PCN Number:	20211116001.1	**PCN Date:**	November 18, 2021
Title:	Qualification of TMSC-F11 as an additional Fab site option and Design and ROM change for BQ27Z561		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Feb 18, 2022	**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		

Notification Details

Description of Change:

Group 1 Devices: Fab Site change Only

Texas Instruments is pleased to announce the qualification of TSMC-F11 as additional Wafer Fab sources for the BQ27Z561 family of devices listed in the Product Affected section. In support of the qualification the devices will undergo a design and ROM change as described below.

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**New Fab Site**	**Process**	**Wafer Diameter**
TSMC-F10 (Fab 10)	0.18UM-TSMC	200mm	TSMC-WFT (Fab 11)	0.18UM-TSMC	200mm

In support of the qualification of TSCM F11 Wafer Fab site, the devices will undergo a minor design and ROM change. The changes and updates are as follows:

1) Added I2C SCL clock-stretch watchdog timeout

2) Hardware Revision register will change from 0x01 to 0x03.

3) ROM visual indicator will change from 9302 to 9303.

Qual details are provided in the Qual Data Section.

Reason for Change:

Continuity of supply and improved device functionality

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

None.

Changes to product identification resulting from this PCN:

Current

Chip Site	Chip Site Origin (20L)	Chip Site Country Code (21L)	Chip Site City
TSMC-F10 (Fab 10)	TSS	CHN	Shanghai

New Fab Site

Chip Site	Chip Site Origin (20L)	Chip Site Country Code (21L)	Chip Site City
TSMC-WFT (Fab 11)	T13	USA	San Jose

Sample product shipping label (not actual product label)

Product Affected:

BQ27Z561YPHR	BQ27Z561YPHR-R1	BQ27Z561YPHT

Qualification Report
Approve Date 25-Jun-2021

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

Type	Test Name / Condition	Duration	Qual Device: BQ27Z561YPHR (FAB 11)	QBS Product Reference: BQ9000RSM	QBS Product Reference: BQ9000RSM	QBS Process Reference: .BQ40Z50RSMR	QBS Process Reference: BQ40Z50RSMR	QBS Process Reference: BQ8030DBT
AC	Autoclave 121C	96 Hours	-	3/231/0	3/231/0	-	-	-
CDM	ESD - CDM	1000 V	-	2/6/0	2/6/0	-	-	1/3/0
CDM	ESD - CDM	1500 V	2/6/0	-	-	3/9/0	3/9/0	1/3/0
HAST	Biased HAST 130C/85%RH	96 Hours	-	3/78/0	4/112/0	-	-	-
HBM	ESD - HBM	1000 V	-	3/9/0	3/9/0	-	-	1/3/0
HBM	ESD - HBM	1500 V	-	2/6/0	-	-	-	1/3/0
HBM	ESD - HBM	2000 V	1/3/0	-	-	-	-	1/3/0
HBM	ESD - HBM	2500 V	2/6/0	-	-	-	-	1/3/0
HBM	ESD - HBM	3000 V	-	-	-	-	-	1/3/0
HBM	ESD - HBM	4000 V	-	-	-	3/9/0	3/9/0	1/3/0
HTOL	Life Test, 125C	1000 hours	1/77/0	-	-	1/77/0	1/77/0	-
HTOL	Life Test, 140C	480 Hours	-	3/231/0	3/231/0	-	-	-
HTOL	Life Test, 155C	240 Hours	-	-	-	-	-	1/77/0
HTSL	High Temp. Storage Bake 170C	420 Hours	-	3/231/0	3/231/0	-	-	-
LU	Latch-up	(Per JESD78, Class I).	3/18/0	-	1/6/0	3/18/0	3/18/0	-
LU	Latch-up	(Per JESD78, Class II)	3/18/0	-	1/6/0	-	-	-
PARAM	Transistor and Diode Parametrics	All Wafers, Standard sites	3/Pass	-	-	1/Pass	1/Pass	-

Type	Test Name / Condition	Duration	Qual Device: BQ27Z561YPHR (FAB 11)	QBS Product Reference: BQ9000RSM	QBS Product Reference: BQ9000RSM	QBS Process Reference: .BQ40Z50RSMR	QBS Process Reference: BQ40Z50RSMR	QBS Process Reference: BQ8030DBT
TC	Temperature Cycle - 65C/150C	500 Cycles	-	3/231/0	3/231/0	-	-	-
WLR	Wafer level Reliability	Per Site Specification	3/Pass	-	-	1/Pass	1/Pass	-
YLD	MPY and Bin Summary	All wafers including baseline	1/Pass	-	-	1/Pass	1/Pass	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- QBS: Qual By Similarity
- Qual Device BQ27Z561YPHR (FAB 11) is qualified at LEVEL1-260C

