



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20190906000.1

**Qualification of Aizu as an additional Fab site option for select devices
Change Notification / Sample Request**

Date: May 18, 2020

Dear TI Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

The customer should acknowledge receipt of this notification by email within **30** days of the date of receipt. Lack of acknowledgement of this notice within 30 days constitutes customer acceptance of the change.

Samples or additional data to support customer evaluation must be requested within 30 days of receipt of this notification. If samples are requested for evaluation the customer must provide evaluation results within the sample evaluation period indicated on page 3 of this notification. The Sample Evaluation Period begins on the date the customer receives samples from TI.

If the customer approved the change TI can proceed with implementation of the change. The proposed first ship date is shown on page 3.

If the customer does not approve the PCN or the approval response is not provided within the Sample Evaluation Period, TI can implement the change, but the customer may elect to place an order for unchanged product by the Last Time Buy Date for delivery by the Last Time Ship Date. TI cannot guarantee that shipments to the customer after any last time order is delivered will not include the changed material. If the customer places an order with delivery after the Last Time Shipment Date, the order may be fulfilled with changed material or any material processed to TI specifications at that future time.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact your field sales representative.

Sincerely,
PCN Team
SC Business Services

20190906000.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE
SN1702036RSHR
TPS65988DJRSHR

CUSTOMER PART NUMBER
43140298
99056UJS

Technical details of this Product Change follow on the next page(s).

PCN Number:	20190906000.1		PCN Date:	May 18, 2020																			
Title:	Qualification of Aizu as an additional Fab site option for select devices																						
Customer Contact:	PCN Manager		Dept:	Quality Services																			
Proposed 1st Ship Date:	Aug 18, 2020		Sample Eval Period:	180 Days																			
Last Time Buy Date:	Jan 18, 2021		Last Time Ship Date:	Apr 18, 2021																			
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 its AIZU fabrication facility as an additional Wafer Fab source for the selected devices listed in the "Product Affected" section.																							
<table border="1"> <thead> <tr> <th colspan="3">Current Fab Site</th> <th colspan="3">Additional Fab Site</th> </tr> <tr> <th>Current Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> <th>New Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> </tr> </thead> <tbody> <tr> <td>CFAB</td> <td>LBC8LV</td> <td>200mm</td> <td>AIZU</td> <td>LBC8LV</td> <td>200mm</td> </tr> </tbody> </table>						Current Fab Site			Additional Fab Site			Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter	CFAB	LBC8LV	200mm	AIZU	LBC8LV	200mm
Current Fab Site			Additional Fab Site																				
Current Fab Site	Process	Wafer Diameter	New Fab Site	Process	Wafer Diameter																		
CFAB	LBC8LV	200mm	AIZU	LBC8LV	200mm																		
Qual details are provided in the Qual Data Section.																							
Reason for Change:																							
Continuity of supply.																							
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																							
None																							
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																				
CFAB	CU3	CHN	Chengdu																				
AIZU	CU2	JPN	Aizuwakamatsu-shi																				
Sample product shipping label (not actual product label)																							
Product Affected:																							
SN1702036RSHR		TPS65988DJRSHR																					

Qualification Report

Approve Date 22-Aug-2019

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS65988DHRSHR	Qual Device: TPS65988DHRSHR
AC	Autoclave 121C	96 Hours	2/154/0	1/77/0
ED	Electrical Characterization	Per Datasheet Parameters	2/60/0	1/30/0
ELFR	Early Life Failure Rate, 125C	48 Hours	2/1600/0	1/800/0
HAST	Biased HAST, 130C/85%RH	96 Hours	2/154/0	1/77/0
HBM	ESD - HBM	1500 V	2/6/0	1/3/0
CDM	ESD - CDM	1500 V	2/6/0	1/3/0
HTOL	Life Test, 125C	1000 Hours	2/154/0	1/77/0
HTSL	High Temp. Storage Bake, 170C	420, 600 Hours	2/154/0	1/77/0
LU	Latch-up, 25C/75C	(per JESD78)	2/24/0	1/12/0
PC	Preconditioning	Level 3-260C	2/616/0	1/308/0
TC	Temperature Cycle, -65/150C	500, 1000 Cycles	2/154/0	1/77/0
VQR	Visual Quality Reliability Inspection	Post TMCL @ 500cyc	2/Passed	1/Passed
MQ	Manufacturing (Fab)	(per mfg. Site specification)	3/Passed	
MQ	Manufacturing (Assembly)	(per mfg. Site specification)	1/Passed	1/Passed

- QBS: Qual By Similarity

- Qual Device TPS65988DHRSHR is qualified at LEVEL3-260C

- 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 regional contacts shown below, or you can contact 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

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF 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.