

PCN Number:	20201217002.1A		PCN Date:	Jan 26, 2021	
Title:	Qualification of MIHO8 as an additional Fab site option and Datasheet Update for select LBC7 devices				
Customer Contact:	PCN Manager		Dept:	Quality Services	
Proposed 1st Ship Date:	Apr 22, 2021	Estimated Sample Availability:	Date provided at sample request.		
Change Type:					
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Assembly Materials
<input type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>	Wafer Bump Process
<input checked="" type="checkbox"/>	Wafer Fab Site	<input checked="" type="checkbox"/>	Wafer Fab Materials	<input type="checkbox"/>	Wafer Fab Process
		<input type="checkbox"/>	Part number change		

Notification Details

Description of Change:

Texas Instruments is pleased to announce the qualification of its MIHO8 fabrication facility as an additional Wafer Fab source for the selected devices listed in the "Product Affected" section.

Revision A is to announce the **addition** of new devices that were not included on the original PCN notification. The new devices are highlighted in yellow and **bolded** in the product affected section below. The expected first shipment date for the new devices will be 90 days from this notice for these newly added devices only. The proposed 1st ship date of April 26, 2021 still applies for the original set of devices.

Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter
RFAB	LBC7	300 mm	MIHO8	LBC7	200 mm

In addition, the datasheet number will be changing as shown below:

Device Family	Change From:	Change To:
BQ25121A	SLUSDA7	SLUSDA7A
BQ25125	SLUSDL9	SLUSDL9A
BQ25117	SLUSD27	SLUSD27A
BQ25122	SLUSD33	SLUSD33A

Changes from Revision * (April 2018) to Revision A (January 2021)	Page
• Added Safety-Related Certification to Features.....	1
• Added Device Comparison Table.....	3
• Changed Storage Temperature.....	6
• Changed $V_{D(PPM)}$ to V_{DPPM}	8
• Changed $R_{DS(ON_LDO)}$	8
• Changed Figure 8-2	12
• Deleted Update STAT to fault in VIN_UV actions in Fault and Status Condition Responses.....	30
• Changed VIN_UV description.....	36
• Deleted I ² C Address from title.....	39
• Changed reset state from 0100 1010 to 0100 0010.....	47

Changes from Revision * (June 2019) to Revision A (January 2021)	Page
• Added Safety-Related Certification to Features.....	1
• Added Device Comparison table.....	3
• Changed Storage Temperature.....	6
• Changed $R_{DS(ON_LDO)}$	8
• Changed Figure 8-2	12
• Deleted Update STAT to fault in VIN_UV actions in Fault and Status Condition Responses.....	31
• Changed VIN_UV description.....	37
• Deleted I ² C Address from title.....	40

Changes from Revision * (April 2018) to Revision A (January 2021)	Page
• Added Safety-Related Certification to Features.....	1
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• Changed $V_{D(PPM)}$ to V_{DPPM}	8
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• Changed Figure 8-2	12
• Deleted Update STAT to fault in VIN_UV actions in Fault and Status Condition Responses.....	30
• Changed VIN_UV description.....	36
• Deleted I ² C Address from title.....	39

Changes from Revision * (November 2017) to Revision A (January 2021)	Page
• Added Safety-Related Certification to Features.....	1
• Added Device Comparison table.....	3
• Changed Storage Temperature.....	6
• Changed $V_{D(PPM)}$ to $V_{(DPPM)}$	8
• Changed $R_{DS(ON_LDO)}$	8
• Changed Figure 8-2	12
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These changes may be reviewed at the datasheet links provided.

<http://www.ti.com/product/BQ25121A>

<http://www.ti.com/product/BQ25125>

<http://www.ti.com/product/BQ25117>

<http://www.ti.com/product/BQ25122>

Reason for Change:

Continuity of supply and to accurately reflect device characteristics.

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):

None.

