

PCN Number:	20210927002.1		PCN Date:	September 28, 2021	
Title:	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, and additional BOM option for select devices				
Customer Contact:	PCN Manager		Dept:	Quality Services	
Proposed 1st Ship Date:	Dec 26, 2021		Estimated Sample Availability:	Date provided at sample request.	
Change Type:					
<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		
PCN Details					
Description of Change:					
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:					
Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
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:					
		Current	Additional		
	Bond wire diameter (Cu)	0.96 mils	0.8 mils		
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	IEC 62474		
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<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]
A, E, F, G, H, J, -	A

Sample product shipping label (not actual product label)

Product Affected:

CD74HC138E	SN74HC151N	SN74HC273NSR	SN74HC541ANSR
CD74HC138EE4	SN74HC157N	SN74HC273PWR	SN74HC541DBR
CD74HC237E	SN74HC157NE4	SN74HC273PWRG4	SN74HC541N
CD74HC237EE4	SN74HC165N	SN74HC367N	SN74HC541NE4
CD74HC238E	SN74HC165NE4	SN74HC373N	SN74HC541NSR
CD74HC238EE4	SN74HC166N	SN74HC373NE4	SN74HC541PWR
CD74HC259E	SN74HC174N	SN74HC373NSR	SN74HC573AN
CD74HC273E	SN74HC174NE4	SN74HC373NSRE4	SN74HC573ANE4
CD74HC373E	SN74HC240N	SN74HC373PWR	SN74HC573APWR
CD74HC373EE4	SN74HC240NE4	SN74HC373PWRE4	SN74HC573APWRG4
CD74HC374E	SN74HC240NSR	SN74HC374N	SN74HC573NSR
CD74HC377PWR	SN74HC240NSRE4	SN74HC374NE4	SN74HC574DBR
CD74HC377PWRG4	SN74HC240PWR	SN74HC374NSR	SN74HC574DBRG4
CD74HC541E	SN74HC240PWRG4	SN74HC374PWR	SN74HC574N
CD74HC541EE4	SN74HC241PWR	SN74HC377N	SN74HC574NE4
CD74HC541PWR	SN74HC241PWRE4	SN74HC377NE4	SN74HC574NSR
CD74HC573E	SN74HC251N	SN74HC377NSR	SN74HC574PWR
CD74HC573EE4	SN74HC259N	SN74HC540N	SN74HC574PWRE4
CD74HC574E	SN74HC259NE4	SN74HC540NE4	SN74HC574PWRG4
SN74HC138N	SN74HC273DBR	SN74HC540NSR	SN74HC595N
SN74HC138NE4	SN74HC273N	SN74HC540PWR	SN74HC595NE4
SN74HC139N	SN74HC273NE4	SN74HC540PWRE4	SN74HCT573PWR
SN74HC139NE4			

Qualification Report

Approve Date 14-Sep-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: SN74HC273NSR	Qual Device: SN74HC374NSR	QBS Product Reference: CD74HC377PWR	QBS Product Reference: SN74HC240PWR	QBS Product Reference: SN74HC241PWR	QBS Product Reference: SN74HC273PWR	QBS Product Reference: SN74HC373PWR
CDM	ESD - CDM	1500 V	1/3/0	-	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
HBM	ESD - HBM	5000V	-	-	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0

Qualification Results

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

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC374PWR	QBS Product Reference: SN74HC540PWR	QBS Product Reference: SN74HC541PWR	QBS Product Reference: SN74HC573APWR	QBS Product Reference: SN74HC574PWR	QBS Product Reference: SN74HC1573PWR	QBS Process Reference: SN74HC S245QPWRQ1
AC	Autoclave 121C	96 Hours	-	-	-	-	-	-	1/77/0
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
EC	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	-	-	3/90/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	-	1/77/0
HBM	ESD - HBM	5000V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	-	1/77/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	-	-	1/45/0
LU	Latch-up	(Per JEDEC78)	1/6/0	1/6/0	1/6/0	1/3/0	1/6/0	1/6/0	1/3/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-	-	1/77/0
WBP	Wire Bond Pull	Wires	-	-	-	-	-	-	1/30/0

