PCN Number:	20240327004.1	PCN Date:	March 28, 2024
Title:	Qualification of RFAB using qualified Process Technology, Die Change, and additional Assembly site & BOM options		
Customer Contact:	Change Management team	Dept:	Quality Services
Proposed 1st Ship Date:	June 26, 2024	Estimated Sample Availability:	April 27, 2024*

***Sample requests received after April 27, 2024 will not be supported.**

Change Type:

☒	Assembly Site	☒	Design	☐	Wafer Bump Material
☒	Assembly Process	☐	Data Sheet	☐	Wafer Bump Process
☒	Assembly Materials	☐	Part number change	☒	Wafer Fab Site
☐	Mechanical Specification	☐	Test Site	☒	Wafer Fab Materials
☒	Packing/Shipping/ Labeling	☐	Test Process	☒	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the addition of RFAB using the LBC9 qualified process technology and additional Assembly site & BOM options for the device listed below.

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
SH-BIP1	HCMOS	150 mm	RFAB	LBC9	300 mm

The die was also changed as a result of the process change.

Group 1 BOM Table (RFAB/Process migration, die change only):

There is no BOM comparison table for this Group

Group 2 BOM Table (RFAB/Process migration, die change plus TFME as new Assembly site & BOM update

	MLA	TFME
Mount Compound	4147858	**SID# A-03**
Mold Compound	4211471	**SID#R-31**
Bond Wire composition/diameter	Cu, 0.96 or 0.8 mil	**Cu, 0.8 mil**
Lead finish	NiPdAu	**Matte Sn**

Group 3 BOM Table (RFAB/Process migration, die change plus BOM update):

	Current	Additional
Bond Wire composition/diameter	Cu, 0.96 or 0.9 mil	**Cu, 0.8 mil**

Group 4 BOM Table (RFAB/Process migration, die change plus TAI as new Assembly site & BOM update):

TAI does not use any BOM elements that are not used at either ASESH or MLA (Current Assembly sites for this group)

Group 5 BOM Table (RFAB/Process migration, die change plus BOM update):

	Current	Additional
Bond Wire composition/diameter	Au, 0.96 or 1.0 mil	**Cu, 0.8 mil**

Group 6 BOM Table (RFAB/Process migration, die change plus CDAT as new Assembly site & BOM update):

	HFTF	HNA	ASEWH	**CDAT**
Mount Compound	SID# A-03	SID#400180	SID#1120999A2	**4207123**
Mold Compound	SID#R-27	SID#450179	SID#4020039A1	**4222198**
Bond Wire composition/diameter	Cu, 1.0 or 0.8 mil	Au, 0.8 mil	Au, 1.0 mil	**Cu, 0.8 mil**

Group 7 BOM Table (RFAB/Process migration, die change plus MLA/MEX Assembly sites proliferation):

	MLA	**MEX**
Bond Wire composition/diameter	Cu, 0.96 or 0.8 mil	**Cu, 0.8 , 0.9, or 0.96 mil**

Note: For the devices in Group 7, they are currently in either MLA or MEX or both. Upon expiration of this PCN, they will all be qualified at both sites.

Upon expiry of this PCN, there will be a transition period where TI will combine lead free solutions in a single ***standard part number*** For example; ***SN74AHC138PWR*** – can ship with both Matte Sn and NiPdAu.
Example:

- Customer order for 7500 units of SN74AHC138PWR with 2500 units SPQ (Standard Pack Quantity per Reel).

- TI can satisfy the above order in one of the following ways.
  I. 3 Reels of NiPdAu finish.
  II. 3 Reels of Matte Sn finish
  III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.
  IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.

