PCN Number:	20210315001.1	PCN Date:	Mar 16, 2021
Title:	Qualification of new Fab site (MIHO8 or FFAB) 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:	Jun 16, 2021	Estimated Sample Availability:	Date provided at sample request.

Change Type:					
☒	Assembly Site	☐	Assembly Process	☒	Assembly Materials
☒	Design	☒	Electrical Specification	☐	Mechanical Specification
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Process
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Process
☒	Wafer Fab Site	☐	Wafer Fab Materials	☒	Wafer Fab Process
		☐	Part number change		

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab & process technology (MIHO8 or FFAB, LBC7) and assembly (MLA, Clark-AT, CDAT) site/BOM (MLA, CDAT) 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**
DL-LIN	50C21	200 mm	MIHO8	LBC7	200 mm
			FFAB	LBC7	200 mm

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

The datasheets will be changing as a result of the above mentioned changes. The datasheet change details can be reviewed in the datasheet revision history. The link to the revised datasheet is available in the table below.

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
PCA9539	SCPS130G	SCPS130H	http://www.ti.com/product/PCA9539
PCA9554	SCPS128C	SCPS128D	http://www.ti.com/product/PCA9554
PCA9548A	SCPS143F	SCPS143G	http://www.ti.com/product/PCA9548A
PCA9534	SCPS124G	SCPS124H	http://www.ti.com/product/PCA9534
PCA9538	SCPS126F	SCPS126G	http://www.ti.com/product/PCA9538
PCA9535	SCPS129J	SCPS129K	http://www.ti.com/product/PCA9535
PCA9544A	SCPS146F	SCPS146G	http://www.ti.com/product/PCA9544A
PCA9546A	SCPS148G	SCPS148H	http://www.ti.com/product/PCA9546A
PCA9555	SCPS131I	SCPS131J	http://www.ti.com/product/PCA9555
PCA9543A	SCPS169A	SCPS169B	http://www.ti.com/product/PCA9543A
PCA9534A	SCPS141I	SCPS141J	http://www.ti.com/product/PCA9534A
PCA9545A	SCPS147D	SCPS147E	http://www.ti.com/product/PCA9545A
PCA9554A	SCPS127E	SCPS127F	https://www.ti.com/product/PCA9554A

Construction differences are noted below:

Group 4 Device List - FFAB/Process migration & AT/BOM Compare (RGE Package):

	MLA Current	Clark-AT New
Mold Compound	4208625	4222198
Die Attach Material	4205846	4207123

Group 5 Device List - FFAB/Process migration & AT/BOM Compare (DB Package):

	MLA Current	MLA New
Die Attach Material	4147858	4042500

Group 6 Device List - FFAB/Process migration & AT/BOM Compare (RGT and RGV Packages):

	MLA Current	CDAT New
Mold Compound	4208625	4222198
Die Attach Material	4205846	4207123

Group 7 Device List – MIHO8/Process migration & AT/BOM Compare (RGY and RGV Packages):

	MLA Current	CDAT New
Mold Compound	4208625	4222198
Die Attach Material	4205846	4207123

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

Anticipated impact on Material Declaration

☐	No Impact to the Material Declaration	☒	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 TI ECO website.

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
DL-LIN	DLN	USA	Dallas
MIHO8	**MH8**	**JPN**	**Ibaraki**
FR-BIP-1	**TID**	**DEU**	**Freising**

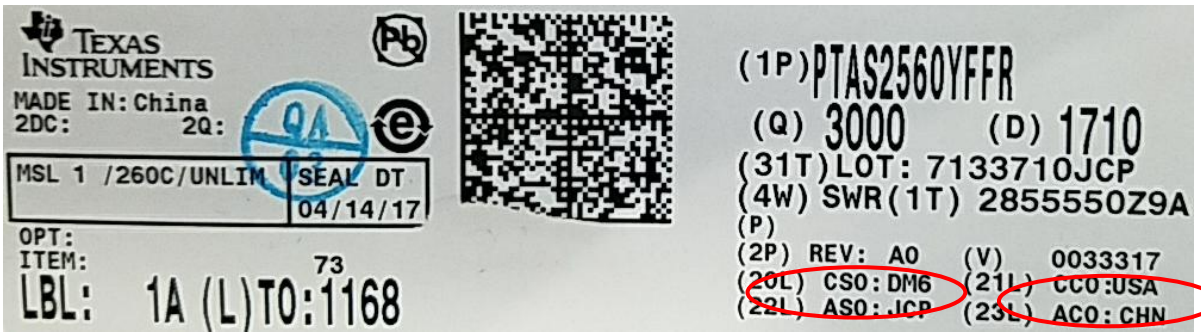
Die Rev:

