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

PCN#20211028000.1
Qualification of HFTF as an additional Assembly site for select devices
Change Notification / Sample Request

Date: October 28, 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

20211028000.1
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
INA211AIDCKR	null
INA211AIDCKT	null
INA213AIDCKR	null
INA213BIDCKT	null
INA210AIDCKR	null
INA214AIDCKR	null
INA199A1DCKT	null
INA199A1DCKR	null
INA212AIDCKT	null
INA213AIDCKT	null
INA199A3DCKT	null
INA199A3DCKR	null
INA199B1DCKR	null
INA199B1DCKT	null
INA214AIDCKT	null
INA199B3DCKR	null

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

PCN Number:	20211028000.1	**PCN Date:**	October 28, 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:	Jan 26, 2022	**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 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:

	NFME	HFTF
Mold Compound	SID# R-07	SID#R-27
Lead Finish	NiPdAu	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
☒ No Change	☒ No Change	☒ No Change	☒ No Change

Changes to product identification resulting from this PCN:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
NFME	NFM	CHN	Economic Development Zone
HFTF	**HFT**	**CHN**	**Hefei**

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

Product Affected:

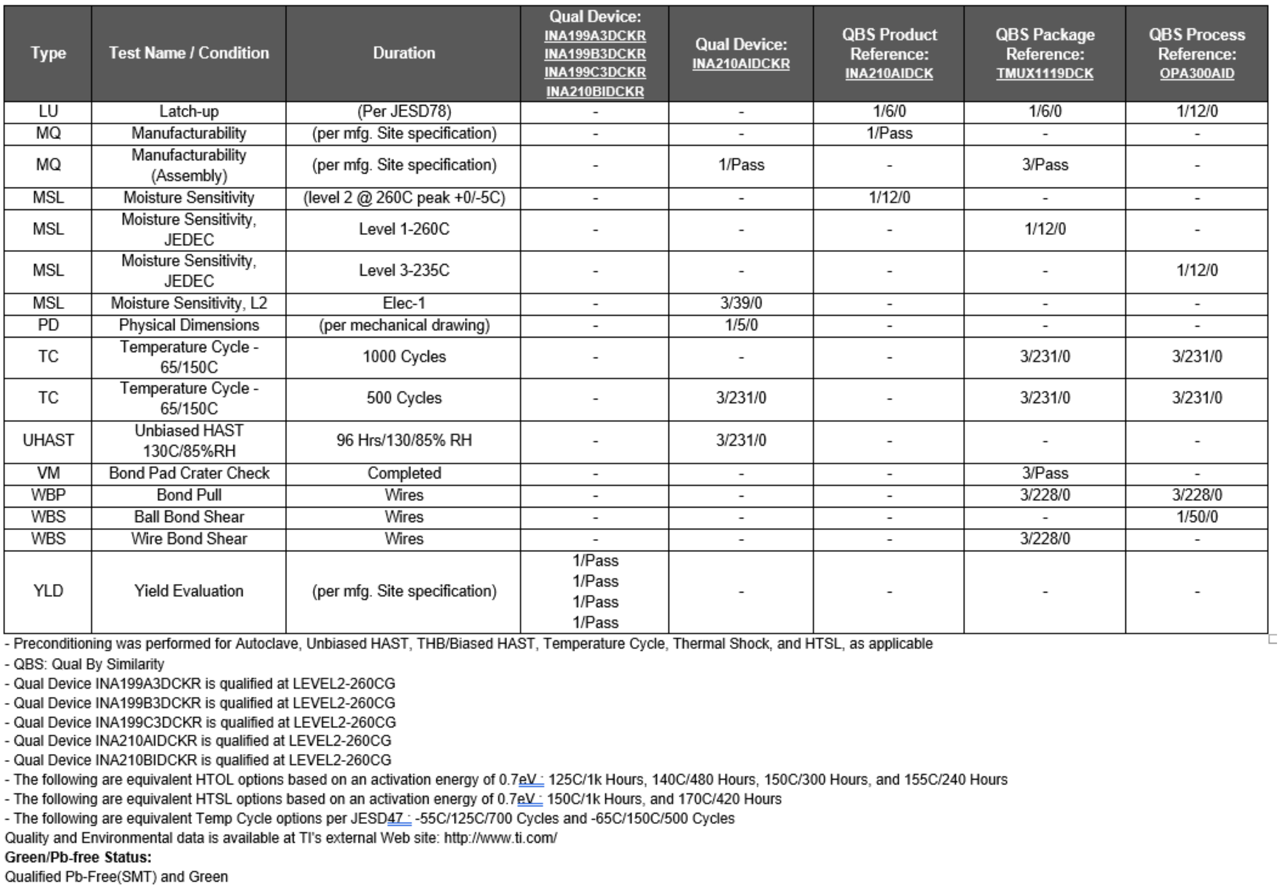
BQ500100DCKR	INA199C1DCKR	INA211AIDCKRG4	INA213BIDCKR
BQ500100DCKT	INA199C1DCKT	INA211AIDCKT	INA213BIDCKT
INA199A1DCKR	INA199C2DCKR	INA211AIDCKTG4	INA214AIDCKR
INA199A1DCKT	INA199C2DCKT	INA211BIDCKR	INA214AIDCKR-S
INA199A2DCKR	INA199C3DCKR	INA211BIDCKT	INA214AIDCKRG4
INA199A2DCKT	INA199C3DCKT	INA212AIDCKR	INA214AIDCKT
INA199A3DCKR	INA210AIDCKR	INA212AIDCKT	INA214AIDCKTG4
INA199A3DCKT	INA210AIDCKR-S	INA212AIDCKTG4	INA214BIDCKR
INA199B1DCKR	INA210AIDCKRG4	INA212BIDCKR	INA214BIDCKT
INA199B1DCKT	INA210AIDCKT	INA212BIDCKT	INA215AIDCKR
INA199B2DCKR	INA210AIDCKTG4	INA213AIDCKR	INA215AIDCKT
INA199B2DCKT	INA210BIDCKR	INA213AIDCKRG4	INA215BIDCKR
INA199B3DCKR	INA210BIDCKT	INA213AIDCKT	INA215BIDCKT
INA199B3DCKT	INA211AIDCKR	INA213AIDCKTG4	