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-milimeter 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**
☒ No Change	☒ No Change	☒ No Change	☒ 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**

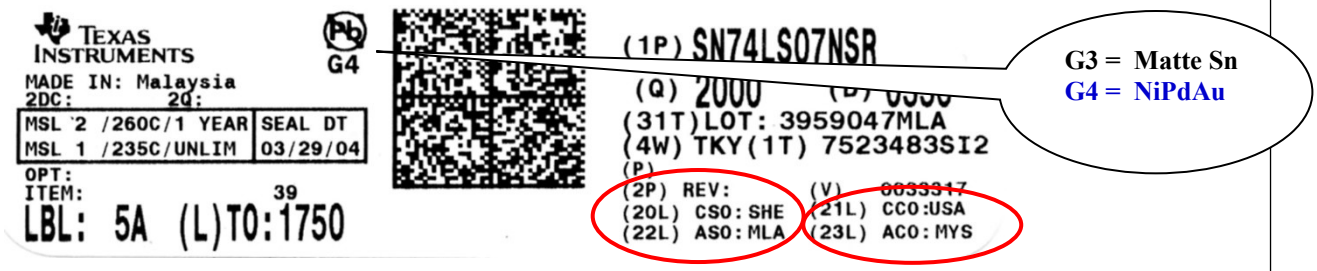
Die Rev:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
A,J,M,K,-	**A**

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
ASESH	ASH	CHN	Shanghai
ASEWH	AWH	CHN	Weihai
HNA	HNT	THA	Ayutthaya
MLA	MLA	MYS	KUALA LUMPUR
TI Mexico	MEX	MEX	Aguascalientes
HFTF	HFT	CHN	Hefei
CDAT	**CDA**	**CHN**	**Chengdu**
TIPI	**PHI**	**PHL**	**Baguio City**
NFME	**NFM**	**CHN**	**Economic Development ZoneA**

Sample product shipping label (not actual product label)



Product Affected:

Group 1 Device List (RFAB/Process migration, die change only):

SN74AC564PWR	SN74ACT244PWRG4	SN74ACT244PWRE4

Group 2 Device List (RFAB/Process migration die change, plus TFME as new Assembly site & BOM update):

SN74AHC138PWR	SN74AHC595PWR	SN74AHCT138PWR	SN74AHCT594PWR
SN74AHC157PWR	SN74AHC594PWR	SN74AHCT157PWR	SN74AHCT595PWR

Group 3 Device List (RFAB/Process migration, die change plus BOM update

SN74AHC595PWRG4	CD74ACT245SM96	SN74ACT245DWR	SN74ACT245DWRE4
SN74AHCT594DBR	SN74AC245DWR	SN74ACT245NSR	SN74ACT245DWRG4
CD74ACT245M96	SN74ACT245DBR	SN74AC245DWRE4	

Group 4 Device List (RFAB/Process migration, die change plus TAI as new

Assembly site & BOM update):

SN74ACT244PWR

Group 5 Device List (RFAB/Process migration, die change plus BOM update):

SN74AC245PWR	SN74ACT245PWR	SN74ACT245PWRG4

Group 6 Device List (RFAB/Process migration, die change plus CDAT as new Assembly site & BOM update):

SN74AHC1G32DCKR

Group 7 Device List (RFAB/Process migration, die change plus MLA/MEX Assembly sites proliferation):

CD74AC138M96	CD74AC175M96	CD74ACT138M96	CD74ACT174M96
CD74AC164M96	CD74AC238M96	CD74ACT164M96	CD74ACT175M96
CD74AC174M96	CD74ACT138E		

For alternate parts with similar or improved performance, please visit the product page on TI.com

R-CHG-2401-078

TEXAS INSTRUMENTS

TI Information
Selective Disclosure

Qualification Report
Approve Date 18-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74AHC138PWR	Qual Device: SN74AHC157PWR	Qual Device: SN74AHC594PWR	QBS Reference: TMUX1308QPWRQ1	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74HCS595QPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	3/231/0	1/77/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	3/231/0	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	3/135/0	1/45/0
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	3/135/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	3/231/0	-	1/77/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	3/2400/0	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	1/15/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	1/15/0	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74AHC138PWR	Qual Device: SN74AHC157PWR	Qual Device: SN74AHC594PWR	QBS Reference: TMUX1308QPWRQ1	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74HCS595QPWRQ1
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	3/30/0	3/30/0
ESD	E2	ESD CDM	-	2000 Volts	-	-	-	1/3/0	-	1/3/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	1/3/0	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	1/3/0	1/3/0	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	5000 Volts	-	-	-	1/3/0	-	-
ESD	E2	ESD HBM	-	9000 Volts	-	-	-	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/3/0	1/3/0	1/3/0	1/6/0	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0	-	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	3/90/0	3/90/0