Current	New
Die Rev [2P]	**Die Rev [2P]**
A, B, -	**A**

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TI MLA	MLA	MYS	Kuala Lumpur
FMX	MEX	MEX	Aguascalientes
TI CLARK	**QAB**	**PHL**	**Angeles City, Pampanga**
TI CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)



Product Affected:

Group 1 Device List (MIHO8/Process migration):			
PCA9543APWR	PCA9544APWRG4	PCA9546APWRE4	PCA9548ARGER
PCA9543APWRG4	PCA9545APWR	PCA9548APWR	
PCA9544APWR	PCA9546APWR	PCA9548APWRG4	

Group 2 Device List (MIHO8/Process migration + MLA A/T site):			
PCA9544APWT	PCA9546ADR	PCA9546APWT	PCA9546APWTG4
PCA9545APWT	PCA9546ADT		

Group 3 Device List (FFAB/Process migration):			
PCA9534APWR	PCA9535PWR	PCA9539PWRG4	PCA9555PWR
PCA9534PWR	PCA9538PWR	PCA9554PWR	PCA9555PWRG4
PCA9534PWRG4	PCA9539PWR	PCA9554PWRG4	

Group 4 Device List (FFAB/Process migration + Clark-AT site & BOM update):			
PCA9535RGER	PCA9539RGER	PCA9555RGER	PCA9555RGERG4

Group 5 Device List (FFAB/Process migration & BOM update):
PCA9555DBR

Group 6 Device List (FFAB/Process migration + CDAT A/T site & BOM update):			
PCA9554ARGTR	PCA9534ARGTR	PCA9534RGVR	PCA9534RGVRG4

Group 7 Device List (MIHO8/Process migration + CDAT A/T site & BOM update):			
PCA9544ARGYR	PCA9545ARGYR	PCA9546ARGVR	

Group 1 (Adding MIHO8 Wafer Fab site) Qual Memo:

Qualification Report

Approve Date 15-May-2020

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

Type	Test Name / Condition	Duration	Qual Device: PCA9543APWR	Qual Device: PCA9544APWR	Qual Device: PCA9545APWR	Qual Device: PCA9546APWR	Qual Device: PCA9548ARGER	QBS Product Reference : TCA9543APWR	QBS Product Reference : TCA9544APWR	QBS Product Reference : TCA9545APWR	QBS Product Reference : TCA9546APWR	QBS Product Reference : TCA9548APWR	QBS Process Reference: TPS62110RSA
AC	Autoclave 121C	96 Hours	-	-	-	-	-	-	-	-	-	-	3/231/0
CDM	ESD - CDM	1500 V	-	-	-	-	-	1/3/0	1/3/0	1/4/0	1/3/0	1/3/0	-
ED	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	-	Pass	Pass	Pass	Pass	Pass	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	-	-	-	-	-	-	-	3/1881/0
HAST	Biased HAST, 130C/85% RH	96 Hours	-	-	-	-	-	-	-	-	-	-	3/231/0
HBM	ESD - HBM	4000 V	-	-	-	-	-	1/3/0	-	1/3/0	1/3/0	1/3/0	-
HBM	ESD - HBM	4500 V	-	-	-	-	-	-	1/3/0	-	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	-	-	-	-	-	-	-	-	3/231/0
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	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-	-	-	-	-	-	3/231/0
TS	Thermal Shock, -65/150C	500 Cycles	-	-	-	-	-	-	-	-	-	-	3/231/0

- QBS: Qual By Similarity
- Qual Devices PCA9543APWR,PCA9545APWR, PCA9544APWR, and PCA9546APWR are qualified at LEVEL1-260C
- Qual Device PCA9548ARGER is qualified at LEVEL2-260C

- 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 19-May-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: PCA9458APWR	QBS Product Reference: TCA9548APWR	QBS Process Reference: TPS62110RSA	QBS Package Reference: ADS8332IBPW	QBS Package Reference: SN75976A1DGG	QBS Package Reference: TPS51117PW
AC	Autoclave 121C	96 Hours	-	-	3/231/0	1/77/0	3/231/0	3/231/0
CDM	ESD - CDM	1500 V	-	1/3/0	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	-	-	-	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	3/1881/0	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-	3/120/0	-
HBM	ESD - HBM	4000 V	-	1/3/0	-	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	3/231/0	-	-	-
HTOL	Life Test, 155C	240 Hours	-	-	-	-	3/120/0	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	3/231/0	-	3/231/0	3/231/0
LU	Latch-up	(Per JESD78)	-	1/6/0	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	1/77/0	3/231/0	3/231/0
TS	Thermal Shock, -65/150C	500 Cycles	-	-	3/231/0	-	3/231/0	3/231/0

- QBS: Qual By Similarity
- Qual Device PCA9458APWR 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