Qualification Report

Approve Date 06-Aug-2021

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

Type	Test Name / Condition	Duration	Qual Device: INA199A3DCKR INA199B3DCKR INA199C3DCKR INA210BIDCKR	Qual Device: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
-	Pb Free Solderability - Dip and Look	Pb Free/Solderability	-	3/66/0	-	-	-
-	Pb Solderability - Dip and Look	Pb/Solderability	-	3/66/0	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1000 V	-	1/3/0	-	-	1/3/0
CDM	ESD - CDM	2000 V	-	-	1/12/0	1/3/0	-
CDM	ESD CDM	500 V	-	-	-	-	1/3/0
DS	Die Shear	--	-	-	-	-	3/30/0
ED	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	3/307/0
HBM	ESD - HBM	6000 V	-	-	-	1/3/0	-
HBM	ESD HBM	1000 V	-	-	-	-	1/3/0
HBM	ESD HBM	4000 V	-	-	-	-	1/3/0
HBM	ESD HBM	500V, 1000V, 1500V, 2000V, 3000V, 4000V (ss=3 per voltage)	-	-	1/18/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	3/231/0
HTOL	Life Test, 150C	3000 Hours	-	-	-	-	1/116/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	3/231/0	-	-	3/135/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 170C	600 Hours	-	-	-	3/231/0	-



Type	Test Name / Condition	Duration	Qual Device: INA199A3DCKR INA199B3DCKR INA199C3DCKR INA210BIDCKR	Qual Device: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
LU	Latch-up	(Per JESD78)	-	-	1/6/0	1/6/0	1/12/0
MQ	Manufacturability	(per mfg. Site specification)	-	-	1/Pass	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	-	1/Pass	-	3/Pass	-
MSL	Moisture Sensitivity	(level 2 @ 260C peak +0/-5C)	-	-	1/12/0	-	-
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	-	-	-	1/12/0	-
MSL	Moisture Sensitivity, JEDEC	Level 3-235C	-	-	-	-	1/12/0
MSL	Moisture Sensitivity, L2	Elec-1	-	3/39/0	-	-	-
PD	Physical Dimensions	(per mechanical drawing)	-	1/5/0	-	-	-
TC	Temperature Cycle -65/150C	1000 Cycles	-	-	-	3/231/0	3/231/0
TC	Temperature Cycle -65/150C	500 Cycles	-	3/231/0	-	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hrs/130/85% RH	-	3/231/0	-	-	-
VM	Bond Pad Crater Check	Completed	-	-	-	3/Pass	-
WBP	Bond Pull	Wires	-	-	-	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	-	-	-	-	1/50/0
WBS	Wire Bond Shear	Wires	-	-	-	3/228/0	-
YLD	Yield Evaluation	(per mfg. Site specification)	1/Pass 1/Pass 1/Pass 1/Pass	-	-	-	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- QBS: Qual By Similarity
- Qual Device INA199A3DCKR is qualified at LEVEL2-260CG
- Qual Device INA199B3DCKR is qualified at LEVEL2-260CG
- Qual Device INA199C3DCKR is qualified at LEVEL2-260CG
- Qual Device INA210AIDCKR is qualified at LEVEL2-260CG
- Qual Device INA210BIDCKR 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 25-Aug-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: INA211AIDCKR	Qual Device: INA211BIDCKR	QBS Product Reference: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
-	Pb Free Solderability - Dip and Look	Pb Free/Solderability	-	-	3/66/0	-	-	-
-	Pb Solderability - Dip and Look	Pb/Solderability	-	-	3/66/0	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1000 V	-	-	1/3/0	-	-	1/3/0
CDM	ESD - CDM	2000 V	-	-	-	1/12/0	1/3/0	-
CDM	ESD CDM	500 V	-	-	-	-	-	1/3/0
DS	Die Shear	--	-	-	-	-	-	3/30/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	-	-	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0	3/307/0
HBM	ESD - HBM	6000 V	-	-	-	-	1/3/0	-
HBM	ESD HBM	1000 V	-	-	-	-	-	1/3/0
HBM	ESD HBM	4000 V	-	-	-	-	-	1/3/0
HBM	ESD HBM	500V, 1000V, 1500V, 2000V, 3000V, 4000V (ss=3 per voltage)	-	-	-	1/18/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	3/231/0
HTOL	Life Test, 150C	3000 Hours	-	-	-	-	-	1/116/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/231/0	-	-	3/135/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 170C	600 Hours	-	-	-	-	3/231/0	-
LU	Latch-up	(Per JESD78)	-	-	-	1/6/0	1/6/0	1/12/0
MQ	Manufacturability	(per mfg. Site specification)	-	-	-	1/Pass	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	1/Pass	-	1/Pass	-	3/Pass	-
MSL	Moisture Sensitivity	(level 2 @ 260C peak +0/-5C)	-	-	-	1/12/0	-	-
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	-	-	-	-	1/12/0	-
MSL	Moisture Sensitivity, JEDEC	Level 3-235C	-	-	-	-	-	1/12/0
MSL	Moisture Sensitivity, L2	Elec-1	-	-	3/39/0	-	-	-
PD	Physical Dimensions	(per mechanical drawing)	-	-	1/5/0	-	-	-
TC	Temperature Cycle - 65/150C	1000 Cycles	-	-	-	-	3/231/0	3/231/0
TC	Temperature Cycle - 65/150C	500 Cycles	-	-	3/231/0	-	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hrs/130/85% RH	-	-	3/231/0	-	-	-
VM	Bond Pad Crater Check	Completed	-	-	-	-	3/Pass	-
WBP	Bond Pull	Wires	-	-	-	-	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	-	-	-	-	-	1/50/0
WBS	Wire Bond Shear	Wires	-	-	-	-	3/228/0	-
YLD	Yield Evaluation	(per mfg. Site specification)	1/Pass	1/Pass	-	-	-	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- QBS: Qual By Similarity
- Qual Device INA211BIDCKR is qualified at LEVEL2-260CG
- Qual Device INA211AIDCKR 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 25-Aug-2021

