


<b>PCN Number:</b>	20231221000.1		<b>PCN Date:</b>	December 22, 2023	
<b>Title:</b>	Qualification of new Process Technology, Die Revision and Assembly BOM options for select devices				
<b>Customer Contact:</b>	Change Management Team		<b>Dept:</b>	Quality Services	
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Mar 21, 2024	<b>Sample requests accepted until:</b>	Jan 21, 2024*		
<b>*Sample requests received after Jan 21, 2024 will not be supported.</b>					
<b>Change Type:</b>					
<input type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Process
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Fab Site
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Material
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input checked="" type="checkbox"/>	Wafer Fab Process
<b>PCN Details</b>					
<b>Description of Change:</b>					
Texas Instruments is pleased to announce the qualification of a new process technology, die revision and Assembly BOM option for selected devices as listed below in the product affected section. Devices will remain on existing assembly sites:					
<b>Material differences:</b>					
	<b>Current</b>		<b>Proposed</b>		
Wafer Fab	RFAB		RFAB		
Wafer Process technology	LBC7		LBC9PLV		
Wire diam, type	1.98mils Cu, 0.96mil Cu		1.98mils Cu, 0.80mil Cu		
The die was also changed as a result of the process change.					
The product datasheet(s) is being updated as summarized below. The following change history provides further details.					
		<b>TPS22976</b> SLVSDE7D – NOVEMBER 2016 – REVISED DECEMBER 2023			
<b>Changes from Revision C (September 2020) to Revision D (December 2023)</b>					<b>Page</b>
• Updated R <sub>ON</sub> for TPS22976 in the <i>Device Comparison Table</i> .....					3
• Updated I <sub>Q,VBIAS</sub> for TPS22976 in the <i>Electrical Characteristics (VBIAS = 5V)</i> .....					4
• Updated R <sub>ON</sub> for TPS22976 in the <i>Electrical Characteristics (VBIAS = 5V)</i> .....					4
• Updated R <sub>ON</sub> for TPS22976 in the <i>Electrical Characteristics (VBIAS = 2.5V)</i> .....					4
• Updated t <sub>OFF</sub> for TPS22976 in the <i>Switching Characteristics (TPS22976)</i> .....					4
• Updated four On-resistance plots for TPS22976 in the <i>Typical DC Characteristics</i> .....					12
• Updated two turnoff time plots for TPS22976 in the <i>Typical AC Characteristics</i> .....					15
The datasheet number will be changing.					
Device Family	Change From:		Change To:		
TPS22976	SLVSDE7C		SLVSDE7D		
These changes may be reviewed at the datasheet links provided. <a href="http://www.ti.com/product/TPS22976">http://www.ti.com/product/TPS22976</a>					
<b>Reason for Change:</b>					
Continuity of supply					
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>					
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:

Die Rev:

Current

New

Die Rev [2P]	Die Rev [2P]
A	A

## Product Affected:

TPS22976DPUR	TPS22976DPUR
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## Qualification Report

Approve Date 09-JUNE -2023

### Qualification Results

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

Type	#	Test Name	Condition	Duration	CDAT Qual Device: TPS22976DPUR	Clark Qual Device: TPS22976DPUR	Clark QBS Reference: SN27614DSGR	Process QBS Reference: TPS61378QWRTFRQ1	CDAT QBS Reference: TPS62140RGTR	Clark QBS Reference: MSP430FR5969JRGZR	CDAT QBS Reference: LMS155DSST
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	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	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	-	-	-	3/231/0
HTOL	B1	Life Test	150C	408 Hours	-	-	-	3/231/0	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0	-	-	-
ESD	E2	ESD CDM	-	1000 Volts	-	-	-	1/3/0	-	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-	-	-	-
ESD	E2	ESD HBM	-	3000 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	-	-	3/90/0	-	-	-

QBS: Qual By Similarity

Qual Device TPS22976DPUR 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>

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.

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