Group 2 (Adding MIHO8 Wafer Fab site + MLA A/T site) Qual Memo:

Qualification Report

Approve Date 18-May-2020

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

Type	Test Name / Condition	Duration	Qual Device: PCA9546ADR	QBS Product Reference: TCA9546APWR	QBS Process Reference: TPS62110RSA	QBS Package Reference: ULQ2003AQDRQ1
AC	Autoclave 121C	96 Hours	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1500 V	-	1/3/0	-	-
ED	Electrical Characterization.	(Per Datasheet Parameters)	-	Pass	-	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	3/1881/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	3/231/0
HBM	ESD - HBM	4000 V	-	1/3/0	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	3/231/0
HTOL	Life Test, 140C	480 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	-
LU	Latch-up	(Per JESD78, Class II)	-	1/6/0	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	3/231/0
TS	Thermal Shock, -65/150C	500 Cycles	-	-	3/231/0	-

- QBS: Qual By Similarity
- Qual Device PCA9546ADR 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

Group 3 (Adding FFAB Wafer Fab site) Qual Memo:

Qualification Report

Approve Date 15-May-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: PCA9534APWR	Qual Device: PCA9534PWR	Qual Device: PCA9535PWR	Qual Device: PCA9539PWR	Qual Device: PCA9554PWR	Qual Device: PCA9555PWR	QBS Product Reference: TCA9534APWR	QBS Product Reference: TCA9534PWR	QBS Product Reference: TCA9535PWR	QBS Product Reference: TCA9539PWR	QBS Product Reference: TCA9554APWR	QBS Product Reference: TCA9555PWR	QBS Process Reference: TCA6416PW
AC	Autoclave 121C	96 Hours	-	-	-	-	-	-	-	-	-	-	-	-	3/231/0
CDM	ESD - CDM	1000 V	-	-	-	-	-	-	1/3/0	1/3/0	-	-	1/3/0	-	-
CDM	ESD - CDM	1500 V	-	-	-	-	-	-	-	-	1/3/0	1/3/0	-	1/3/0	-
ED	Electrical Characterization.	Per Datasheet Parameters	-	-	-	-	-	-	Pass	Pass	Pass	Pass	Pass	Pass	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	-	-	-	-	-	-	-	3/231/0
HBM	ESD - HBM	2500 V	-	-	-	-	-	-	1/3/0	1/3/0	-	-	1/3/0	-	-
HBM	ESD - HBM	3000 V	-	-	-	-	-	-	-	-	1/3/0	1/3/0	-	1/3/0	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	-	-	-	-	-	-	-	3/231/0
HTSL	High Temp Storage Bake 150C	1000 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	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-	-	-	-	-	-	-	-	3/231/0

- QBS: Qual By Similarity
- Qual Devices PCA9535PWR, PCA9539PWR, PCA9534PWR, PCA9555PWR, PCA9534APWR, PCA9554PWR 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

Qualification Report

Approve Date 19-May-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: PCA9538PWR	QBS Product Reference: TCA9538PWR	QBS Process Reference: TCA6416PW
AC	Autoclave 121C	96 Hours	-	-	3/231/0
CDM	ESD - CDM	1500 V	-	1/3/0	-
ED	Electrical Characterization.	(Per Datasheet Parameters)	-	Pass	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0
HBM	ESD - HBM	4000 V	-	1/3/0	-
HTOL	Life Test, 150C	300 Hours	-	-	3/231/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/231/0
LU	Latch-up	(Per JESD78)	-	1/6/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0

- QBS: Qual By Similarity
- Qual Device PCA9538PWR 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

Group 4 (Adding FFAB Wafer Fab site + Clark-AT + BOM change) Qual Memo:

Qualification Report

Approve Date 18-May-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: PCA9539RGER	Qual Device: PCA9535RGER	Qual Device: PCA9555RGER	QBS Product Reference: TCA9535PWR	QBS Product Reference: TCA9539PWR	QBS Product Reference: TCA9555PWR	QBS Process Reference: TCA6416PW	QBS Package Reference: BQ9000RSM	QBS Package Reference: TPS63000DRCR	QBS Package Reference: TPS7A4701QRGWRQ1
AC	Autoclave 121C	96 Hours	-	-	-	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0
CDM	ESD - CDM	1500 V	-	-	-	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	-	-	-	-	-	-	3/231/0	3/112/0	-	3/231/0
HBM	ESD - HBM	3000 V	-	-	-	1/3/0	1/3/0	1/3/0	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	-	-	-	-	-	3/231/0
HTOL	Life Test, 140C	480 Hours	-	-	-	-	-	-	-	3/231/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	-	3/231/0	-	-	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	-	-	3/231/0	-	-	1/45/0
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	-	-	-	-
TC	Temperature Cycle - 65/150C	500 Cycles	-	-	-	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0
WBP	Bond Pull	Wires	-	-	-	-	-	-	-	-	3/228/0	-
WBS	Ball Bond Shear	Wires	-	-	-	-	-	-	-	-	3/228/0	-