- Qual Device SN74AHC138PWR is qualified at MSL1 260C
- Qual Device SN74AHC157PWR is qualified at MSL1 260C
- Qual Device SN74AHC594PWR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2401-078

R-CHG-2401-079

TI Information
Selective Disclosure

Qualification Report

Gatorade BD10P5 PCN - 16DB Comm (1Q23) MLA
Approve Date 18-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74AHCT594DBR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SRC4190IDB	QBS Reference: SN74LV8T594QPWRQ1	QBS Reference: PCM1794AQDBRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-	1/77/0	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	3/231/0	-	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	1/77/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	1/77/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	3/135/0	-	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	3/231/0	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	1/45/0	1/45/0
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	-	1/77/0	3/231/0

Type	#	Test Name	Condition	Duration	Qual Device: SN74AHCT594DBR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SRC4190IDB	QBS Reference: SN74LV8T594QPWRQ1	QBS Reference: PCM1794AQDBRQ1
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	-	-	3/2400/0
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	-	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	-	1/10/0	3/30/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	1/3/0	-	1/3/0	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0	-	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	1/6/0	-	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	-	3/90/0	3/90/0

- QBS: Qual By Similarity
- Qual Device SN74AHCT594DBR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2401-079

R-CHG-2402-035

Qualification Report
Approve Date 18-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74AHC138PWR	Qual Device: SN74AHC157PWR	Qual Device: SN74AHC594PWR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74HCS74PWR	QBS Reference: SN74LV8T594PWR	QBS Reference: SN74AHC238PWR	QBS Reference: SN74AHC257PWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	-	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	3/231/0	-	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	3/135/0	3/231/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	3/231/0	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB Solder;	-	-	-	-	-	3/66/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	-	-	3/66/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74AHC138PWR	Qual Device: SN74AHC157PWR	Qual Device: SN74AHC594PWR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74HCS74PWR	QBS Reference: SN74LV8T594PWR	QBS Reference: SN74AHC238PWR	QBS Reference: SN74AHC257PWR
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	-	-	3/15/0	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	-	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	-	-	-	3/9/0	1/3/0	1/3/0	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	-	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	-	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	1/6/0	-	-	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0	-	3/90/0	1/30/0	1/30/0	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	-	-	-	-

- QBS: Qual By Similarity
- Qual Device SN74AHC138PWR is qualified at MSL1 260C
- Qual Device SN74AHC157PWR is qualified at MSL1 260C
- Qual Device SN74AHC594PWR is qualified at MSL1 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/

R-CHG-2308-040

Qualification Report

BD13 HFTF - PCN_DCK
Approve Date 31-AUGUST -2023

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74AHC1G125DCKR	QBS Reference: SN74LV1T34QDCKRQ1	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: TLV70333DBVR	QBS Reference: LM3880MFX-1AA/NOPB	QBS Reference: SN74LV1T125QDCKRQ1	QBS Reference: TL071HIDCKR
HAST	A2	Biased HAST	130C/85%RH	192 Hours	-	-	-	3/231/0	-	-	-
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	1/77/0	3/231/0	-	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	1/77/0	3/231/0	-	-	-	1/77/0
UHAST	A3	Unbiased HAST	130C/85%RH	192 Hours	-	-	-	3/231/0	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-
TC	A4	Temperature Cycle	-65C/150C	1000 Cycles	-	-	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	1/77/0	3/231/0	-	3/231/0	-	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	1/45/0	3/135/0	-	-	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	3/231/0	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-	-	-	-
HTOL	B1	Life Test	150C	300 Hours	-	1/77/0	-	3/231/0	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-	-	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	-	-	-	-	3/228/0	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	-	-	-	-	3/228/0	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	1/15/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB Solder;	-	-	-	-	-	3/66/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	1/15/0	-	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	-	1/22/0	3/66/0	-	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	-	-	3/15/0	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	1/10/0	3/30/0	-	-	1/10/0	-
ESD	E2	ESD CDM	-	250 Volts	-	-	-	1/3/0	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	1/3/0	1/3/0	-	-	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	1/3/0	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0	1/3/0	-	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	-	1/6/0	1/6/0	1/3/0	-	1/6/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-	1/30/0	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	3/90/0	-	-	1/30/0	-
FTY	E6	Final Test Yield	-	-	-	1/1/0	-	-	-	-	-

