PCN Number:	20210614000.1	**PCN Date:**	June 14, 2021
Title:	Qualification of new Fab site (FFAB) using qualified Process Technology, Die Revision and additional Assembly site (CDAT) for the THS6212IRHFR/T		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Sept 12, 2021	**Estimated Sample Availability:**	Date provided at sample request.

Change Type:					
☒	Assembly Site	☐	Assembly Process	☒	Assembly Materials
☒	Design	☒	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☒	Wafer Fab Site	☒	Wafer Fab Materials	☒	Wafer Fab Process
		☐	Part number change		

Notification Details

Description of Change:

Texas Instruments is pleased to announce the qualification of a new Fab site (FFAB) using qualified Process Technology, Die Revision and additional Assembly site (CDAT) for the THS6212IRHFR/T:

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**New Fab Site**	**Process**	**Wafer Diameter**
D-LIN	BICOM2X	150 mm	FFAB	BICOMHD	200 mm

Construction difference are noted below:

	MLA	CARZ	CDAT
Mount Compound	4205846	SID#435143	4223772
Mold Compound	4208625	SID#441086	4222198
MSL	3	2	2

Additionally, as part of the FFAB qualification, there are datasheet modifications necessary. Datasheet changes are as follows:

Changes from Revision D (Novermber 2019) to Revision E (May 2021) **Page**

- Updated the numbering format for tables, figures, and cross-references throughout the document....1
- Changed mid-bias mode value from 17.7 mA to 17.5 mA in *Features* list....1
- Changed low-bias mode value from 12.2 mA to 11.9 mA in *Features* list....1
- Changed voltage noise value from 2.7 nV/√ Hz to 2.5 nV/√ Hz in *Features* list....1
- Changed inverting current noise value from 17 pA/√ Hz to 18 pA/√ Hzin *Features* list....1
- Changed noninverting current noise value from 1.2 pA/√ Hz to 1.4 pA/√ Hzin *Features* list....1
- Changed HD2 distortion from -100 dBc to -86 dBc in *Features* list....1
- Changed HD3 distortion from -89 dBc -101 dBc in*Features* list....1
- Changed output current from > 416 mA to > 665 mA in *Features* list....1
- Changed output swing from 43.2 Vpp to 49 Vpp in *Features* list....1
- Changed bandwidth from 150 MHz to 205 MHz in *Features* list....1
- Changed PSRR from 50 dB to > 55 dB in *Features* list....1
- Changed thermal protection from 170°C to 175°C in *Features* list....1
- Changed differential distortion to HD2 and updated values in *Description* section....1
- Changed output swing from 43.2Vpp to 49Vpp in *Description* section....1
- Changed power supplies from ± 12-V to 28-V in *Description* section....1
- Changed current drive from 416-mA to 650-mA in *Description* section....1
- Removed YS bond pad package from document....1
- Changed *Typical Line-Driver Circuit Using the THS6212* figure....1
- Removed YS die package and *Bond Pad Functions* table....5
- Deleted Output current, IO from Absolute Maximum Ratings....6
- Added Bias control pin voltage in *Absolute Maximum Ratings*....6
- Added Input voltage to all pins except VS+, VS-, and BIAS control in *Absolute Maximum Ratings*....6
- Added Input current limit in *Absolute Maximum Ratings*....6
- Changed Maximum junction, TJ from 130 C to 125 C in *Absolute Maximum Ratings*....6
- Deleted ESD MM in *ESD Ratings*....6
- Changed Operating junction temperature from 130°C to 125°C in Recommended Operating Conditions....6
- Added Minimum ambient operating air temperature spec in *Recommended Operating Conditions*....6
- Changed $R_{\Theta JA}$ from 33.2 °C/W to 42.3 °C/W in *Thermal Information*....6