Qualification Results

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

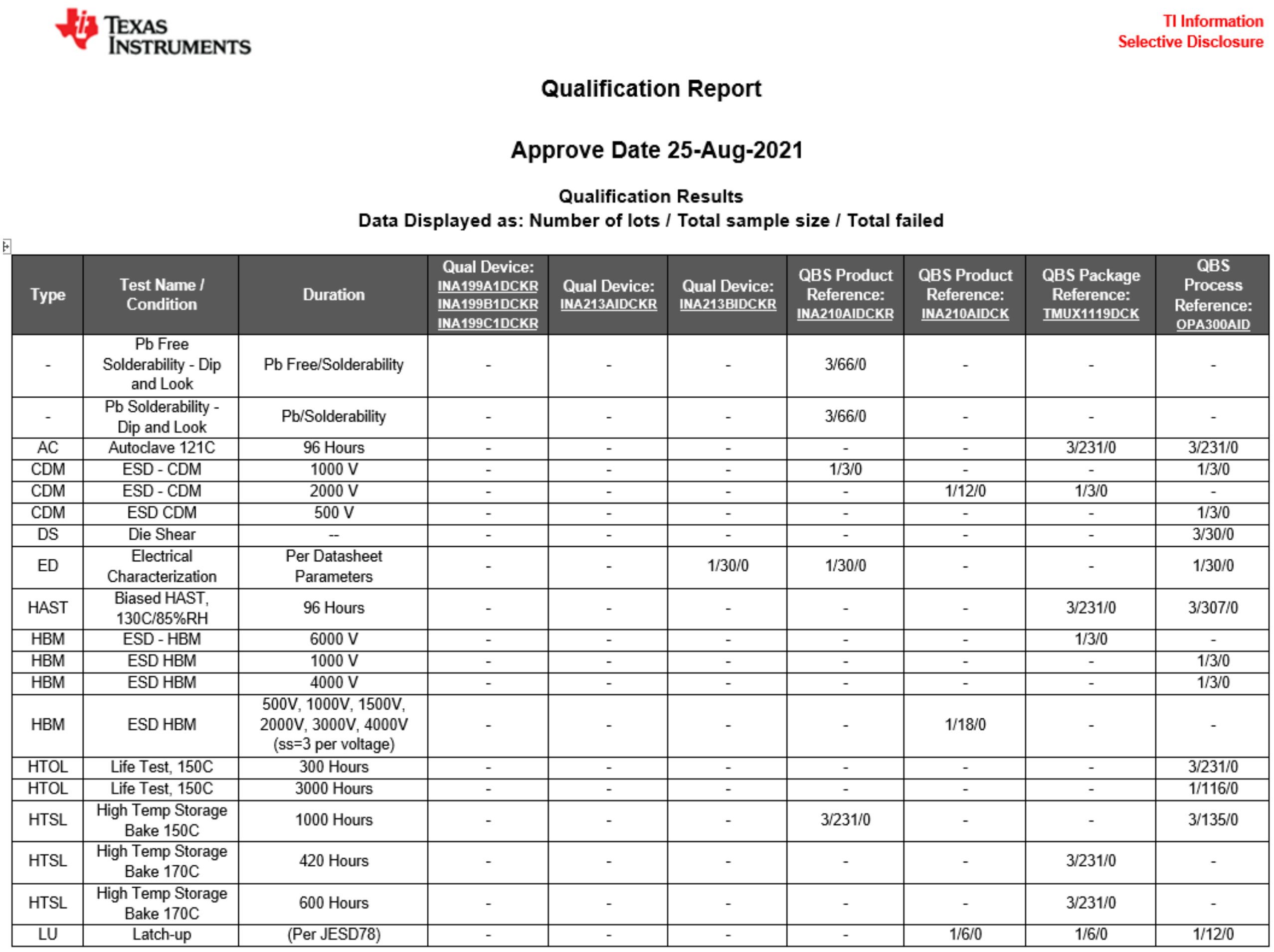
Type	Test Name / Condition	Duration	Qual Device: INA212AIDCKR	Qual Device: INA212BIDCKR	QBS Product Reference: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
-	Pb Free Solderability - Dip and Look	Pb Free/Solderability	-	-	3/66/0	-	-	-
-	Pb Solderability - Dip and Look	Pb/Solderability	-	-	3/66/0	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1000 V	-	-	1/3/0	-	-	1/3/0
CDM	ESD - CDM	2000 V	-	-	-	1/12/0	1/3/0	-
CDM	ESD CDM	500 V	-	-	-	-	-	1/3/0
DS	Die Shear	--	-	-	-	-	-	3/30/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	-	-	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0	3/307/0
HBM	ESD - HBM	6000 V	-	-	-	-	1/3/0	-
HBM	ESD HBM	1000 V	-	-	-	-	-	1/3/0
HBM	ESD HBM	4000 V	-	-	-	-	-	1/3/0
HBM	ESD HBM	500V, 1000V, 1500V, 2000V, 3000V, 4000V (ss=3 per voltage)	-	-	-	1/18/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	3/231/0
HTOL	Life Test, 150C	3000 Hours	-	-	-	-	-	1/116/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/231/0	-	-	3/135/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 170C	600 Hours	-	-	-	-	3/231/0	-
LU	Latch-up	(Per JESD78)	-	-	-	1/6/0	1/6/0	1/12/0
MQ	Manufacturability	(per mfg. Site specification)	-	-	-	1/Pass	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	1/Pass	-	1/Pass	-	3/Pass	-
MSL	Moisture Sensitivity	(level 2 @ 260C peak +0/-5C)	-	-	-	1/12/0	-	-
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	-	-	-	-	1/12/0	-
MSL	Moisture Sensitivity, JEDEC	Level 3-235C	-	-	-	-	-	1/12/0
MSL	Moisture Sensitivity, L2	Elec-1	-	-	3/39/0	-	-	-
PD	Physical Dimensions	(per mechanical drawing)	-	-	1/5/0	-	-	-
TC	Temperature Cycle -65/150C	1000 Cycles	-	-	-	-	3/231/0	3/231/0
TC	Temperature Cycle -65/150C	500 Cycles	-	-	3/231/0	-	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hrs/130/85% RH	-	-	3/231/0	-	-	-
VM	Bond Pad Crater Check	Completed	-	-	-	-	3/Pass	-
WBP	Bond Pull	Wires	-	-	-	-	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	-	-	-	-	-	1/50/0
WBS	Wire Bond Shear	Wires	-	-	-	-	3/228/0	-
YLD	Yield Evaluation	(per mfg. Site specification)	1/Pass	1/Pass	-	-	-	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- QBS: Qual By Similarity
- Qual Device INA212BIDCKR is qualified at LEVEL2-260CG
- Qual Device INA212AIDCKR 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