- QBS: Qual By Similarity
- Qual Device SN74AHC1G125DCKR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2308-040

R-CHG-2308-036

Qualification Report
Approve Date 20-SEPTEMBER-2023

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74AHCT1G00DCKR	QBS Reference: SN74LV1T34QDCKRQ1	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: TLV9061IDBVR	QBS Reference: SN74LV1T125QDCKRQ1	QBS Reference: SN74AHCT1G125DCKR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	1/77/0	3/231/0	3/231/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	1/77/0	3/231/0	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	1/77/0	3/231/0	3/231/0	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	1/45/0	3/135/0	-	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-	-	-
HTOL	B1	Life Test	150C	300 Hours	-	1/77/0	-	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	-	-	-	3/228/0	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	-	-	-	3/228/0	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	1/15/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	1/15/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	-	3/66/0	-	1/22/0
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	-	3/15/0	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	1/10/0	3/30/0	-	1/10/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	1/3/0	1/3/0	-	1/3/0	-
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0	1/3/0	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	-	1/6/0	1/6/0	-	1/6/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	3/90/0	-	1/30/0	-
FTY	E6	Final Test Yield	-	-	-	1/1/0	-	3/3/0	-	-

- QBS: Qual By Similarity
- Qual Device SN74AHCT1G00DCKR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2308-036

R-CHG-2310-017

Qualification Report
Approve Date 19-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74AC138M96	**Qual Device: CD74AC174M96**	Qual Device: CD74AC175M96	**QBS Reference: TLV9022QDRQ1**	QBS Reference: SN74HCS74QPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	-	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	3/135/0	3/135/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	3/231/0	3/231/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	3/2400/0
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0

Type	#	Test Name	Condition	Duration	Qual Device: CD74AC138M96	**Qual Device: CD74AC174M96**	Qual Device: CD74AC175M96	**QBS Reference: TLV9022QDRQ1**	QBS Reference: SN74HCS74QPWRQ1
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	3/30/0
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	1/3/0	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	-	1/3/0	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	1/3/0	1/3/0	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	1/3/0	1/3/0	1/3/0	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	3/90/0

- QBS: Qual By Similarity
- Qual Device CD74AC138M96 is qualified at MSL1 260C
- Qual Device CD74AC174M96 is qualified at MSL1 260C
- Qual Device CD74AC175M96 is qualified at MSL1 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/

TI Qualification ID: R-CHG-2310-017

R-CHG-2309-075

Qualification Report
Approve Date 19-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74AC138M96	Qual Device: CD74AC174M96	Qual Device: CD74AC175M96	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: LM393IDR	QBS Reference: CD74AC138M96	QBS Reference: CD74AC174M96	QBS Reference: CD74AC175M96
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	-	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	3/231/0	-	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	3/135/0	-	-	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	-	3/231/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	3/231/0	3/231/0	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0	3/2400/0	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	-	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	-	-	-	2/6/0	1/3/0	1/3/0	1/3/0

- QBS: Qual By Similarity
- Qual Device CD74AC138M96 is qualified at MSL1 260C
- Qual Device CD74AC174M96 is qualified at MSL1 260C
- Qual Device CD74AC175M96 is qualified at MSL1 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/

