

<b>PCN Number:</b>	20210628000.1		<b>PCN Date:</b>	June 29, 2021	
<b>Title:</b>	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, and additional BOM option for 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>	Sept 29, 2021		<b>Estimated Sample Availability:</b>	Date provided at sample request.	
<b>Change Type:</b>					
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Assembly Materials
<input checked="" type="checkbox"/>	Design	<input 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 checked="" type="checkbox"/>	Wafer Fab Process
	<input type="checkbox"/>		Part number change		
<b>PCN Details</b>					
<b>Description of Change:</b>					
Texas Instruments is pleased to announce the qualification of a new fab & process technology (RFAB, LBC9) and BOM option for selected devices as listed below in the product affected section. Construction differences are noted below:					
<b>Current Fab Site</b>			<b>Additional Fab Site</b>		
<b>Current Fab Site</b>	<b>Process</b>	<b>Wafer Diameter</b>	<b>Additional Fab Site</b>	<b>Process</b>	<b>Wafer Diameter</b>
SFAB	HCMOS	150 mm	RFAB	LBC9	300 mm
The die was also changed as a result of the process change.					
Additionally, there will be a BOM option introduced for these devices:					
		<b>Current</b>	<b>Additional</b>		
	Bond wire diameter (Cu)	0.96 mils	0.8 mils		
<b>Reason for Change:</b>					
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.					
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>					
None					
<b>Anticipated impact on Material Declaration</b>					
<input checked="" type="checkbox"/>	No Impact to the Material Declaration	<input type="checkbox"/>	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 from the <a href="#">TI ECO website</a> .		
<b>Changes to product identification resulting from this PCN:</b>					
<b>Fab Site Information:</b>					
Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City		
SH-BIP-1	SHE	USA	Sherman		
<b>RFAB</b>	<b>RFB</b>	<b>USA</b>	<b>Richardson</b>		
<b>Die Rev:</b>					
<b>Current</b>		<b>New</b>			
Die Rev [2P]	<b>Die Rev [2P]</b>				
E, F, G, H, J, K	<b>A, B</b>				

Sample product shipping label (not actual product label)



TEXAS INSTRUMENTS  
MADE IN: Malaysia  
2DC: 20:



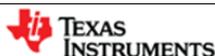
MSL 2 /260C/1 YEAR SEAL DT  
MSL 1 /235C/UNLIM 03/29/04

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

(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY(1T) 7523483SI2  
(P)  
(2P) REV: (V) 0033317  
(20L) CSO: SHE (21L) C68:USA  
(22L) ASO: MLA (23L) ACO: MYS

**Product Affected:**

CD74HC00E	SN74HC02N	SN74HC14DBR	SN74HC32NE4
CD74HC00EE4	SN74HC02NE4	SN74HC14N	SN74HC365NSR
CD74HC02E	SN74HC04N	SN74HC14NE4	SN74HC367NSR
CD74HC02EE4	SN74HC04NE4	SN74HC157NSR	SN74HC595ADBR
CD74HC04E	SN74HC08N	SN74HC164N	SN74HC595DBR
CD74HC132E	SN74HC08NE4	SN74HC165DBR	SN74HC595DBRE4
CD74HC132EE4	SN74HC10N	SN74HC165NSR	SN74HC595DBRG4
CD74HC14E	SN74HC10NE4	SN74HC166NSR	SN74HC595NSR
CD74HC14EE4	SN74HC125DBR	SN74HC20N	SN74HC7002N
CD74HC595SM96	SN74HC125N	SN74HC251NSR	SN74HC7002NE4
CD74HC74E	SN74HC125NE4	SN74HC253NSR	SN74HC74N
CD74HC74EE4	SN74HC132N	SN74HC257NSR	SN74HC74NE4
SN74HC00N	SN74HC132NE4	SN74HC27N	SN74HC86N
SN74HC00NE4	SN74HC138NSR	SN74HC32N	SN74HC86NE4



