

PCN Number:	20220615003.1	PCN Date:	June 16, 2022		
Title:	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, Datasheet update and additional Assembly site/BOM options for select devices				
Customer Contact:	PCN Manager	Dept:	Quality Services		
Proposed 1st Ship Date:	Sep 16, 2022	Sample requests accepted until:	July 16, 2022*		
*Sample requests received after July 16, 2022 will not be supported.					
Change Type:					
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process		
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification		
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling		
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material		
<input checked="" type="checkbox"/>	Wafer Fab Site	<input checked="" type="checkbox"/>	Wafer Fab Materials		
		<input type="checkbox"/>	Part number change		
PCN Details					
Description of Change:					
Texas Instruments is pleased to announce the qualification of a new fab & process technology (RFAB, LBC9) and assembly (MLA) site/BOM options for selected devices as listed below in the product affected section.					
Current Fab Site			New Fab Site		
Fab Site	Process	Wafer Diameter	Fab Site	Process	Wafer Diameter
SFAB	JI1	150 mm	RFAB	LBC9	300 mm
The die was also changed as a result of the process change.					
Construction Differences are as follows:					
Group 1 – BOM option at MLA					
			Current	Additional	
Bond wire Composition/diameter			Au/0.8, 0.96 mil or Cu, 0.96 mil	Cu, 0.8 mil	
Group 2 – MLA as an additional Assembly site					
			Current	Additional	
Bond wire Composition/diameter			Au, 0.96 mil	Cu, 0.8 mil	
Qual details are provided in the Qual Data Section.					
Reason for Change:					
These changes are part of our multiyear plan to transition products from our 150-millimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.					
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	
<input checked="" type="checkbox"/> No Change		<input checked="" type="checkbox"/> No Change		<input checked="" type="checkbox"/> No Change	
IEC 62474					
<input checked="" type="checkbox"/> No Change					

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
SH-BIP-1	SHE	USA	Sherman
RFAB	RFB	USA	Richardson

Die Rev:

Current	New
Die Rev [2P]	Die Rev [2P]
C, -	A

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TI Mexico	MEX	MEX	Aguascalientes
MLA	MLA	MYS	Kuala Lumpur

Sample product shipping label (not actual product label):

(1P) SN74LS07NSR
 (Q) 2000 (D) 0336
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483SI2
 (P)
 (2P) REV: 0033317
 (20L) CSO: SHE (21L) CCO:USA
 (22L) ASO: MLA (23L) ACO: MYS

Product Affected:

Group 1 device list - RFAB/Process migration and BOM Option in MLA:

LF353DR	TL072CDRG4	TL082ACDR	TL082CPWR
LF353DRE4	TL072CPWR	TL082ACDRE4	TL082CPWRG4
TL071CDR	TL072CPWRE4	TL082ACDRG4	TL082IDR
TL071CDRE4	TL072CPWRG4	TL082CDR	TL082IDRE4
TL071CDRG4	TL072IDR	TL082CDRE4	TL082IDRG4
TL072CDR	TL072IDRE4	TL082CDRG4	TL082IPWR
TL072CDRE4	TL072IDRG4		

Group 2 device list - RFAB/Process migration and MLA Assembly site:

TL071ACDR	TL071IDRG4	TL072ACDRG4	TL081CDR
TL071BCDR	TL072ACDR	TL081ACDR	TL081IDR
TL071IDR	TL072ACDRE4	TL081BCDR	

Qualification Report

Approve Date 22-Jun-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TL072HIDR	QBS Process Reference: OPA4990IDR	QBS Package Reference: OPA2990IDR	QBS Package Reference: OPA2991IDR
PC	PreCon Level 1	Level 1-260C	-	-	-	1/160/0
PC	PreCon Level 2	Level 2-260C	-	3/1477/1 (1)	3/990/0	-
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	3/90/0	3/90/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	3/231/0	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	3/231/0	-
AC	Autoclave 121C	96 Hours	-	3/231/5 (3)	-	1/77/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	3/231/0	1/77/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	3/231/0	-
HTSL	High Temp Storage Bake 175C	500 Hours	-	3/231/0	-	-
CDM	ESD - CDM	1500 V	1/3/0	2/6/0	3/9/0	-
HBM	ESD - HBM	2000 V	1/3/0	-	-	-
HBM	ESD - HBM	3000 V	-	3/9/0	3/9/0	-
LU	Latch-up	Per JESD78	1/6/0	3/18/0	6/36/0	-
HTOL	Life Test, 150C	300 Hours	-	3/231/10 (2)	3/231/0	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	1/800/0	-	-
MSL	Automotive Moist Sens. L2	Level 2-260C	-	3/36/0	-	-
WBP	Bond Pull	Wires	1/76/0	3/228/0	3/228/0	-
WBS	Ball Bond Shear	Wires	1/76/0	3/228/0	3/228/0	-