TI Qualification ID: R-CHG-2309-075

R-CHG-2311-037

Qualification Report

GATORADE BD15 - 14D_MLA Qual Driver CD74AC164M96 in MLA using 14-pin D pkg
Approve Date 19-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74AC164M96	Qual Device: CD74ACT164M96	QBS Reference: TLV9022QDRQ1	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: LM393DR	QBS Reference: CD74AC175M96
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	3/231/0	3/231/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	3/135/0	-	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	-	3/231/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: CD74AC164M96	Qual Device: CD74ACT164M96	QBS Reference: TLV9022QDRQ1	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: LM393DR	QBS Reference: CD74AC175M96
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	-	-	3/15/0	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	3/30/0	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	1/3/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0	1/3/0	-	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	1/6/0	1/6/0	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	-	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	3/90/0	-	-

- QBS: Qual By Similarity
- Qual Device CD74AC164M96 is qualified at MSL1 260C
- Qual Device CD74ACT164M96 is qualified at MSL1 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/

TI Qualification ID: R-CHG-2311-037

R-CHG-2311-038

TI Information
Selective Disclosure

Qualification Report

GATORADE BD15 - 14D_FMX Qual Driver CD74AC164M96 in FMX using 14-pin D pkg
Approve Date 19-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74AC164M96	Qual Device: CD74ACT164M96	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: LM393BIDR	QBS Reference: CD74AC164M96	QBS Reference: CD74ACT164M96
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	3/231/0	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	-	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	3/2400/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: CD74AC164M96	Qual Device: CD74ACT164M96	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: LM393BIDR	QBS Reference: CD74AC164M96	QBS Reference: CD74ACT164M96
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	-	-	2/6/0	1/3/0	-
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	2/6/0	1/3/0	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	1/6/0	2/6/0	1/3/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	3/90/0	1/30/0	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	-	-	-
FTY	E6	Final Test Yield	-	-	-	-	-	1/1/0	-	-

- QBS: Qual By Similarity
- Qual Device CD74AC164M96 is qualified at MSL1 260C
- Qual Device CD74ACT164M96 is qualified at MSL1 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/

TI Qualification ID: R-CHG-2311-038

R-CHG-2309-076

Qualification Report

GATORADE BD15 - 16N_MLA Qual Driver CD74ACT138E in MLA using 16-pin N pkg
Approve Date 19-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74ACT138E	QBS Reference: SN74HC595N	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: LM2594HVN-ADJ/NOPB
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	-	3/231/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	-	-	-	3/228/0
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	-	-	-	3/228/0
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-

Type	#	Test Name	Condition	Duration	Qual Device: CD74ACT138E	QBS Reference: SN74HC595N	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: LM2594HVN-ADJ/NOPB
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-
SD	C3	PB-Free Solderability	8 Hours Steam Age	-	-	3/66/0	-	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	-	3/15/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	1/6/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	-

- QBS: Qual By Similarity
- Qual Device CD74ACT138E is qualified at NOT CLASSIFIED 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 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/

TI Qualification ID: R-CHG-2309-076

R-CHG-2310-016

Qualification Report

GATORADE BD15 - 16N_FMX Qual CD74ACT138E in FMX using 16-pin N pkg
Approve Date 19-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74ACT138E	QBS Reference: NE5532P	QBS Reference: SN74HC595N	QBS Reference: TLC339IN	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: CD74ACT138E
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-	-	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	3/231/0	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	3/231/0	3/231/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	3/135/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	3/231/0	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	3/231/0	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	3/2400/0	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	1/15/0	-
SD	C3	PB-Free Solderability	8 Hours Steam Age	-	-	3/66/0	3/66/0	3/66/0	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	-	3/30/0	-
ESD	E2	ESD CDM	-	250 Volts	-	-	-	-	-	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-	1/6/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	1/30/0	-	-	1/30/0

Type	#	Test Name	Condition	Duration	Qual Device: CD74ACT138E	QBS Reference: NE5532P	QBS Reference: SN74HC595N	QBS Reference: TLC339IN	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: CD74ACT138E
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	-	3/90/0	-