- 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 16-Sep-2020

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

	Type	Test Name / Condition	Duration	Qual Device: BQ27Z561YPHR (FAB 10)	Qual Device: BQ27Z561YPHR (FAB 11)	QBS Product Reference: BQ27Z561YPHR (FAB 11)	QBS Product Reference: BQ9035YPH	QBS Process Reference: BQ40Z50RSMR	QBS Process Reference: BQ8030DBT	QBS Process Reference: MSP430F5510IRGC
	-	EFR BI 125C	24 Hours	-	-	-	-	-	-	3/2400/0
	-	EFR BI 125C	8 Hours	-	-	-	-	-	-	3/2400/0
	-	ESD - HBM (info only)	3000 V	-	-	-	-	-	-	3/9/0
	-	HAST 130C / 85%RH / Vddmax	96 Hours	-	-	-	-	-	-	3/240/0
	-	High Temperature Op Life 150C Tj	300 Hours	-	-	-	-	-	-	3/240/0
	-	Latch-Up at 25C	+/-200mA & 1.5*Vcc	-	-	-	-	-	-	3/18/0
	-	Latch-Up at 85C	+/-100mA & 1.5*Vcc	-	-	-	-	-	-	3/18/0
	AC	Autoclave 121C	0 Hours	-	-	-	-	-	-	3/240/0
	AC	Autoclave 121C	96 Hours	-	-	-	-	-	-	3/240/0
	CDM	ESD - CDM	1000 V	-	-	-	1/3/0	-	1/3/0	-
	CDM	ESD - CDM	1500 V	-	-	2/6/0	-	3/9/0	-	-
	CDM	ESD - CDM	250 V	-	-	1/3/0	-	-	-	3/9/0
	ED	Electrical Characterization	(Approved by PE)	-	-	-	-	1/Pass	-	-
	ED	Electrical Characterization	Per Datasheet Parameters	-	-	-	1/Pass	-	1/Pass	-
	HBM	ESD - HBM	1000 V	-	-	-	-	-	-	3/9/0
	HBM	ESD - HBM	1000 V # 4-5-6	-	-	-	-	-	1/3/0	-
	HBM	ESD - HBM	1500 V	-	-	-	-	-	-	3/9/0
	HBM	ESD - HBM	2000 V	-	-	1/3/0	1/3/0	-	-	3/15/0
	HBM	ESD - HBM	2500 V	-	-	2/6/0	-	3/9/0	-	1/3/0
	HBM	ESD - HBM	4000 V	-	-	-	-		-	-
	HTOL	Life Test, 125C	1000 hours	-	-	1/77/0	1/77/0	1/77/0	-	-

	Type	Test Name / Condition	Duration	Qual Device: BQ27Z561YPHR (FAB 10)	Qual Device: BQ27Z561YPHR (FAB 11)	QBS Product Reference: BQ27Z561YPHR (FAB 11)	QBS Product Reference: BQ9035YPH	QBS Process Reference: BQ40Z50RSMR	QBS Process Reference: BQ8030DBT	QBS Process Reference: MSP430F5510IRGC
	HTOL	Life Test, 155C	240 Hours	-	-	-	-	-	1/116/0	-
	HTSL	Bake 170C	420 Hours	-	-	-	-	-	-	3/240/0
	HTSL	High Temp Storage Bake 170C	420 hours.	-	-	-	1/77/0	-	-	-
	LU	Latch-up	(Per JESD78)	-	-	-	1/6/0	3/18/0	1/5/0	-
	MQ	Manufacturability (TQ - Testability)	(Approved by Test site)	1/Pass	1/Pass	-	-	-	-	-
	TC	Temp Cycle - 65/150C	500 Cycles	-	-	-	-	-	-	3/240/0
	TC	Temperature Cycle, -55/125C	700 cycles.	-	-	-	1/77/0	-	-	-
	UHAST	Unbiased HAST 130C/85%RH	96 hours.	-	-	-	1/77/0	-	-	-

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- QBS: Qual By Similarity
- Qual Device BQ27Z561YPHR (FAB 10) is qualified at LEVEL1-260C
- Qual Device BQ27Z561YPHR (FAB 11) is qualified at LEVEL1-260C

- 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
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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

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