PCN Number:	20210729000.2	PCN Date:	August 3, 2021
Title:	Qualification of AIZU as an additional Wafer Fab Site option for select PiccoloB devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Feb 3, 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		

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 "Product Affected" section.

Current Site			Additional Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
DP1DM5	F05	200mm	AIZU	F05	200mm

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:

Current

Chip Site	Chip Site Origin (20L)	Chip Site Country Code (21L)	Chip Site City
DP1DM5	DM5	USA	Dallas

Additional

Chip Site	Chip Site Origin (20L)	Chip Site Country Code (21L)	Chip Site City
AIZU	CU2	JPN	Aizuwakamatsu-shi

Sample product shipping label (not actual product label)

Product Affected Group:

KLITE32PAGQR	TMS320F28031PNQ	TMS320F28033PNQ	TMS320F28035PAGQ
TMS320F28030PAGQ	TMS320F28032PAGQ	TMS320F28034PAGQ	TMS320F28035PNQ
TMS320F28030PNQ	TMS320F28032PNQ	TMS320F28034PAGQR	TMS320F28035PAGQ
TMS320F28031PAGQ	TMS320F28033PAGQ	TMS320F28034PNQ	

Automotive Change Qualification Summary
(As per AEC-Q100 and JEDEC Guidelines)

Product Attributes

Attributes	Qual Device: TMS320F28035PNQ
Automotive Grade Level	Grade 1
Operating Temp Range Ta	-40 to +125 C
Product Function	Microprocessor
Die Attributes	-
Wafer Fab Supplier	AIZU
Other Attributes	Refer to CofDC
Package Attributes	-
Assembly Site	PHI
Package Type	LQFP
Package Designator	PN
Ball/Lead Count	80
Package Size (mils)	Refer to datasheet

- QBS: Qual By Similarity
- Qual Device TMS320F28035PNQ is qualified at LEVEL3-260C.

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

	Type	#	Test Spec	Min Lot Qty	SS/ Lot	Test Name / Condition	Duration	Qual Device: TMS320F28035PNQ
Test Group A – Accelerated Environment Stress Tests								
	PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3/260C	3/693/0
	THB	A2	JEDEC JESD22-A101	3	77	Biased Temperature and Humidity, 85C/85%RH	1000 hours	3/231/0
	AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 hours	3/231/0
	TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 cycles	3/231/0
				1	5	Post Temp cycle bond pull	Post 500 cycles	1/5/0
	PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A
	HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 hours	3/231/0
Test Group B – Accelerated Lifetime Simulation Tests								
	HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 hours	3/231/0
	ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 hours	3/2400/0
	EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life, 150C	1000 hours	3/231/0

	Type	#	Test Spec	Min Lot Qty	SS/ Lot	Test Name / Condition	Duration	Qual Device: TMS320F28035PNQ
	EDR	B3	AEC Q100-005	3	77	Write/Erase Endurance prior to B1 and B3	1000 cycles	3/462/0
Test Group C – Package Assembly Integrity Tests								
	WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	-	1/30/0
	WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	-	1/30/0
	SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability >95% Lead Coverage	-	1/15/0
	PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	-	3/30/0
Test Group D – Die Fabrication Reliability Tests								
	EM	D1	JESD61	-	-	Electromigration	EM	Completed Per Process Technology Requirements
	TDDB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	TDDB	Completed Per Process Technology Requirements
	HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	HCI	Completed Per Process Technology Requirements
	NBTI	D4	-	-	-	Negative Bias Temperature Instability	NBTI	Completed Per Process Technology Requirements
	SM	D5	-	-	-	Stress Migration	SM	Completed Per Process Technology Requirements
Test Group E – Electrical Verification Tests								
	HBM	E2	AEC Q100-002	1	3	ESD - HBM	2000V	1/3/0
	CDM	E3	AEC Q100-011	1	3	ESD - CDM	750V	1/3/0
	LU	E4	AEC Q100-004	1	6	Latch-up	125C	1/6/0
	ED	E5	AEC Q100-009	3	30	Electrical Distributions	-	3/90/0

A1 (PC): Preconditioning:
Performed for THB, AC, TC & PTC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:
Grade 0 (or E): -40°C to +150°C
Grade 1 (or Q): -40°C to +125°C
Grade 2 (or T): -40°C to +105°C
Grade 3 (or I) : -40°C to +85°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):
Room/Hot/Cold : HTOL, ED
Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
Room : AC/uHAST

Green/Pb-free Status:
Qualified Pb-Free(SMT) and Green

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