TI Information  
Selective Disclosure

**Qualification Report**

**Enterprise Gatorade BD1&BD2 DB Package Qualification Summary**

Approve Date 14-Jun-2021

**Qualification Results**

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

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC504QDRQ1	QBS Product Reference: SN74HC5125QDRQ1	QBS Product Reference: SN74HC5125QPWRQ1	QBS Process Reference: SN74HC514QPWRQ1	QBS Package Reference: ADS900E
PC	Preconditioning	Level 1-260C	-	-	-	Pass	Pass
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	1/30/0	1/30/0	1/30/0	3/90/0	-
HBM	ESD - HBM	4000V	1/3/0	1/3/0	-	-	-
HBM	ESD - HBM	7000V	-	-	1/3/0	1/3/0	-
CDM	ESD - CDM	1500V	1/3/0	-	-	1/3/0	-
CDM	ESD - CDM	2000V	-	1/3/0	1/3/0	-	-
LU	Latch-up	(Per AEC-Q100-004)	-	1/6/0	1/6/0	1/6/0	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	3/2400/0	-
HTOL	Life Test, 150C	300 Hours	-	-	-	3/231/0	-
AC	Autoclave 121C	96 Hours	-	-	-	3/231/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	3/135/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/231/0	3/222/0

- QBS: Qual By Similarity  
- Devices are is qualified at LEVEL1-260C

### Qualification Results

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

Type	Test Name / Condition	Duration	QBS Package Reference: SN74HC574QDRQ1	QBS Package Reference: TLC320AD77CDBR
PC	Preconditioning	Level 1-260C	Pass	Pass
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	3/90/0	-
CDM	ESD - CDM	2000V	1/3/0	-
HBM	ESD - HBM	8000V	1/3/0	-
LU	Latch-up	(Per AEC-Q100-004)	1/6/0	-
HTOL	Life Test, 150C	300 Hours	1/77/0	-
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-
HTSL	High Temp Storage Bake 150C	1000 Hours	3/135/0	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	3/231/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0

- Devices are qualified at LEVEL1-260C

### Qualification Results

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

Type:	ED	CDM	HBM	LU	
Test Name / Condition:	Electrical Characterization	ESD - CDM	ESD - HBM	Latch-up	
Duration:	(Per Datasheet Parameters)	1000V	2000V	(Per AEC Q100-004)	
Qual Device:	SN74HC125DBR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC14DBR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC595DBR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC595ADBR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	CD74HC595SM96	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC165DBR	Pass	1/3/0	1/3/0	1/6/0

- QBS: Qual By Similarity

- Qual Devices are qualified at LEVEL1-260CG

- 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

### Qualification Report

### Enterprise Gatorade BD1&BD2 N Package Qualification Summary

Approve Date 14-Jun-2021

#### Qualification Results

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

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC886QPWRQ1	QBS Process Reference: SN74HC874QPWRQ1	QBS Package Reference: SN74HC00N	QBS Package Reference: SN74HC04N	QBS Package Reference: SN74HC164N	QBS Package Reference: NE5532P	QBS Package Reference: THVD2410DR	QBS Package Reference: TLC339IN	QBS Package Reference: TLV9052IDR
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	1/30/0	3/90/0	1/30/0	1/30/0	1/30/0	-	-	-	-
CDM	ESD - CDM	1000V	-	-	1/3/0	1/3/0	1/3/0	-	-	-	-
CDM	ESD - CDM	1500V	1/3/0	1/3/0	-	-	-	-	-	-	-
HBM	ESD - HBM	2000V	-	-	-	-	-	-	-	-	-
HBM	ESD - HBM	4000V	1/3/0	-	-	-	-	-	-	-	-
HBM	ESD - HBM	7000V	-	1/3/0	-	-	-	-	-	-	-
LU	Latch-up	(Per AEC Q100-004)	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	-	-	-	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	3/2400/0	-	-	-	-	-	-	-
HTOL	Life Test, 150C	300 Hours	-	3/231/0	-	-	-	3/231/0	-	-	-
AC	Autoclave 121C	96 Hours	-	3/231/0	-	-	-	-	3/231/0	3/231/0	3/231/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	1/77/0	1/77/0	1/77/0	3/231/0	-	-	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	3/135/0	-	-	-	-	-	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	-	-	-	3/231/0	-