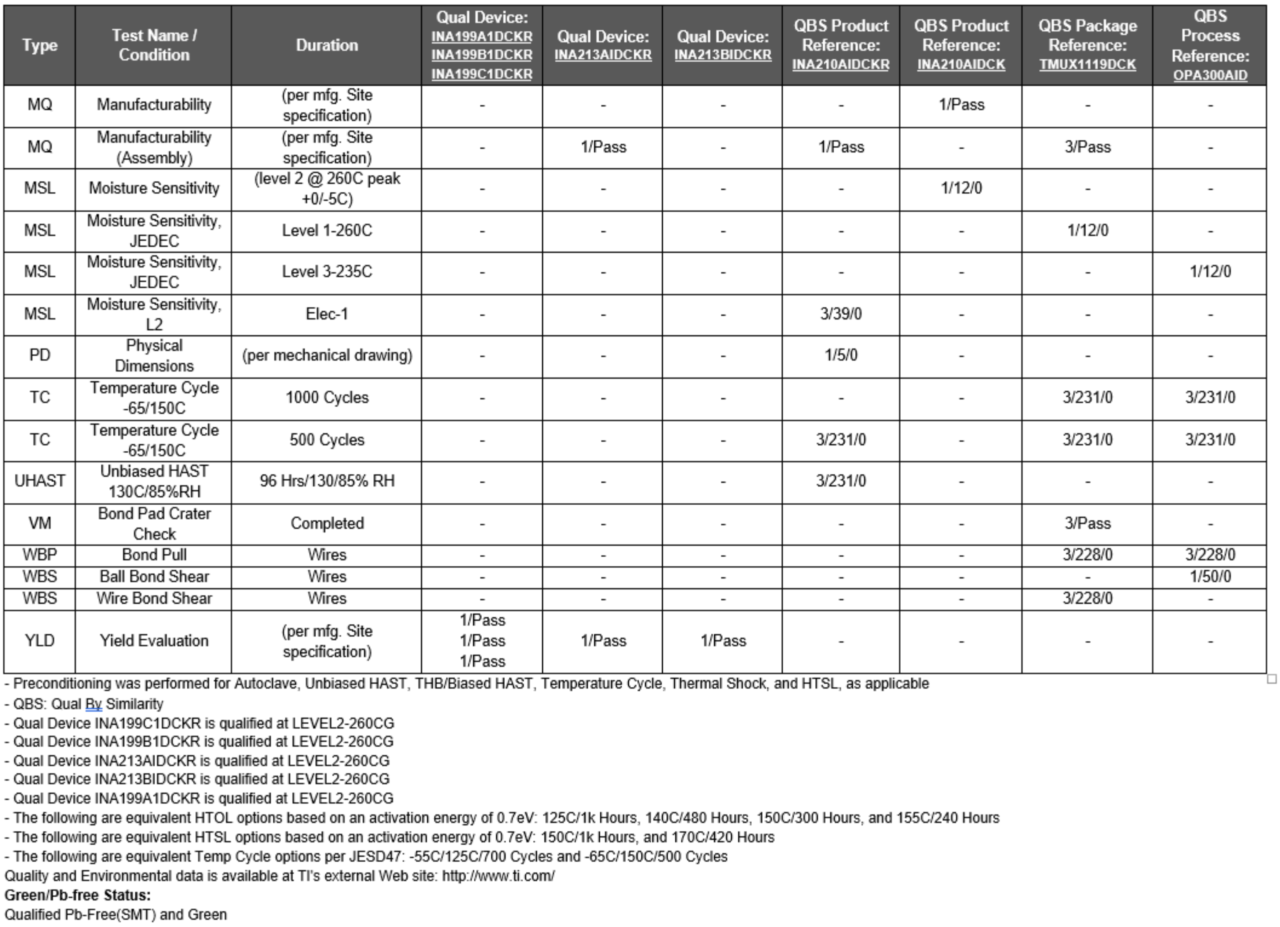
Qualification Report

Approve Date 25-Aug-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: INA199A1DCKR INA199B1DCKR INA199C1DCKR	Qual Device: INA213AIDCKR	Qual Device: INA213BIDCKR	QBS Product Reference: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
-	Pb Free Solderability - Dip and Look	Pb Free/Solderability	-	-	-	3/66/0	-	-	-
-	Pb Solderability - Dip and Look	Pb/Solderability	-	-	-	3/66/0	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1000 V	-	-	-	1/3/0	-	-	1/3/0
CDM	ESD - CDM	2000 V	-	-	-	-	1/12/0	1/3/0	-
CDM	ESD CDM	500 V	-	-	-	-	-	-	1/3/0
DS	Die Shear	--	-	-	-	-	-	-	3/30/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	1/30/0	-	-	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	3/231/0	3/307/0
HBM	ESD - HBM	6000 V	-	-	-	-	-	1/3/0	-
HBM	ESD HBM	1000 V	-	-	-	-	-	-	1/3/0
HBM	ESD HBM	4000 V	-	-	-	-	-	-	1/3/0
HBM	ESD HBM	500V, 1000V, 1500V, 2000V, 3000V, 4000V (ss=3 per voltage)	-	-	-	-	1/18/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	-	3/231/0
HTOL	Life Test, 150C	3000 Hours	-	-	-	-	-	-	1/116/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	3/231/0	-	-	3/135/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 170C	600 Hours	-	-	-	-	-	3/231/0	-
LU	Latch-up	(Per JESD78)	-	-	-	-	1/6/0	1/6/0	1/12/0



Type	Test Name / Condition	Duration	Qual Device: INA199A1DCKR INA199B1DCKR INA199C1DCKR	Qual Device: INA213AIDCKR	Qual Device: INA213BIDCKR	QBS Product Reference: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
