

PCN Number:	20220413002.1	PCN Date:	April 14, 2022
Title:	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, Datasheet update and additional Assembly site/BOM options for select devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Jul 14, 2022	Estimated Sample Availability:	Date provided at sample request.
Change Type:			
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material
<input checked="" type="checkbox"/>	Wafer Fab Site	<input checked="" type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Part number change

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab & process technology (RFAB, LBC7) and assembly (HFTF) site/BOM options for selected devices as listed below in the product affected section.

Current Fab Site			New Fab Site		
Fab Site	Process	Wafer Diameter	Fab Site	Process	Wafer Diameter
DL-LIN	C21	150 mm	RFAB	LBC7	300 mm
DL-LIN	C21	200 mm			

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

Construction Differences (Group 1 devices only):

	ASESH	HFTF
Bond wire Composition, diameter	Cu, 1.0 mil	Cu, 0.8 mils
Mold Compound	SID#EN2000763	SID#R-30
Mount Compound	SID#EY1000063	SID#A-18

Devices listed in Group 2 will have no Assembly site or BOM changes.

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.



Changes from Revision G (June 2014) to Revision H (March 2022) **Page**

- Changed all instances of legacy terminology to controller and target where I2C is mentioned.....1
- Deleted the DSBGA (YZP) package information..... 1
- Added the *Simplified Schematic* to the front page..... 1
- Removed packaging information from the *Absolute Maximum Ratings* table..... 4
- Added T_{stg} to the *Absolute Maximum Ratings* table..... 4
- Added the *Thermal Information* table..... 4
- Deleted V_{POR} from the [Electrical Characteristics](#) 5
- Added V_{PORR} and V_{PORF} to the [Electrical Characteristics](#) 5
- Changed the I_{CC} stand by mode current max values for 5.5 V from 1 to 1.8 μA; 3.6 V from 0.9 to 1.2 μA; and 2.7 V from 0.8 to 1 μA in the [Electrical Characteristics](#) 5
- Changed the t_{vd(data)} and t_{vd(ack)} MAX values from: 1 μs to: 3.45 μs in the *Standard Mode* timing..... 6
- Changed the t_{icr}, t_{ocf}, and t_{ocf} MIN values in the *Fast Mode* timing..... 6
- Added the Overview section..... 12
- Added the *Device Functional Modes* section..... 13
- Added *Detailed Design Procedure* section..... 20
- Added *Application Curves* section..... 21
- Added the *Layout* section..... 23

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
PCA9536	SCPS125G	SCPS125H	http://www.ti.com/product/PCA9536

Tube versions of the devices are included in EOL notice PDN# 20220413003.3.

Qual details are provided in the Qual Data Section.

Reason for Change:

These changes are part of our multiyear plan to transition products from our 150-millimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

Impact on Environmental Ratings:

Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.

RoHS	REACH	Green Status	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
DL-LIN	DLN	USA	Dallas
RFAB	RFB	USA	Richardson

Die Rev:

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

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
ASESH	ASH	CHN	Shanghai
HFTFAT	HFT	CHN	Hefei

Sample product shipping label (not actual product label):

TEXAS INSTRUMENTS
 MADE IN: Malaysia
 2DC: 20:
 MS� 2 /260C/1 YEAR SEAL DT
 MS� 1 /235C/UNLIM 03/29/04
 OPT:
 ITEM:
LBL: 5A (L)T0:1750
 (Pb) G4
 (1P) SN74LS07NSR
 (Q) 2000 (D) 0336
 (31T) LOT: 3959047MLA
 (4W) TKY (1T) 7523483SI2
 (P)
 (2P) REV: (V) 0033317
 (20L) CSO: SHE (21L) CCO:USA
 (22L) ASO: MLA (23L) ACO: MYS

Product Affected:

Group 1 Device List (RFAB/Process migration, HFTF Assembly site and BOM update):

PCA9536DGKR	PCA9536DGKRG4
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Group 2 Device List (RFAB/Process migration):

PCA9536DR	PCA9536DRG4
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Qualification Report

Approve Date 13-Jan-2022

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TCA9537DGS	QBS Process Reference: TPS51217DSC	QBS Package Reference: LM5008MM	QBS Package Reference: TPS62842DGR
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	1/30/0	3/60/0	-	-
HAST	Biased HAST 130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0
HBM	ESD - HBM	3000 V (All pins)	1/3/0	-	-	-
HBM	ESD - HBM	4000 V (pins 1-4, 7, 10)	1/3/0	-	-	-
HTOL	Life Test, 135C	635 Hours	-	3/231/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	3/231/0
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	3/231/0	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-
WBP	Bond Pull	wires	1/76/0	-	3/228/0	-
WBS	Ball Bond Shear	wires	1/76/0	-	-	-

- QBS: Qual By Similarity

- Qual Device TCA9537DGS 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 29-Nov-2021

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: PCA9536DGK	QBS Process Reference: TPS51217DSC	QBS Package Reference: LM5008MM	QBS Package Reference: TPS62842DGR
AC	Autoclave 121C	96 Hours	1/77/0	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	3/231/0
HBM	ESD – HBM (All Pins)	3000 V	1/3/0	-	-	-
HBM	ESD – HBM (Pins 1,2,3,5,8)	4000 V	1/3/0	-	-	-
HTOL	Life Test, 135C	635 Hours	-	3/231/0	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	3/231/0
HTSL	High Temp Storage Bake, 170C	420 Hours	1/77/0	3/231/0	3/231/0	3/231/0
LU	Latch-up	(Per JESD78)	1/6/0	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	3/231/0	3/231/0	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-
WBP	Bond Pull	Wires	1/76/0	-	-	-
WBS	Ball Bond Shear	Wires	1/76/0	-	-	-

- QBS: Qual By Similarity

- Qual Device PCA9536DGK 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

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

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

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