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
RFAB	RFB	USA	Richardson
MIH08	MH8	JPN	Ibaraki

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: 39
 ITEM:
LBL: 5A (L)T0:1750

(1P) SN74LS07NSR
 (Q) 2000 (D) 0336
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483S12
 (P)
 (2P) REV: (V) 0033317
 (20L) CS0: SHE (21L) CCO: USA
 (22L) AS0: MLA (23L) ACO: MYS

Product Affected:

BQ25117YFPR	BQ25122YFPT	BQ25601RTWR	BQ25713BRSNT
BQ25117YFPT	BQ25125YFPR	BQ25601RTWT	BQ25713RSNR
BQ25121AYFPR	BQ25125YFPT	BQ25710RSNR	BQ25713RSNT
BQ25121AYFPT	BQ25601DRTWR	BQ25710RSNT	
BQ25122YFPR	BQ25601DRTWT	BQ25713BRSNR	

Qualification Report

Approve Date 16-Oct-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: BQ25125YFPR	QBS Product Reference: BQ25120AYFP	QBS Product Reference: BQ25120F3AYFP	QBS Product Reference: BQ25120YFPR	QBS Product Reference: CD3214A0YKLR	QBS Process Reference: TPS62110RSA
AC	Autoclave 121C	96 Hours	-	-	-	-	-	3/231/0
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	-	-	-	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	-	2/2000/0	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	-	-	3/1881/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/237/0	3/231/0
HBM	ESD - HBM	2500 V	-	-	-	1/3/0	2/6/0	-
HBM	ESD - HBM	4000 V	1/3/0	1/3/0	-	-	-	-
HBM	ESD-HBM	2000 V	-	-	-	-	-	3/9/0
HTOL	Life Test, 140C	480 Hours	-	-	-	-	2/160/0	3/231/0
HTSL	High Temp Bake 170C	420 Hours	-	-	-	-	2/160/0	3/231/0
LU	Latch-up	(Per JESD78)	1/6/0	1/6/0	-	1/6/0	-	3/15/0
SD	Pb Free Surface Mount Solderability	8 Hrs/Steam	-	-	-	-	3/66/0	-
TC	Temp Cycle, -55/125C	700 Cycles	-	-	-	-	3/237/0	-
TC	Temp Cycle, -65/150C	500 Cycles	-	-	-	-	-	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	-	3/240/0	-

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

- QBS: Qual By Similarity

- Qual Device BQ25125YFPR is qualified at LEVEL1-260CG

- 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 30-Oct-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: BQ25117YFP	Qual Device: BQ25121AYFP	Qual Device: BQ25122YFP	QBS Product Reference: BQ25120AYFP	QBS Product Reference: BQ25120YFPR	QBS Product Reference: CD3214A0YKLR	QBS Process Reference: TP S62110RSA
AC	Autoclave 121C	96 Hours	-	-	-	-	-	-	3/231/0
CDM	ESD - CDM	1000 V	-	-	-	-	-	2/6/0	-
CDM	ESD - CDM	1500 V	-	-	-	1/3/0	-	-	-
CDM	ESD - CDM	500 V	-	-	-	-	1/3/0	-	3/9/0
ELFR	ELFR, 125C	48 Hours	-	-	-	-	-	2/2000/0	-
ELFR	ELFR, 140C	48 Hours	-	-	-	-	-	-	3/1881/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	3/237/0	3/231/0
HBM	ESD - HBM	2500 V	-	-	-	-	1/3/0	2/6/0	-
HBM	ESD - HBM	4000 V	-	-	-	1/3/0	-	-	-
HBM	ESD-HBM	2000 V	-	-	-	-	-	-	3/9/0
HTOL	Life Test, 140C	480 Hours	-	-	-	-	-	2/160/0	3/231/0
HTSL	High Temp Bake 170C	420 Hours	-	-	-	-	-	2/160/0	3/231/0
LU	Latch-up	(Per JESD78)	-	-	-	1/6/0	1/6/0	2/12/0	3/15/0
PD	Physical Dimensions	(per mech dwg)	-	-	-	-	-	3/60/0	-
SD	Pb Free Surface Mount Solderability	8 Hrs/Steam	-	-	-	-	-	3/66/0	-
TC	Temp Cycle, -55/125C	700 Cycles	-	-	-	-	-	3/237/0	-
TC	Temp Cycle, -65/150C	500 Cycles	-	-	-	-	-	-	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	-	-	3/240/0	-
MQ	TQ – Testability		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 BQ25122YFP is qualified at LEVEL1-260C
- Qual Device BQ25121AYFP is qualified at LEVEL1-260C
- Qual Device BQ25117YFP is qualified at LEVEL1-260C