MQ	Manufacturability	(per mfg. Site specification)	-	-	-	-	1/Pass	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	-	1/Pass	-	1/Pass	-	3/Pass	-
MSL	Moisture Sensitivity	(level 2 @ 260C peak +0/-5C)	-	-	-	-	1/12/0	-	-
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	-	-	-	-	-	1/12/0	-
MSL	Moisture Sensitivity, JEDEC	Level 3-235C	-	-	-	-	-	-	1/12/0
MSL	Moisture Sensitivity, L2	Elec-1	-	-	-	3/39/0	-	-	-
PD	Physical Dimensions	(per mechanical drawing)	-	-	-	1/5/0	-	-	-
TC	Temperature Cycle -65/150C	1000 Cycles	-	-	-	-	-	3/231/0	3/231/0
TC	Temperature Cycle -65/150C	500 Cycles	-	-	-	3/231/0	-	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hrs/130/85% RH	-	-	-	3/231/0	-	-	-
VM	Bond Pad Crater Check	Completed	-	-	-	-	-	3/Pass	-
WBP	Bond Pull	Wires	-	-	-	-	-	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	-	-	-	-	-	-	1/50/0
WBS	Wire Bond Shear	Wires	-	-	-	-	-	3/228/0	-
YLD	Yield Evaluation	(per mfg. Site specification)	1/Pass 1/Pass 1/Pass	1/Pass	1/Pass	-	-	-	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- QBS: Qual By Similarity
- Qual Device INA199C1DCKR is qualified at LEVEL2-260CG
- Qual Device INA199B1DCKR is qualified at LEVEL2-260CG
- Qual Device INA213AIDCKR is qualified at LEVEL2-260CG
- Qual Device INA213BIDCKR is qualified at LEVEL2-260CG
- Qual Device INA199A1DCKR 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

