PCN Number:	20170329000	**PCN Date:**	Mar 31, 2017
Title:	TPS1H100BQPWPRQ1/TPS1H100AQPWPRQ1 2nd Fab resource & Roughen LDF change		
Customer Contact:	PCN_ww_admin_team@list.ti.com	**Dept:**	Quality Services
Proposed 1st Ship Date:	Oct 2, 2017	**Estimated Sample Availability:**	Date provided at sample request

Change Type:

☐	Assembly Site	☐	Design	☐	Wafer Bump Site
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process
☐	Mechanical Specification	☐	Test Site	☒	Wafer Fab Site
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials
				☐	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing the qualification for:

- Add 2nd Wafer Fab resource : RFAB. Primary Fab: DMOS5, secondary Fab: RFAB

DMOS5	RFAB
200mm	300mm

- Change from standard LDF 4221240-0001 to roughen LDF 4222484-0002, implemented for both DMOS5 and RFAB

Reason for Change:

- Mitigate capacity shortage in the DMOS5 wafer site.
- Improve delamination performance

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

None

Changes to product identification resulting from this PCN:

Current

Wafer Site	Wafer site code (20L)	Wafer country code (21L)
DMOS5	DM5	USA

New

Wafer Site	Wafer site code (20L)	Wafer country code (21L)
RFAB	RFB	USA

Example shipping label (not actual product label)

Product Affected:

TPS1H100AQPWPRQ1
TPS1H100BQPWPRQ1

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

High Side Driver TPS1H100AQPWPRQ1 and TPS1H100BQPWPRQ1 (PG1.2) RFAB Offload
Grade 1 AEC Q100 Qualification
Approved 23-Feb-2017

Product Attributes

Attributes	Qual Device: TPS1H100AQPWPRQ1	Qual Device: TPS1H100BQPWPRQ1	QBS Product Reference: TPS1H100AQPWPRQ1	QBS Product Reference: TPS1H100BQPWPRQ1	QBS Process Reference: TPS92630QPWPRQ1	QBS Process Reference: TPS92630QPWPRQ1	QBS Process Reference: TPS653853QDCARQ1
Automotive Grade Level	1	1	1	1	1	1	1
Operating Temp Range	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C	-40°C to +125°C
Wafer Fab Supplier	RFAB	RFAB	DMOS5	DMOS5	RFAB	DMOS5	RFAB
Die Revision	A1	A1	A0	A0	A1	A1	A0
Assembly Site	TAI	TAI	TAI	TAI	TAI	TAI	TAI
Package Type	HTSSOP	HTSSOP	HTSSOP	HTSSOP	HTSSOP	HTSSOP	HTSSOP
Package Designator	PWP	PWP	PWP	PWP	PWP	PWP	DCA
Ball/Lead Count	14	14	14	14	16	16	48

- QBS: Qual By Similarity
- Qual Device TPS1H100AQPWPRQ1 is qualified at LEVEL3-260C
- Qual Device TPS1H100BQPWPRQ1 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: TPS1H100AQPWPRQ1	Qual Device: TPS1H100AQPWPRQ1	QBS Product Reference: TPS1H100AQPWPRQ1	QBS Product Reference: TPS1H100BQPWPRQ1	QBS Process Reference: TPS92630QPWPRQ1	QBS Process Reference: TPS92630QPWPRQ1	QBS Process Reference: TPS653853QDCARQ1
Test Group A - Accelerated Environment Stress Test													
PC	A1	JEDEC J-STD-020 JESD22-A113	-	-	Automotive Preconditioning Level 3	Level 3-260C	-	-	-	1/321/0	-	3/738/0	3/969/0
HAST	A2	JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	-	-	-	1/77/0	-	3/231/0	3/231/0
AC	A3	JESD22-A102	3	77	Autoclave 121C	96 Hours	-	-	-	1/77/0	-	3/231/0	3/231/0

	TC	A4	JESD22-A104	3	77	Temperature Cycle, -65/150C	500 Cycles				1/77/0	-		
	TC	A4	JESD22-A104	3	77	Temperature Cycle, -65/150C	1000 Cycles	-	-	-	-	-	3/231/0	3/231/0
	TC-BP	-	MIL-STD883 Method 2011	1	30	Post Temp Cycle Bond Pull	Wires	-	-	-	1/30/0	-	-	-
	PTC	A5	JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000 Cycles	-	-	-	1/45/0	-	1/45/0	1/45/0
	HTSL	A6	JESD22-A103	3	77	High Temp Storage Bake 150C	1000 Hours	-	-	-	1/45/0	-	1/45/0	3/231/0
			Test Group B - Accelerated Lifetime Simulation Test											
	HTOL	B1	JESD22-A108	3	77	Life Test, 125C	1000 Hours	1/77/0	-	1/77/0	3/231/0	1/77/0	3/231/0	5/326/0
	ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	-	-	-	-	-	3/2400/0	3/2062/0
	ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 150C	48 Hours	-	-	-	-	-		1/800/0
	EDR	B3	AEC-Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	-	-	-	-	-	-	-
			Test Group C - Package Assembly Integrity Tests											
	WBS	C1	AEC-Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	Wires	-	-	-	1/30/0	1/30/0	1/30/0	1/30/0
	WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	Wires	-	-	-	1/30/0	1/30/0	1/30/0	1/30/0
	SD	C3	JESD22-B102	1	15	Surface Mount Solderability >95% Lead Coverage	Pb Free	-	-	-	-	-	-	-
	PD	C4	JESD22 B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	-	-	-	-	-	-	-	-
			Test Group D - Die Fabrication Reliability Tests											
	EM	D1	JESD61	-	-	Electromigration	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
	TDDB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
	HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
	NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
	SM	D6	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
			Test Group E – Electrical Verification Tests											
	HBM	E2	AEC Q100-002	1	3	ESD - HBM	2000 V	1/3/0	1/3/0	1/3/0	1/3/0	-	-	-
	HBM	E2	AEC Q100-002	1	3	ESD - HBM	3000 V	1/3/0	1/3/0	-	-	1/3/0	1/3/0	1/3/0
	HBM	E2	AEC Q100-002	1	3	ESD - HBM	4000 V	1/3/0	1/3/0	-	-	-	-	-

	CDM	E3	AEC Q100-011	1	3	ESD - CDM	750 V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
	CDM	E3	AEC Q100-011	1	3	ESD - CDM	1000 V	1/3/0	1/3/0	-	-	-	-	-
	CDM	E3	AEC Q100-011	1	3	ESD - CDM	1500 V	1/3/0	1/3/0					
	LU	E4	AEC Q100-004	1	6	Latch-up	(Per AEC Q100-004)	-	1/6/0	-	1/6/0	1/6/0	1/6/0	1/6/0
	ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67	-	-	1/30/0	3/90/0	3/90/0	3/90/0	3/90/0
			Additional Tests											
	MQ	-	-	-	-	Manufacturability (Auto Assembly)	(per automotive requirement)	1/Pass	-	-	-	1/Pass	-	-
	MQ	-	-	-	-	Manufacturability (Wafer Fab)	(per mfg. Site specification)	1/Pass	-	-	-	1/Pass	-	-
	MSL	-	-	-	-	Moisture Sensitivity	MSL3	-	-	-	-	1/12/0	-	-
	MSL	-	-	-	-	Thermal Path Integrity, JEDEC, L3	Level 3, 260C	-	-	-	-	-	3/36/0	3/43/0

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

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

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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