- QBS: Qual By Similarity
- Qual Device CD74ACT138E is qualified at NOT CLASSIFIED 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 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/

TI Qualification ID: R-CHG-2310-016

R-CHG-2306-036

Qualification Report

BD16_20PW_TAI
Approve Date 06-MARCH -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74ACT244PWR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: MSP430FR2355TDBT	QBS Reference: SN74AC244QPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	1/77/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	1/77/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	3/135/0	3/231/0	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	1/45/0
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	-	1/77/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74ACT244PWR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: MSP430FR2355TDBT	QBS Reference: SN74AC244QPWRQ1
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	-	1/22/0	-
PD	C4	Physical Dimensions	(per mechanical drawing)	-	-	-	1/5/0	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	-	1/10/0
ESD	E2	ESD CDM	-	250 Volts	-	-	1/3/0	-
ESD	E2	ESD CDM	-	500 Volts	-	1/3/0	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	1/6/0	-	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	-	1/30/0

- QBS: Qual By Similarity
- Qual Device SN74ACT244PWR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2306-036

R-CHG-2306-037

Qualification Report
Approve Date 11-DECEMBER -2023

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74AC244PWR	Qual Device: SN74AC373PWR	Qual Device: SN74AC573PWR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74LV8T245QPWRQ1	QBS Reference: SN74AC244QWRKSRQ1	QBS Reference: SN74AC373DWR	QBS Reference: SN74ACT564DWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	1/77/0	1/77/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	-	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	1/77/0	1/77/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	1/77/0	1/77/0	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	3/135/0	-	-	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	-	1/45/0	1/45/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	3/231/0	-	-	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	-	1/77/0	1/77/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	-	-	-	-	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	1/10/0	1/10/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74AC244PWR	Qual Device: SN74AC373PWR	Qual Device: SN74AC573PWR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74LV8T245QPWRQ1	QBS Reference: SN74AC244QWRKSRQ1	QBS Reference: SN74AC373DWR	QBS Reference: SN74ACT564DWR
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	1/3/0	-	-	-	1/3/0	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	-	1/3/0	1/3/0	1/3/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	1/3/0	1/3/0	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	1/6/0	1/6/0	1/6/0	1/3/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0	-	-	-	1/30/0	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	3/90/0	2/60/0	-	-

- QBS: Qual By Similarity
- Qual Device SN74AC244PWR is qualified at MSL1 260C
- Qual Device SN74AC373PWR is qualified at MSL1 260C
- Qual Device SN74AC573PWR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2306-037

R-CHG-2309-067

Qualification Report

Gatorade BD17 - PW PCN
Approve Date 18-JANUARY -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74AC245PWR	Qual Device: SN74ACT245PWR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74HCS273QPWRQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	3/231/0
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74AC245PWR	Qual Device: SN74ACT245PWR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74HCS273QPWRQ1
ESD	E2	ESD CDM	-	250 Volts	-	1/3/0	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	1/3/0	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	1/3/0	1/6/0	1/6/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	3/90/0

- QBS: Qual By Similarity
- Qual Device SN74AC245PWR is qualified at MSL1 260C
- Qual Device SN74ACT245PWR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2309-067

R-CHG-2309-070

Qualification Report

Gatorade BD17 - DW PCN
Approve Date 18-JANUARY -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74ACT245M96	**Qual Device: SN74ACT245DWR**	Qual Device: SN74AC245DWR	**QBS Reference: SN74HCS74QPWRQ1**	QBS Reference: SN74HCS74QDRQ1	**QBS Reference: SN74HC245DWR**	QBS Reference: SN74ACT245PWR	**QBS Reference: SN74AHCT244QDWRQ1**
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	3/231/0	-	-	3/231/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	3/231/0	1/77/0	-	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	3/135/0	3/135/0	-	-	-
HTSL	A6	High Temperature Storage Life	175C	500 Hours	-	-	-	-	-	-	-	3/135/0
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	3/231/0	1/77/0	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0	-	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	3/45/0	-	-	3/45/0
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	3/45/0	-	-	3/45/0
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	3/30/0	-	-	3/30/0
ESD	E2	ESD CDM	-	250 Volts	-	-	1/3/0	-	-	1/3/0	1/3/0	-
ESD	E2	ESD CDM	-	500 Volts	-	-	-	1/3/0	1/3/0	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: CD74ACT245M96	**Qual Device: SN74ACT245DWR**	Qual Device: SN74AC245DWR	**QBS Reference: SN74HCS74QPWRQ1**	QBS Reference: SN74HCS74QDRQ1	**QBS Reference: SN74HC245DWR**	QBS Reference: SN74ACT245PWR	**QBS Reference: SN74AHCT244QDWRQ1**
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	1/3/0	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	1/6/0	1/6/0	-	1/3/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0	-	-	-	1/30/0	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	3/90/0	-	-	-