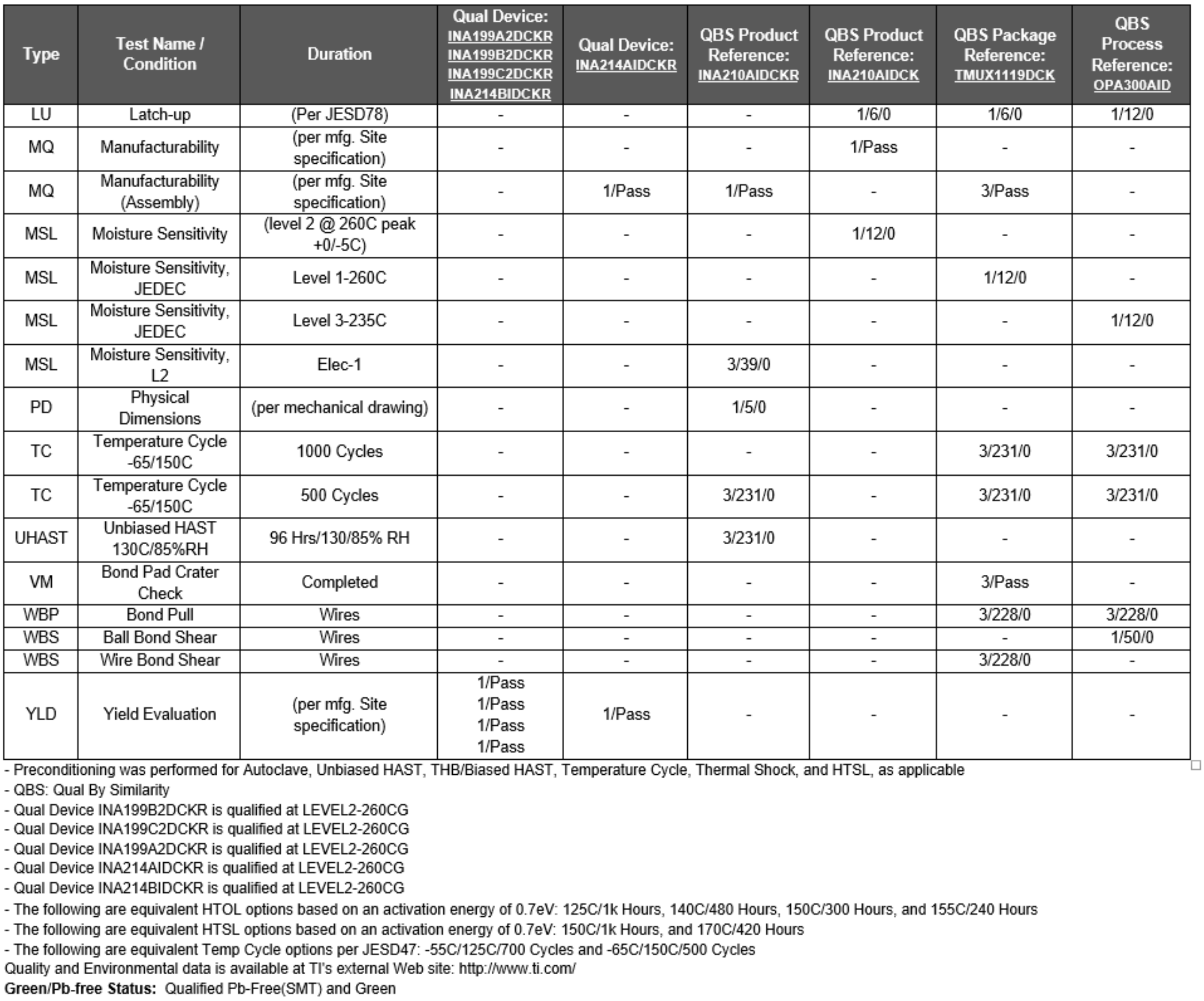
Qualification Report

Approve Date 25-Aug-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: INA199A2DCKR INA199B2DCKR INA199C2DCKR INA214BIDCKR	Qual Device: INA214AIDCKR	QBS Product Reference: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
-	Pb Free Solderability - Dip and Look	Pb Free/Solderability	-	-	3/66/0	-	-	-
-	Pb Solderability - Dip and Look	Pb/Solderability	-	-	3/66/0	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1000 V	-	-	1/3/0	-	-	1/3/0
CDM	ESD - CDM	2000 V	-	-	-	1/12/0	1/3/0	-
CDM	ESD CDM	500 V	-	-	-	-	-	1/3/0
DS	Die Shear	--	-	-	-	-	-	3/30/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	-	-	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0	3/307/0
HBM	ESD - HBM	6000 V	-	-	-	-	1/3/0	-
HBM	ESD HBM	1000 V	-	-	-	-	-	1/3/0
HBM	ESD HBM	4000 V	-	-	-	-	-	1/3/0
HBM	ESD HBM	500V, 1000V, 1500V, 2000V, 3000V, 4000V (ss=3 per voltage)	-	-	-	1/18/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	3/231/0
HTOL	Life Test, 150C	3000 Hours	-	-	-	-	-	1/116/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/231/0	-	-	3/135/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 170C	600 Hours	-	-	-	-	3/231/0	-



Type	Test Name / Condition	Duration	Qual Device: INA199A2DCKR INA199B2DCKR INA199C2DCKR INA214BIDCKR	Qual Device: INA214AIDCKR	QBS Product Reference: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
LU	Latch-up	(Per JESD78)	-	-	-	1/6/0	1/6/0	1/12/0