Qualification Results

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

Type	Test Name / Condition	Duration	QBS Process Reference: SN74HC S273QPWRQ1	QBS Package Reference: 1P8T245NSR	QBS Package Reference: SN74HC253NSR	QBS Package Reference: SN74HC257NSR	QBS Package Reference: ULQ2003AQDRQ1_RLF	QBS Package Reference: ULQ2003AQDRQ1_STDLF
AC	Autoclave 121C	96 Hours	1/77/0	3/231/0	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1500 V	1/3/0	-	1/3/0	-	-	-
EC	Electrical Characterization	Per Datasheet Parameters	No Fails	-	-	-	No Fails	-
HAST	Biased HAST, 130C/85%RH	96 Hours	1/77/0	-	-	-	-	3/231/0
HTOL	Life Test, 150C	300 Hours	1/77/0	-	-	-	-	-
HTOL	Life Test, 150C	408 Hours	-	-	-	-	-	3/231/0
HTSL	High Temp Storage Bake 150C	1000 Hours	1/45/0	-	-	-	1/45/0	1/45/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	3/231/0	-	-	-	-
LU	Latch-up	(Per JEDEC78)	1/6/0	-	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	3/231/0	-	-	3/231/0	3/231/0
WBP	Wire Bond Pull	Wires	1/30/0	-	-	-	-	-
WBS	Wire Bond Shear	Wires	1/30/0	-	-	-	-	-

- QBS: Qual By Similarity
 - Qual Device SN74HC374NSR is qualified at LEVEL1-260C
 - Qual Device SN74HC273NSR 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 JEDEC47: -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 14-Sep-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: SN74HC273DBR	QBS Product Reference: SN74HC273PWR	QBS Product Reference: SN74HC541PWR	QBS Product Reference: SN74HC574PWR	QBS Process Reference: SN74HCS273QPWRQ1	QBS Package Reference: 1M16374QDLREP	QBS Package Reference: 1R16214CDL
AC	Autoclave 121C	96 Hours	-	-	-	-	1/77/0	3/231/0	3/231/0
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	-	-
ED	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	Pass	Pass	Pass
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	1/77/0	-	-
HBM	ESD - HBM	5000V	-	1/3/0	1/3/0	1/3/0	-	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	1/77/0	-	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	1/45/0	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	-	3/231/0	-
LU	Latch-up (JESD78)	(JESD78)	-	1/6/0	1/6/0	1/6/0	1/6/0	-	-
PC	Automotive Preconditioning Level 1 (Level 1-260C)	(Level 1-260C)	-	-	-	-	No Fails	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	1/77/0	3/231/0	4/308/0
WBP	Bond Pull	Wires	1/76/0	-	-	-	-	-	-
WBS	Ball Bond Shear	Wires	1/76/0	-	-	-	-	-	-

Qualification Results

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

Type	Test Name / Condition	Duration	QBS Package Reference: BQ77PL980DL	QBS Package Reference: SN75976A1DL	QBS Package Reference: TLC5920DLR
AC	Autoclave 121C	96 Hours	-	3/231/0	-
ED	Electrical Characterization	Per Data	-	1/Pass	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	4/308/0

- QBS: Qual By Similarity

- Qual Device SN74HC273DBR 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

Qualification Report

Approve Date 14-Sep-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: CD74HC377PWR	Qual Device: SN74HC240PWR	Qual Device: SN74HC241PWR	Qual Device: SN74HC273PWR	Qual Device: SN74HC373PWR	Qual Device: SN74HC374PWR	Qual Device: SN74HC540PWR
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
HBM	ESD - HBM	5000V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
LU	Latch-up	(per JESD78)	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: SN74HC541PWR	Qual Device: SN74HC573APWR	Qual Device: SN74HC574PWR	Qual Device: SN74HCT573PWR	QBS Process Reference: SN74HC5273QPWRQ1	QBS Package Reference: SN74HC5244QPWRQ1
AC	Autoclave 121C	96 Hours	-	-	-	-	1/77/0	1/77/0
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
EC	Electrical Characterization	Cpk>1.67 Room, hot, and cold test	-	-	-	-	3/90/0	3/90/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	1/77/0	1/77/0
HBM	ESD - HBM	5000V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
HTOL	Life Test, 150C	300 Hours	-	-	-	-	1/77/0	1/77/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	1/45/0	1/45/0
LU	Latch-up	(per JESD78)	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0
PC	Automotive Preconditioning Level 1	(Level 1-260C)	-	-	-	-	No Fails	No Fails
TC	Temperature Cycle, - 65/150C	500 Cycles	-	-	-	-	1/77/0	1/77/0