- Changed $R_{\Theta JC(Top)}$ from 31.7 °C/W to 32.8 °C/W in *Thermal Information* 6
- Changed $R_{\Theta JB}$ from 11.3 °C/W to 20.9 °C/W in *Thermal Information* 6
- Changed ψ_{JT} from 0.4 °C/W to 3.8 °C/W in *Thermal Information* 6
- Changed ψ_{JB} from 11.3 °C/W to 20.9 °C/W in *Thermal Information* 6
- Changed $\psi_{JC(bot)}$ from 3.9 °C/W to 9.5 °C/W in *Thermal Information* 6
- Added Electrical Characteristics: V_S = 12V table 7
- Deleted Electrical Characteristics: VS = ±6 V table 7
- Added Electrical Characteristics: VS = 28V table 9
- Deleted Deleted Electrical Characteristics: VS = ±12 V table 9
- Changed t_{ON} from 1µs to 25ns in *Timing Requirements* 10
- Changed t_{OFF} from 1µs to 275ns in *Timing Requirements* 10
- Added Typical Characteristics: V_S = 12 V 11
- Deleted Typical Characteristics: V_S = ±6 V (Full Bias) 11
- Deleted Typical Characteristics: V_S = ±6 V (Mid Bias) 11
- Deleted Typical Characteristics: V_S = ±6 V (Low Bias) 11
- Added Typical Characteristics: V_S = 28 V 17
- Deleted Typical Characteristics: V_S = ±12 V (Full Bias) 17
- Deleted Typical Characteristics: V_S = ±12 V (Mid Bias) 17
- Deleted Typical Characteristics: V_S = ±12 V (Low Bias) 17
- Changed output swing from 43.2 Vpp to 49 Vpp in *Overview* section 20
- Changed current drive from 416 mA to 650 mA in *Overview* section 20
- Changed thermal protection junction temperature from 170°C to 175°C in *Overview* section 20
- Deleted *Output Current and Voltage* section 20
- Added *Output Voltage and Current Drive* section 20
- Changed referenced figures for R_S versus capacitive load in *Driving Capacitive Loads* section 21
- Changed ±12-V supplies to 28-V supply in *Distortion Performance* section 22
- Changed ±6-V supplies to 12-V supply in *Distortion Performance* section 22
- Changed noise evaluation from Section 8.2.2 to Figure 8-1 in *Differential Noise Performance* section 22
- Added R_S = 50 Ω in *Differential Noise Performance* section 22
- Changed 38.9 nV/√ Hz calculation to 53.3 nV/√ Hz in *Differential Noise Performance* section 22
- Changed 7 nV/√ Hz calculation to 6.5 nV/√ Hz in *Differential Noise Performance* section 22
- Changed output offset calculation to typical rather than worst case in *DC Accuracy and Offset Control* section 24
- Changed quiescent current value from 23 mA to 19.5 mA in *Wideband Current-Feedback Operation* section ... 25
- Changed swing from 1.9 V from either rail to 49 Vpp in *Wideband Current-Feedback Operation* section 25
- Changed current drive from 416 mA to 650 mA in *Wideband Current-Feedback Operation* section 25
- Changed ± 6 V supply to 28 V supply in *Wideband Current-Feedback Operation* section 25
- Changed 140 MHz bandwidth to 285 MHz in *Wideband Current-Feedback Operation* section 25
- Changed *Noninverting Differential I/O Amplifier* figure in *Wideband Current-Feedback Operation* section 25
- Changed *Frequency Response* and *Harmonic Distortion* figures in *Application Curves* section 26
- Changed *Dual-Supply Downstream Driver* figure 27
- Changed supply voltages to ±14 V in *Line Driver Headroom Requirements* section 28
- Changed quiescent current value from 23 mA to 19.5 mA and ±12 V to ±14 V in *Computing Total Driver Power for Line-Driving Applications* 30
- Changed 23 mA to 19.5 mA, 24 V to 28 V and 1003 mW to 11 mW in *Computing Total Driver Power for Line-Driving Applications* 30
- Changed supply range from "±5 V to ±14 V" to "10 V to 28 V" in *Power Supply Recommendations* section 31
- Changed referenced figures for R_S versus capacitive load in *Driving Capacitive Loads* section 32
- Deleted *Wafer and Die Information* section 32
- Changed ±12-V to 28-V in *Layout Guidelines* section 32

Device Family	Change From:	Change To:
THS6212	SBOS758D	SBOS758E

These changes may be reviewed at the datasheet links provided.

http://www.ti.com/product/THS6212

Reason for Change:

These changes are part of our multiyear plan to transition products from our 150-milimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

Anticipated impact on Fit, Form, 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:

Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
D-LIN	DLN	USA	Dallas
FR-BIP-1	**TID**	**DEU**	**Freising**

Die Rev:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
A	**A**

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
MLA	MLA	MYS	Kuala Lumpur
CARZ	CSZ	CHN	Jiangsu
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)

Product Affected:

THS6212IRHFR	THS6212IRHFT	THS6212IRHFT

TI Information
Selective Disclosure

Approve Date 13-May-2021

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

Type	Test Name / Condition	Duration	Qual Device: THS6212IRHFR	QBS Process Reference: OPA2810IDGK	QBS Package Reference: THS6222IRHFR
HTOL	Life Test, 78C[A]	300 Hours	-	-	1/77/0
HTOL	Life Test, 125C	1000 Hours	-	3/231/0	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	3/3000/0	-
ED	Electrical Characterization	Per Datasheet Parameters	1/Pass	3/90/0	1/Pass
HBM	ESD - HBM	2500 V	-	3/9/0	-
HBM	ESD - HBM	3500 V	-	-	1/3/0
HBM	ESD - HBM	4000 V	1/3/0	-	-
CDM	ESD - CDM	1250 V	-	-	1/3/0
CDM	ESD - CDM	1500 V	1/3/0	3/9/0	-
LU	Latch-up	Per JESD78	1/6/0	3/18/0	1/6/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	3/231/0	3/231/0
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	1/77/0	3/231/0	3/231/0

- QBS: Qual By Similarity
- Qual Device THS6212IRHFR is qualified at LEVEL2-260C
- 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

[A] Self heating of die brings Tj up to 150C

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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