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC886QPWRQ1	QBS Process Reference: SN74HC874QPWRQ1	QBS Package Reference: SN74HC00N	QBS Package Reference: SN74HC04N	QBS Package Reference: SN74HC164N	QBS Package Reference: NE5532P	QBS Package Reference: THVD2410DR	QBS Package Reference: TLC339IN	QBS Package Reference: TLV9052IDR
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	1/77/0	-	-	-	3/231/0	3/231/0	3/231/0

- QBS: Qual By Similarity

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

Type:		ED	CDM	HBM	LU
Test Name / Condition:		Electrical Characterization	ESD - CDM	ESD - HBM	Latch-up
Duration:		(Per Datasheet Parameters)	1000V	2000V	(Per AEC Q100-004)
Qual Device:	SN74HC14N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	CD74HC14E	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC00N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	CD74HC00E	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC132N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	CD74HC132E	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC164N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC02N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	CD74HC02E	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC125N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC04N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	CD74HC04E	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC74N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	CD74HC74E	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC20N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC10N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC86N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC32N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC08N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC7002N	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC27N	Pass	1/3/0	1/3/0	1/6/0

- QBS: Qual By Similarity
- Qual Devices are qualified at LEVEL1-260CG
- 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

## Qualification Report for Enterprise Gatorade BD1&BD2 NS Package Qualification Summary

Approve Date 14-Jun-2021

### Qualification Results

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

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC253QDRG4Q1	QBS Product Reference: SN74HC257PWR	QBS Process Reference: SN74HC574QPWRQ1	QBS Package Reference: 1P8T245NSR	QBS Package Reference: TL494IDR
PC	Preconditioning	Level 1-260C	-	-	Pass	Pass	Pass
AC	Autoclave 121C	96 Hours	-	-	3/231/0	3/231/0	-
CDM	ESD - CDM	2000V	1/3/0	1/3/0	-	-	-
CDM	ESD - CDM	1500V	-	-	1/3/0	-	-
HBM	ESD - HBM	7000V	1/3/0	1/3/0	1/3/0	-	-
LU	Latch-up	(Per JESD78)	1/6/0	1/6/0	1/6/0	-	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	-	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	3/2400/0	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-	3/231/0
HTOL	Life Test, 150C	300 Hours	-	-	3/231/0	-	-
HTOL	Life Test, 150C	600 Hours	-	-	3/231/0	-	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/135/0	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	3/231/0	-

### Qualification Results

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

Type	Test Name / Condition	Duration	QBS Package Reference: ULQ2003AQDRQ1_RLF
PC	Preconditioning	Level 1-260C	3/735/0
AC	Autoclave 121C	96 Hours	3/231/0
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	Pass
HTSL	High Temp Storage Bake 150C	1000 Hours	1/45/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0

### Qualification Results

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

Type:	ED	CDM	HBM	LU	
Test Name / Condition:	Electrical Characterization	ESD - CDM	ESD - HBM	Latch-up	
Duration:	(Per Datasheet Parameters)	1000V	2000V	(Per AEC Q100-004)	
Qual Device:	SN74HC166NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC367NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC251NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC253NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC257NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC165NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC138NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC365NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC157NSR	Pass	1/3/0	1/3/0	1/6/0
Qual Device:	SN74HC595NSR	Pass	1/3/0	1/3/0	1/6/0

- QBS: Qual By Similarity

- Qual Devices are 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

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