Type	Test Name / Condition	Duration	Qual Device: SN74HC541PWR	Qual Device: SN74HC573APWR	Qual Device: SN74HC574PWR	Qual Device: SN74HCT573PWR	QBS Process Reference: SN74HC5273QPWRQ1	QBS Package Reference: SN74HC5244QPWRQ1
WBP	Wire Bond Pull	Wires	-	-	-	-	1/30/0	1/30/0
WBS	Wire Bond Shear	Wires	-	-	-	-	1/30/0	1/30/0

- QBS: Qual By Similarity

- Qual Device SN74HC241PWR is qualified at LEVEL1-260C
- Qual Device SN74HC574PWR is qualified at LEVEL1-260C
- Qual Device CD74HC377PWR is qualified at LEVEL1-260C
- Qual Device SN74HC373PWR is qualified at LEVEL1-260C
- Qual Device SN74HC240PWR is qualified at LEVEL1-260C
- Qual Device SN74HC540PWR is qualified at LEVEL1-260C
- Qual Device SN74HCT573PWR is qualified at LEVEL1-260CG
- Qual Device SN74HC273PWR is qualified at LEVEL1-260C
- Qual Device SN74HC374PWR is qualified at LEVEL1-260C
- Qual Device SN74HC541PWR is qualified at LEVEL1-260C
- Qual Device SN74HC573APWR 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

Qualification Report

Approve Date 14-Sep-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: SN74HC273N	QBS Product Reference: CD74HC377PWR	QBS Product Reference: SN74HC240PWR	QBS Product Reference: SN74HC241PWR	QBS Product Reference: SN74HC273PWR	QBS Product Reference: SN74HC373PWR	QBS Product Reference: SN74HC374PWR
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
HBM	ESD - HBM	5000V	-	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
LU	Latch-up	(Per JED78)	-	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	-	-	-	-	-	-

Qualification Results

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

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC540PWR	QBS Product Reference: SN74HC541PWR	QBS Product Reference: SN74HC573APWR	QBS Product Reference: SN74HC574PWR	QBS Product Reference: SN74HCT573PWR	QBS Process Reference: SN74HC5273QPWRQ1	QBS Package Reference: SN74HCT540N
AC	Autoclave 121C	96 Hours	-	-	-	-	-	1/77/0	3/231/0
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	-
EC	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	-	Pass	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	1/77/0	-
HBM	ESD - HBM	5000V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	1/77/0	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	-	1/45/0	-

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC540PWR	QBS Product Reference: SN74HC541PWR	QBS Product Reference: SN74HC573APWR	QBS Product Reference: SN74HC574PWR	QBS Product Reference: SN74HCT573PWR	QBS Process Reference: SN74HC5273QPWRQ1	QBS Package Reference: SN74HCT540N
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	-	-	3/231/0
LU	Latch-up	(Per JESD78)	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	-
PC	Preconditioning Level 1	(Level 1-260C)	-	-	-	-	-	No Fails	No Fails
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-	1/77/0	3/231/0

Qualification Results

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

Type	Test Name / Condition	Duration	QBS Package Reference: TPA3122D2N	QBS Package Reference: UC3875N
AC	Autoclave 121C	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	3/231/0	3/231/0

- QBS: Qual By Similarity
 - Qual Device SN74HC273N 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

Qualification Report
Gatorade Expansion 16 pin PDIP
SN74HC138, CD74HC138
SN74HC595, SN74HC139, SN74HC151, SN74HC157
SN74HC165, SN74HC166, SN74HC174, CD74HC237
CD74HC238, SN74HC251, CD74HC259, SN74HC259, SN74HC367