- QBS: Qual By Similarity

- Qual Device TL072HIDR is qualified at LEVEL1-260C

- 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

Note (1): T0 failing units got mixed back in with passing ones for the post-stress test resulting in false fails. See 8D attached to the eQDB

Note (2): Fails due to faulty BI sockets. See 8D attached to the eQDB

Note (3): Fails were due to mechanical damage from mishandling at test. Discounted.

Qualification Report

Approve Date 13-Jul-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TL072HIPWR	QBS Product Reference: OPA2991IDR	QBS Process Reference: OPA4990IDR	QBS Package Reference: OPA2990IPWR
PC	PreCon Level 1	Level 1-260C	1/160/0	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	3/231/0
AC	Autoclave 121C	96 Hours	1/77/0	-	3/231/5 (1)	-
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	-	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/231/0
HTSL	High Temp Storage Bake 175C	500 Hours	-	-	3/231/0	-
HTOL	Life Test, 150C	300 Hours	-	-	3/231/10 (2)	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	1/800/0	-
HBM	ESD - HBM	2500 V	-	1/3/0	-	1/3/0
CDM	ESD - CDM	1500 V	-	1/3/0	2/6/0	1/3/0
LU	Latch-up	Per JESD78	-	1/6/0	3/18/0	1/6/0
MSL	Moisture Sensitivity, L1	Level 1-260C	1/12/0	-	-	-
WBP	Bond Pull	Wires	1/76/0	1/76/0	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	1/76/0	1/76/0	3/228/0	3/228/0

- QBS: Qual By Similarity

- Qual Device TL072HIPWR is qualified at LEVEL1-260C

- 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

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Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

Note (1): Fails were due to mechanical damage from mishandling at test. Discounted.

Note (2): Fails due to faulty BI sockets. See 8D attached to the eQDB.

Qualification Report

Approve Date 27-Jul-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TL071HIDR	QBS Product Reference: TL071HIDVBR	QBS Process Reference: OPA4990IDR	QBS Package Reference: OPA2990IDR	QBS Package Reference: OPA2991IDR
PC	PreCon Level 1	Level 1-260C	-	1/144/0	-	-	1/160/0
PC	PreCon Level 2	Level 2-260C	-	-	3/1477/0	3/990/0	-
ED	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	3/90/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	3/231/0	-
AC	Autoclave 121C	96 Hours	-	-	3/231/5 (1)	-	1/77/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	3/231/0	3/231/0	1/77/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 175C	500 Hours	-	-	3/231/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	3/231/10 (2)	3/231/0	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	1/800/0	-	-
HBM	ESD – HBM	2500 V	-	1/3/0	-	-	-
HBM	ESD – HBM	3000 V	-	-	3/9/0	3/9/0	-
HBM	ESD – HBM	1500 V	-	-	1/3/0	-	-
CDM	ESD – CDM	1500 V	-	1/3/0	2/6/0	3/9/0	-
LU	Latch-up	Per JESD78	-	1/6/0	3/18/0	6/36/0	-
MSL	Moisture Sensitivity	Level 2-260C	-	-	3/36/0	-	-
WBP	Bond Pull	Wires	1/76/0	1/76/0	3/228/0	3/228/0	-
WBS	Ball Bond Shear	Wires	1/76/0	1/76/0	3/228/0	3/228/0	-

- QBS: Qual By Similarity

- Qual Device TL071HIDR is qualified at LEVEL1-260C

- 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

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Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

NOTE (1): Fails were due to mechanical damage from mishandling at test. Discounted.

NOTE (2): Fails due to faulty BI sockets. See 8D attached to the eQDB.

For questions regarding this notice, e-mails can be sent to the contact shown below or your local Field Sales Representative.

Location	E-Mail
WW Change Management Team	PCN_ww_admin_team@list.ti.com

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