MQ	Manufacturability	(per mfg. Site specification)	-	-	-	1/Pass	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	-	1/Pass	1/Pass	-	3/Pass	-
MSL	Moisture Sensitivity	(level 2 @ 260C peak +0/-5C)	-	-	-	1/12/0	-	-
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	-	-	-	-	1/12/0	-
MSL	Moisture Sensitivity, JEDEC	Level 3-235C	-	-	-	-	-	1/12/0
MSL	Moisture Sensitivity, L2	Elec-1	-	-	3/39/0	-	-	-
PD	Physical Dimensions	(per mechanical drawing)	-	-	1/5/0	-	-	-
TC	Temperature Cycle -65/150C	1000 Cycles	-	-	-	-	3/231/0	3/231/0
TC	Temperature Cycle -65/150C	500 Cycles	-	-	3/231/0	-	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hrs/130/85% RH	-	-	3/231/0	-	-	-
VM	Bond Pad Crater Check	Completed	-	-	-	-	3/Pass	-
WBP	Bond Pull	Wires	-	-	-	-	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	-	-	-	-	-	1/50/0
WBS	Wire Bond Shear	Wires	-	-	-	-	3/228/0	-
YLD	Yield Evaluation	(per mfg. Site specification)	1/Pass 1/Pass 1/Pass 1/Pass	1/Pass	-	-	-	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- QBS: Qual By Similarity
- Qual Device INA199B2DCKR is qualified at LEVEL2-260CG
- Qual Device INA199C2DCKR is qualified at LEVEL2-260CG
- Qual Device INA199A2DCKR is qualified at LEVEL2-260CG
- Qual Device INA214AIDCKR is qualified at LEVEL2-260CG
- Qual Device INA214BIDCKR 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/

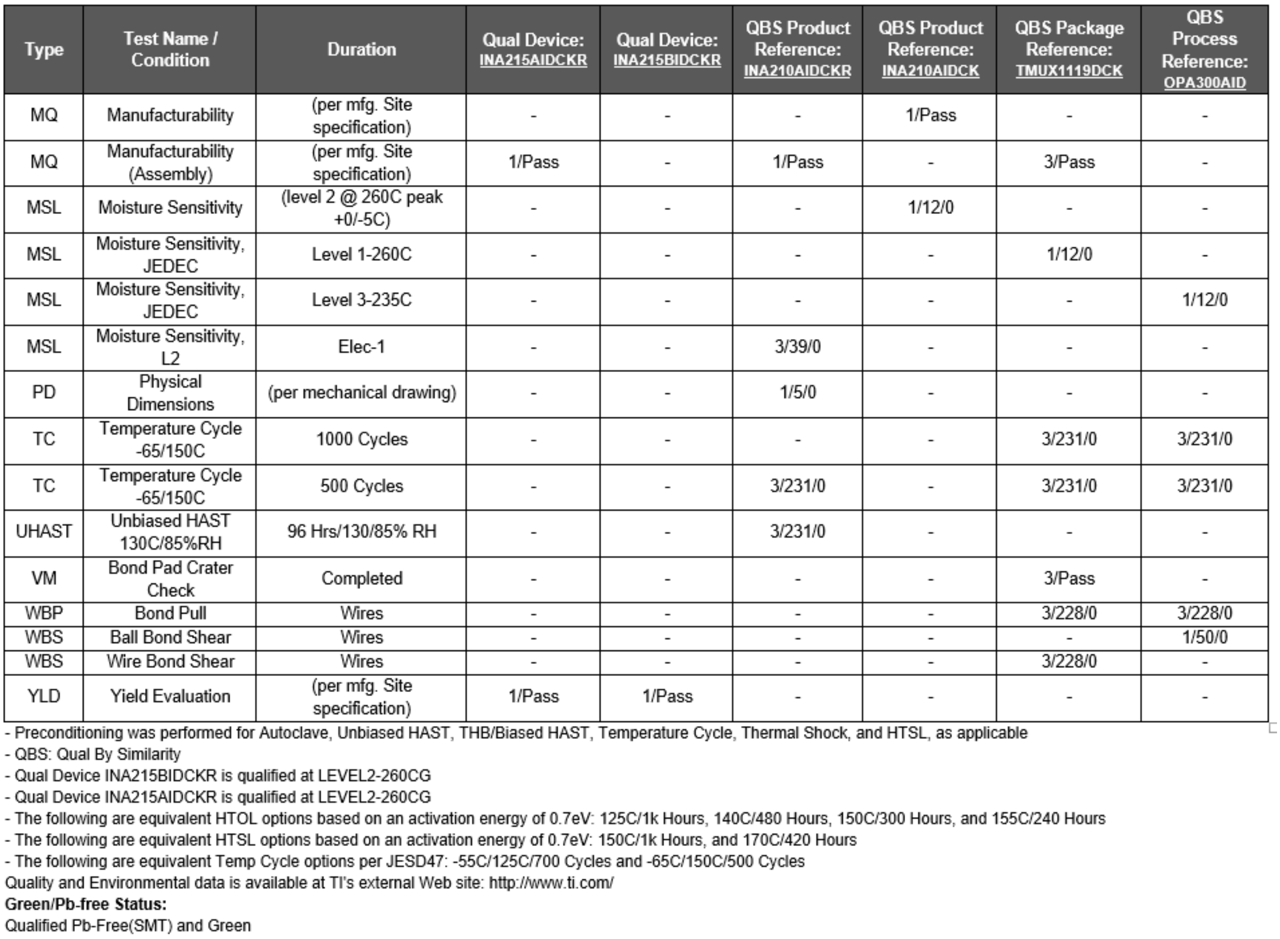
Green/Pb-free Status: Qualified Pb-Free(SMT) and Green

