PCN Number:	20220622000.2	**PCN Date:**	June 28, 2022
Title:	Qualification of DMOS6 as an additional Wafer Fab site option for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Dec 28, 2022	**Sample requests accepted until:**	July 28, 2022

***Sample requests received after (July 28, 2022) will not be supported.**

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 DMOS6 and Chengdu Probe as additional sources.

Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
RFAB	LBC9	300 mm	DMOS6	LBC9	300 mm

Current Probe Site	Additional Probe Site
CLARK-PR	CD-PR (Chengdu)

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:

Current Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
RFAB	RFB	USA	Richardson

New Fab Site:

New Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
DMOS6	**DM6**	**USA**	**Dallas**

Sample product shipping label (not actual product label)

Product Affected:

SN1805032RHBR	TPS25830QWRHBRQ1	TPS25832QWRHBRQ1	TPS25840QWRHBTQ1	TPS25846QWRHBRQ1
SN1805032RHBT	TPS25830QWRHBTQ1	TPS25832QWRHBTQ1	TPS25840QWRHBRQ1	TPS25846QWRHBTQ1
SN2004001RHBR	TPS25831QWRHBRQ1	TPS25833QWRHBRQ1	TPS25842QWRHBRQ1	
SN2004001RHBT	TPS25831QWRHBTQ1	TPS25833QWRHBTQ1	TPS25842QWRHBTQ1	

Automotive New Product Qualification Summary

(As per AEC-Q100 and JEDEC Guidelines)

Approved 25-March-2022

Product Attributes

Attributes	Qual Device: TPS25831QWRHBRQ1	Qual Device: TPS25830QWRHBRQ1	QBS Process Reference: LMR33630CQRNXRQ1
Automotive Grade Level	Grade 1	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C	-40C to 125C
Product Function	Power Management	Power Management	Power Management
Wafer Fab Supplier	DMOS6	DMOS6	DMOS6
Die Revision	B0	B0	B0
Assembly Site	NSE (UTAC)	NSE (UTAC)	CDAT
Package Type	QFN	QFN	QFN-HR
Package Designator	RHB	RHB	RNX
Ball/Lead Count	32	32	12

- QBS: Qual By Similarity
- Qual Devices TPS25831WQRHBRQ1 and TPS25830WQRHBQ1 are qualified at LEVEL2-260C

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: TPS25831QWRHBRQ1	Qual Device: TPS25830QWRHBRQ1	QBS Process Reference: LMR33630CQRNXRQ1
Test Group A – Accelerated Environment Stress Tests									
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning Level 2	168 Hours, 85C/60 % RH	3/969/0	1/77/0	3/693/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-	3/231/0
uHAST	A3	JEDEC JESD22-A102	3	77	UnBiased HAST, 130C/85%RH	96Hours	-	-	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	1/77/0	3/231/0

Type	#	Test Spec	Min Lot Qty	SS/ Lot	Test Name / Condition	Duration	Qual Device: TPS25831QWRHBRQ1	Qual Device: TPS25830QWRHBRQ 1	QBS Process Reference: LMR33630CQRNXRQ1
WBP	C2	MIL-STD883 Method 2011	1	5	After TC Wire Bond Pull (Cpk>1.67)	-	1/5/0	1/5/0	-
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000 Cycles	1/45/0	-	1/44/0 (Note 1)
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 Hours	3/231/0	-	3/231/0
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 Hours	3/231/0		3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	1/800/0	-	3/2400/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	3/231/0 (Note 2)	-	3/231/0
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	Pb Free Surface Mount Solderability	Pb Free/Solder-	1/15/0	-	1/15/0
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	-	3/90/0
Test Group D – Die Fabrication Reliability Tests									
EM	D1	JESD61	-	-	Electromigration	-	-	-	Completed per Process Technology Requirements
TDDB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	-	Completed per Process Technology Requirements

HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	-	-	-	Completed per Process Technology Requirements
NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	-	-	Completed per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	-	-	Completed per Process Technology Requirements
Test Group E – Electrical Verification Tests									
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	2000 V	3/9/0	1/3/0	1/3/0
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	4000 V	3/9/0	1/3/0	-
CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	750 V	3/9/0	1/3/0	1/3/0

Type	#	Test Spec	Min Lot Qty	SS/ Lot	Test Name / Condition	Duration	Qual Device: TPS25831QWRHBRQ1	Qual Device: TPS25830QWRHBRQ 1	QBS Process Reference: LMR33630CQRNXRQ1
CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	1000 V	3/9/0	1/3/0	-
LU	E4	AEC Q100-004	1	6	Latch-up	Per AEC Q100-004	3/18/0	1/3/0	-
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67	3/90/0	1/30/0	-

Note:
One (1) reject was attributed to test issue and was discounted. FA Report attached to eQDB: 20190614-130319 and 20190521-129951
HTSL data extended as Data Retention

A1 (PC): Preconditioning:
Performed for THB, Biased HAST, AC, uHAST, 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

For questions regarding this notice, e-mails can be sent to the contacts shown below or your local Field Sales Representative.

Location	E-Mail

WW PCN Team	PCN_ww_admin_team@list.ti.com

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