



<b>PCN Number:</b>	20211207001.1		<b>PCN Date:</b>	December 08, 2021
<b>Title:</b>	Qualification of HFTF as an additional Assembly site for the select devices			
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services	
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Mar 8, 2022	<b>Estimated Sample Availability:</b>	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		
<b>PCN Details</b>				
<b>Description of Change:</b>				
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:				
	<b>ASESH</b>	<b>HFTF</b>		
Mount Compound	SID#EY1000063	SID#A-18		
Mold Compound	SID#EN2000515	SID#R-30		
Lead Finish	NiPdAuAg	Matte Sn		
<b>Reason for Change:</b>				
Continuity of Supply				
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>				
None				
<b>Impact on Environmental Ratings</b>				
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.				
<b>RoHS</b>	<b>REACH</b>	<b>Green Status</b>	<b>IEC 62474</b>	
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	
<b>Changes to product identification resulting from this PCN:</b>				
<b>Assembly Site</b>	<b>Assembly Site Origin (22L)</b>	<b>Assembly Country Code (23L)</b>	<b>Assembly City</b>	
ASESH	ASH	CHN	Shanghai	
HFTF	HFT	CHN	Hefei	
Sample product shipping label (not actual product label)				
 MADE IN: Malaysia 2DC: 2d: MSL 2 /260C/1 YEAR SEAL DT MSL 1 /235C/UNLIM 03/29/04 OPT: ITEM: 39 <b>LBL: 5A (L)T0:1750</b>		 (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		

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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: <a href="#">INA226AIDGSR</a>	Qual Device: <a href="#">INA230AIDGS</a>	QBS Process Reference: <a href="#">INA225AQDGKRQ1</a>	QBS Package Reference: <a href="#">LM5008MM_PCC</a>	QBS Package Reference: <a href="#">PGA308AIDGSR</a>
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: <a href="#">INA233AIDGSR</a>	QBS Reference: <a href="#">OPA1679QRUMRQ1</a>	QBS Reference: <a href="#">PGA308AIDGSR</a>
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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