Qualification Report

Approve Date 25-Aug-2021

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

Type	Test Name / Condition	Duration	Qual Device: INA215AIDCKR	Qual Device: INA215BIDCKR	QBS Product Reference: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
-	Pb Free Solderability - Dip and Look	Pb Free/Solderability	-	-	3/66/0	-	-	-
-	Pb Solderability - Dip and Look	Pb/Solderability	-	-	3/66/0	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1000 V	-	-	1/3/0	-	-	1/3/0
CDM	ESD - CDM	2000 V	-	-	-	1/12/0	1/3/0	-
CDM	ESD CDM	500 V	-	-	-	-	-	1/3/0
DS	Die Shear	--	-	-	-	-	-	3/30/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	-	-	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0	3/307/0
HBM	ESD - HBM	6000 V	-	-	-	-	1/3/0	-
HBM	ESD HBM	1000 V	-	-	-	-	-	1/3/0
HBM	ESD HBM	4000 V	-	-	-	-	-	1/3/0
HBM	ESD HBM	500V, 1000V, 1500V, 2000V, 3000V, 4000V (ss=3 per voltage)	-	-	-	1/18/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	3/231/0
HTOL	Life Test, 150C	3000 Hours	-	-	-	-	-	1/116/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/231/0	-	-	3/135/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 170C	600 Hours	-	-	-	-	3/231/0	-
LU	Latch-up	(Per JESD78)	-	-	-	1/6/0	1/6/0	1/12/0



Type	Test Name / Condition	Duration	Qual Device: INA215AIDCKR	Qual Device: INA215BIDCKR	QBS Product Reference: INA210AIDCKR	QBS Product Reference: INA210AIDCK	QBS Package Reference: TMUX1119DCK	QBS Process Reference: OPA300AID
MQ	Manufacturability	(per mfg. Site specification)	-	-	-	1/Pass	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	1/Pass	-	1/Pass	-	3/Pass	-
MSL	Moisture Sensitivity	(level 2 @ 260C peak +0/-5C)	-	-	-	1/12/0	-	-
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	-	-	-	-	1/12/0	-
MSL	Moisture Sensitivity, JEDEC	Level 3-235C	-	-	-	-	-	1/12/0
MSL	Moisture Sensitivity, L2	Elec-1	-	-	3/39/0	-	-	-
PD	Physical Dimensions	(per mechanical drawing)	-	-	1/5/0	-	-	-
TC	Temperature Cycle -65/150C	1000 Cycles	-	-	-	-	3/231/0	3/231/0
TC	Temperature Cycle -65/150C	500 Cycles	-	-	3/231/0	-	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hrs/130/85% RH	-	-	3/231/0	-	-	-
VM	Bond Pad Crater Check	Completed	-	-	-	-	3/Pass	-
WBP	Bond Pull	Wires	-	-	-	-	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	-	-	-	-	-	1/50/0
WBS	Wire Bond Shear	Wires	-	-	-	-	3/228/0	-
YLD	Yield Evaluation	(per mfg. Site specification)	1/Pass	1/Pass	-	-	-	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- QBS: Qual By Similarity
- Qual Device INA215BIDCKR is qualified at LEVEL2-260CG
- Qual Device INA215AIDCKR 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

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Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

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