- QBS: Qual By Similarity
- Qual Device CD74ACT245M96 is qualified at MSL1 260C
- Qual Device SN74ACT245DWR is qualified at MSL1 260C
- Qual Device SN74AC245DWR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2309-070

R-CHG-2309-071

Qualification Report

Gatorade BD17 - NS PCN
Approve Date 19-JANUARY -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN74ACT245NSR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74LV14ANSR	QBS Reference: SN74LVC8T245NSR	QBS Reference: SN74ACT245PWR	QBS Reference: SN74AC245DWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	1/77/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	1/77/0	3/231/0	-	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	3/135/0	-	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	3/231/0	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	-	-	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	-	-	1/76/0	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	-	-	1/76/0	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: SN74ACT245NSR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74LV14ANSR	QBS Reference: SN74LVC8T245NSR	QBS Reference: SN74ACT245PWR	QBS Reference: SN74AC245DWR
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	-	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	-	1/3/0	-	1/3/0	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0	-	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	1/6/0	-	-	1/3/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	1/30/0	-	1/30/0	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	-	-	-	-

- QBS: Qual By Similarity
- Qual Device SN74ACT245NSR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2309-071

R-CHG-2309-069

Qualification Report

Gatorade BD17 - DB PCN MLA
Approve Date 31-JANUARY -2024

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: CD74ACT245SM96	Qual Device: SN74ACT245DBR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74LVC8T245DBR	QBS Reference: TPS2074DB	QBS Reference: TRS3243EIDBR	QBS Reference: TCA6416PW	QBS Reference: SN74ACT245PWR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	1/77/0	-	-	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	1/77/0	-	1/77/0	3/231/0	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	1/77/0	3/231/0	1/77/0	3/231/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	-	3/231/0	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	1/77/0	-	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	3/231/0	-	-	-	3/231/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-	-	-	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	-	-	-	-	-	1/76/0	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	-	-	-	-	-	1/76/0	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-	-	-	-	-

Type	#	Test Name	Condition	Duration	Qual Device: CD74ACT245SM96	Qual Device: SN74ACT245DBR	QBS Reference: SN74HCS74QPWRQ1	QBS Reference: SN74LVC8T245DBR	QBS Reference: TPS2074DB	QBS Reference: TRS3243EIDBR	QBS Reference: TCA6416PW	QBS Reference: SN74ACT245PWR
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-	-	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	1/22/0	-	-	-	-	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	3/30/0	-	-	-	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	1/3/0	-	1/3/0	1/3/0	1/3/0
ESD	E2	ESD CDM	-	500 Volts	-	-	1/3/0	-	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	1/3/0	-	-	1/3/0	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	-	1/3/0	-	-	-	-	-
LU	E4	Latch-Up	Per JESD78	-	-	-	1/6/0	1/3/0	-	-	1/3/0	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	1/30/0	-	1/30/0	1/30/0	1/30/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	3/90/0	-	-	-	-	-
FTY	E6	Final Test Yield	-	-	-	-	-	-	-	1/1/0	-	-

- QBS: Qual By Similarity
- Qual Device CD74ACT245SM96 is qualified at MSL1 260C
- Qual Device SN74ACT245DBR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2309-069

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