Approve Date 09-Jul-2021

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

Type	Test Name / Condition	Duration	Qual Device: SN74HC595 N	QBS Product Reference: SN74HC137QPWRQ 1	QBS Product Reference: SN74HC138QPWRQ 1	QBS Product Reference: SN74HC139QPWRQ 1	QBS Product Reference: SN74HC151QPWRQ 1	QBS Product Reference: SN74HC157QPWRQ 1	QBS Product Reference: SN74HC165QDRQ 1
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0
CDM	ESD - CDM	1500V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
HBM	ESD - HBM	7000V	-	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	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	1/6/0

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

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC166QDR Q1	QBS Product Reference: SN74HC174QPWR Q1	QBS Product Reference: SN74HC237QPWR Q1	QBS Product Reference: SN74HC238QPWR Q1	QBS Product Reference: SN74HC251QPWR Q1	QBS Product Reference: SN74HC259QPWR Q1	QBS Product Reference: SN74HC367QPWR Q1
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0
CDM	ESD - CDM	1500V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
HBM	ESD - HBM	7000V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	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	1/6/0	1/6/0

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

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC595QPWRQ1	QBS Process Reference: SN74HC174QPWRQ1	QBS Package Reference: SN74HC595N	QBS Package Reference: TLV9054IDR
ED	Electrical Characterization	Per Datasheet Parameters	-	-	Pass	1/30/0
ED	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	3/90/0	3/90/0	-	-
CDM	ESD - CDM	1500V	-	1/3/0	-	1/3/0
CDM	ESD - CDM	2000V	1/3/0	-	-	-
HBM	ESD - HBM	4000V	-	-	-	1/3/0
HBM	ESD - HBM	9000V	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
ELFR	Early Life Failure Rate, 125C	48 Hours	-	3/2400/0	-	-
HTOL	Life Test, 150C	300 Hours	1/77/0	3/231/0	-	1/77/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	3/231/0
AC	Autoclave 121C	96 Hours	1/77/0	3/231/0	3/225/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	1/77/0	3/231/0	-	3/231/0
HTSL	High Temp Storage Bake 150C	1000 Hours	1/45/0	3/135/0	-	-

Type	Test Name / Condition	Duration	QBS Product Reference: SN74HC595QPWRQ1	QBS Process Reference: SN74HC574QPWRQ1	QBS Package Reference: SN74HC595N	QBS Package Reference: TLV9054IDR
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	3/231/0

- QBS: Qual By Similarity
- Qual Device SN74HC595N is qualified at Not Classified
- 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 JEESD47: -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



TI Information
Selective Disclosure

Qualification Report

Gatorade Expansion 16 Pin PDIP SN74HC138N, CD74HC138N, SN74HC595N, SN74HC139N, SN74HC151N, SN74HC157N, SN74HC165N, SN74HC166N, SN74HC174N, CD74HC237N, CD74HC238N, SN74HC251N, CD74HC259N, SN74HC259N, SN74HC367N

Approve Date 21-Jul-2021

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

Type	Test Name / Condition	Duration	Qual Device: SN74HC138N	QBS Product Reference: SN74HC16507QDRQ1	QBS Product/Process Reference: SN74HC574QPWRQ1	QBS Process Reference: SN74HC595QPWRQ1	QBS Package Reference: L293DNE	QBS Package Reference: SN74HC00N
EC	Electrical Characterization	Cpk>1.67	-	1/30/0	3/90/0	-	-	-
CDM	ESD - CDM	1500 V	-	1/3/0	1/3/0	-	-	-
HBM	ESD - HBM	7000 V	-	1/3/0	1/3/0	-	-	-
LU	Latch-up	(Per AEC-Q100-004)	-	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	1/77/0	-	-
AC	Autoclave 121C	96 Hours	-	-	3/231/0	1/77/0	3/231/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	1/77/0	-	1/77/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/135/0	1/45/0	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	1/77/0	3/225/0	1/77/0
WBP	Wire Bond Pull	Wires	1/76/0	-	-	-	-	-
WBS	Wire Bond Shear	Wires	1/76/0	-	3/231/0	-	-	-

- QBS: Qual By Similarity
- Qual Device SN74HC138N is 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 JEESD47: -55C/125C/700 Cycles and -65C/150C/500 Cycles
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