- QBS: Qual By Similarity
- Qual Devices PCA9535RGER, PCA9555RGER, and PCA9539RGER are qualified at LEVEL2-260C

- 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

Group 5 (Adding FFAB Wafer Fab site + BOM change) Qual Memo:

Qualification Report

Approve Date 18-May-2020

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: PCA9555DBR	QBS Product Reference: TCA9555PWR	QBS Process Reference: TCA6416PW	QBS Package Reference: CLVC4245ADBR	QBS Package Reference: MAX232DR	QBS Package Reference: TL1454ACDBR	QBS Package Reference: TLC320AD77CDBR
AC	Autoclave 121C	96 Hours	-	-	3/231/0	-	-	3/231/0	3/231/0
CDM	ESD - CDM	1500 V	-	1/3/0	-	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	-	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-	3/231/0	-	-
HBM	ESD - HBM	3000 V	-	1/3/0	-	-	-	-	-
HTOL	Life Test, 150C	300 Hours	-	-	3/231/0	-	3/231/0	-	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	3/231/0	-	-	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-	-	3/227/0	3/231/0
LU	Latch-up	(Per JESD78)	-	1/6/0	-	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	1/77/0	-	3/231/0	3/231/0

- QBS: Qual By Similarity
- Qual Device PCA9555DBR 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

Group 6 (Adding FFAB + CDAT A/T site & BOM change) Qual Memo:

Qualification Report

Approve Date 01-Mar-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: PCA9534RGV	Qual Device: PCA9534ARGT	Qual Device: PCA9554ARGT	QBS Process Reference: TCA6416PW	QBS Package Reference: BQ24196RGER	QBS Package Reference: TPS2546QRTERQ1	QBS Package Reference: TPS3850G09DRC
AC	Autoclave 121C	96 Hours	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0
CDM	ESD - CDM	1500 V	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	-	-	-	3/231/0	-	3/231/0	3/231/0
HBM	ESD - HBM	4000 V	1/3/0	1/3/0	1/3/0	-	-	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	3/231/0	-	3/231/0	1/77/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	3/231/0	-	3/148/0	-
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	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0
WBP	Bond Pull	Wires	1/76/0	1/76/0	1/76/0	-	-	-	-
WBS	Ball Bond Shear	Wires	1/76/0	1/76/0	1/76/0	-	-	-	-

- QBS: Qual By Similarity
- Qual Devices PCA9534ARGT, PCA9554ARGT, and PCA9534RGV are qualified at LEVEL2-260C
- 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

Group 7 (Adding MIHO8 + CDAT A/T site & BOM update) Qual Memo:

Qualification Report

Approve Date 04-Mar-2021

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

	Type	Test Name / Condition	Duration	Qual Device: PCA9544ARGY	Qual Device: PCA9545ARGY	Qual Device: PCA9546ARGV	QBS Process Reference: TPS62110RSA	QBS Package Reference: BQ24196RGER	QBS Package Reference: TPS3850G09DRC	QBS Package Reference: TS3A5017QRGYQ1
	AC	Autoclave 121C	96 Hours	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0
	CDM	ESD - CDM	1500 V	1/3/0	1/3/0	1/3/0	-	-	-	-
	ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	-	-	-	-
	ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	3/1881/0	-	-	-
	HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	-	3/231/0	3/231/0
	HBM	ESD - HBM	4000 V	1/3/0	1/3/0	1/3/0	-	-	-	-
	HTOL	Life Test, 125C	1000 Hours	-	-	-	-	-	-	3/231/0
	HTOL	Life Test, 140C	480 Hours	-	-	-	3/231/0	-	-	-
	HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	1/77/0	-
	HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	-	-	3/135/0
	HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/231/0	-	3/231/0	-
	LU	Latch-up	(Per JESD78)	1/6/0	1/6/0	1/6/0	-	-	-	-
	TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0
	TS	Thermal Shock, -65/150C	500 Cycles	-	-	-	3/231/0	-	-	-
	WBP	Bond Pull	Wires	1/76/0	1/76/0	1/76/0	-	3/228/0	-	3/90/0
	WBS	Ball Bond Shear	Wires	1/76/0	1/76/0	1/76/0	-	3/228/0	-	3/90/0

- QBS: Qual By Similarity
- Qual Devices PCA9545ARGY, PCA9546ARGV, and Device PCA9544ARGY are qualified at LEVEL2-260C

- 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

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

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
WW PCN Team	PCN_ww_admin_team@list.ti.com

MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.