- 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 12-Jun-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: BQ25710RSNR	Qual Device: BQ25713BRSNR	Qual Device: BQ25713RSNR	QBS Process Reference: BQ24730RGE	QBS Process Reference: TPS62110RSA	QBS Package Reference: TPS65680RSN
-	High Temp Bake, 150C	1000 Hours	-	-	-	-	-	1/77/0
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0	-
CDM	ESD-CDM	1500 V	1/3/0	-	-	3/9/0	-	-
CDM	ESD-CDM	500 V	-	-	-	3/9/0	3/9/0	-
ED	Electrical Char	Per Datasheet Parameters	1/Pass	-	-	1/Pass	-	1/Pass
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	-	3/1881/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0	3/231/0
HBM	ESD - HBM	1000 V	-	-	-	3/9/0	-	-
HBM	ESD - HBM	2000 V	1/3/0	-	-	-	3/9/0	-
HBM	ESD - HBM	2500 V	-	-	-	3/9/0	-	-
HBM	ESD - HBM	3000V	-	-	-	-	-	2/6/0
HTOL	Life Test, 155C	240 Hours	-	-	-	2/232/0	-	-
HTOL	Life Test, 140C	480 Hours	-	-	-	-	3/231/0	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	3/231/0
HTSL	High Temp Bake, 170C	420 Hours	-	-	-	-	3/231/0	2/154/0
LU	Latch-up (per JESD78)		-	-	-	3/15/0	3/15/0	2/12/0
LU	Latch-up	Per JESD78, 25C	1/6/0	-	-	-	-	-
LU	Latch-up	Per JESD78, 85C	1/6/0	-	-	-	-	-
TC	Temperature Cycle, - 55/125C	700 Cycles	-	-	-	-	-	3/231/0
TC	Temp Cycle, -65/150C	500 Cycles	-	-	-	3/231/0	3/231/0	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	-	-	3/231/0

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

- QBS: Qual By Similarity

- Qual Device BQ25713BRSNR is qualified at LEVEL2-260C

- Qual Device BQ25713RSNR is qualified at LEVEL2-260C

- Qual Device BQ25710RSNR is qualified at LEVEL2-260C

- 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 18-May-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: BQ25710RSNR	Qual Device: BQ25713BRSNR	Qual Device: BQ25713RSNR	QBS Process Reference: BQ24730RGE	QBS Process Reference: TPS62110RSA	QBS Package Reference: BQ25601RTW	QBS Package Reference: TPS65635KRSN
HTOL	Life Test, 155C	240 Hours	-	-	-	2/232/0	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	-	-	3/231/0	-	-
HTOL	Life Test, 155C	240 Hours	-	-	-	1/116/0	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0	-	-
HBM	ESD - HBM	1000 V	-	-	-	3/9/0	-	-	-
HBM	ESD - HBM	2500 V	1/3/0	-	-	3/9/0	-	-	-
HBM	ESD - HBM	2000 V	-	-	-	-	3/9/0	-	-
CDM	ESD - CDM	1000 V	-	-	-	-	-	1/3/0	-
CDM	ESD - CDM	1500 V	1/3/0	-	-	3/9/0	-	-	-
CDM	ESD-CDM	500 V	-	-	-	3/9/0	3/9/0	-	-
ED	Elec Char	Per Datasheet Parameters	1/Pass	-	-	1/Pass	-	1/Pass	1/Pass
LU	Latch-Up	(Per JESD78)	1/6/0	-	-	3/15/0	3/15/0	-	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	-	3/1881/0	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-
HTSL	High Temp Bake 170C	420 Hours	-	-	-	-	3/231/0	-	-
PD	Physical Dimensions	(per mechanical drawing)	-	-	-	-	-	1/5/0	-
SD	Solderability	Steam age, 8 hours	-	-	-	-	-	1/22/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/231/0	3/231/0	1/77/0	-
WBP	Bond Strength	76 ball bonds, min. 3 units	-	-	-	-	-	1/76/0	-

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

- QBS: Qual By Similarity

- Qual Device BQ25713BRSNR is qualified at LEVEL2-260CG

- Qual Device BQ25713RSNR is qualified at LEVEL2-260CG

- Qual Device BQ25710RSNR 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

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
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