0	-
LI	Lead Pull	Leads	-	-	-	-	3/72/0
LU	Latch-up	LUP	1/6/0	-	1/6/0	-	-
MISC	Salt Atmosphere	24 Hours	-	-	-	-	1/22/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	-	1/Pass	1/Pass	3/Pass	3/Pass
MSL	Moisture Sensitivity	Level 1 - 260C	-	-	-	3/36/0	-
MSL	Moisture Sensitivity	Level 2 - 260C	-	1/25/0	-	-	3/36/0
PD	Physical Dimensions	(per mechanical drawing)	-	-	-	-	3/15/0
PKG	Lead Finish Adhesion	Leads	-	-	-	-	3/45/0
TC	Temperature Cycle, -65C/150C	500 Cycles	-	1/77/0	1/77/0	3/231/0	3/231/0

Type	Test Name / Condition	Duration	Qual Device: INA226AIDGSR	Qual Device: INA230AIDGS	QBS Process Reference: INA225AQDGKRQ1	QBS Package Reference: LM5008MM_PCC	QBS Package Reference: PGA308AIDGSR
TC-BP	Post TC Bond Pull	Wires	-	-	1/30/0	-	-
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0
WBP	Auto Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	-	-	1/40/0	-	-
WBP	Wire Bond Pull	Wires	-	-	-	3/228/0	3/228/0
WBS	Auto Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	-	-	1/40/0	-	-
XRAY	X-Ray	Top side only	-	-	-	3/15/0	3/15/0

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- QBS: Qual By Similarity

- Qual Device INA230AIDGS is qualified at LEVEL2-260CG

- Qual Device INA226AIDGSR is qualified at LEVEL2-260CG

- 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

Approve Date 28-October -2021

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: INA233AIDGSR	QBS Reference: OPA1679QRUMRQ1	QBS Reference: PGA308AIDGSR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	-
TC	A4	Temperature Cycle	-55/125C	700 Cycles	1/77	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	1/45/0	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	-	-	3/228/0
ESD	E2	ESD CDM	-	250 Volts	1/3	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3	-	-
LU	E4	Latch-Up	Per JESD78	-	1/6	-	-
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	-

QBS: Qual By Similarity

Qual Device INA233AIDGSR is qualified at MSL2 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 contacts shown below or your local Field Sales Representative.

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USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
WW PCN Team	PCN_ww_admin_team@list.ti.com

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