PCN Number:	20221010003.2	**PCN Date:**	Oct. 25, 2022
Title:	Qualification of DMOS5 as an additional Wafer Fab Site option for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	April 25, 2023	**Sample requests accepted until:**	November 25, 2022*

*Sample requests received after (November 25th 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 its DMOS5 fabrication facility as an additional Wafer Fab source for the selected devices listed in the “Product Affected” section.

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
MIHO8	LBC8LV	200mm	DP1DM5	LBC8LV	200 mm

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
MIHO8	MH8	JPN	Ibaraki

New Fab Site:

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

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
MADE IN: Malaysia
2DC: 2Q:
MSL 2 /260C/1 YEAR | SEAL DT
MSL 1 /235C/UNLIM | 03/29/04
OPT:
ITEM: 39
LBL: 5A (L)TO:1750
G4
(1P) SN74LS07NSR
(Q) 2000 (D) 0336
(31T)LOT: 3959047MLA
(4W) TKY(1T) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20L) CSO: SHE (21L) CCO:USA
(22L) ASO: MLA (23L) ACO: MYS

Product Affected:

ISO7730FQDBQQ1	ISO7731FQDBQRQ1	ISO7740QDBQQ1	ISO7741QDBQRQ1
ISO7730FQDBQRQ1	ISO7731QDBQQ1	ISO7740QDBQRQ1	ISO7742FQDBQQ1
ISO7730QDBQQ1	ISO7731QDBQRQ1	ISO7741FQDBQQ1	ISO7742FQDBQRQ1
ISO7730QDBQRQ1	ISO7740FQDBQQ1	ISO7741FQDBQRQ1	ISO7742QDBQQ1
ISO7731FQDBQQ1	ISO7740FQDBQRQ1	ISO7741QDBQQ1	ISO7742QDBQRQ1

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

ISO77xx DM5+DBQ [Automotive] in TAI
Approve Date 22-AUGUST -2022

Product Attributes

Attributes	Qual Device: ISO7741QDBQRQ1	Qual Device: ISO7730FQDBQRQ1	QBS Reference: ISO5851QDWQ1	QBS Reference: ISO7760QDBQQ1
Automotive Grade Level	Grade 1	Grade 1	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125	-40 to 125	-40 to 125
Product Function	Interface	Interface	Interface	Interface
Wafer Fab Supplier	DP1DM5, DP1DM5	DP1DM5, DP1DM5	MH8, DP1DM5, DP1DM5	MH8, MH8
Assembly Site	TAI	TAI	TAI	TAI
Package Group	SSOP	SSOP	SOIC	SSOP
Package Designator	DBQ	DBQ	DW	DBQ
Pin Count	16	16	16	16

- QBS: Qual By Similarity
- Qual Device ISO7741QDBQRQ1 is qualified at MSL2 260C
- Qual Device ISO7730FQDBQRQ1 is qualified at MSL2 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: ISO7741QDBQRQ1	Qual Device: ISO7730FQDBQRQ1	QBS Reference: ISO5851QDWQ1	QBS Reference: ISO7760QDBQQ1
Test Group A - Accelerated Environment Stress Tests											
PC	A1	JEDEC J-STD-020 JESD22A113	3	77	Preconditioning	MSL2 260C	1 Step	-	-	No Fails	No Fails
HAST	A2	JEDEC JESD22A110	3	77	Biased HAST	130C/85 %RH	96 Hours	-	-	3/231/0	3/231/0

AC/UHAST	A3	JEDEC JESD22A102/ JEDEC JESD22-A118	3	77	Autoclave	121C/15 psig	96 Hours	-	-	1/77/0	3/231/0
TC	A4	JEDEC JESD22A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	-	-	1/77/0	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	-	-	-	1/5/0
HTSL	A6	JEDEC JESD22A103	1	45	High Temperature Storage Life	175C	500 Hours	-	-	1/45/0	1/77/0
Test Group B - Accelerated Lifetime Simulation Tests											
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	125C	1000 Hours	-	-	3/231/0	-
ELFR	B2	AEC Q100008	1	77	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-
Test Group C - Package Assembly Integrity Tests											
WBS	C1	AEC Q100001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	1/30/0	1/30/0	1/30/0	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	1/30/0	1/30/0	1/30/0	3/90/0
SD	C3	JEDEC JESD22B102	1	15	PB Solderability	>95% Lead Coverage	-	-	-	-	1/15/0
SD	C3	JEDEC JESD22-B102	1	15	PB-Free Solderability	>95% Lead Coverage	-	-	-	-	1/15/0
PD	C4	JEDEC JESD22B100 and B108	1	10	Physical Dimensions	Cpk>1.67	-	-	-	1/10/0	3/30/0
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
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
HCI	D3	JESD60 & 28	-	-	Hot Carrier Injection	-	-	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
SM	D5	-	-	-	Stress Migration	-	-	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											
ESD	E2	AEC Q100002	1	3	ESD HBM	-	2000 Volts	1/3/0	1/3/0	1/3/0	1/3/0
ESD	E3	AEC Q100011	1	3	ESD CDM	-	500 Volts	1/3/0	1/3/0	1/3/0	1/3/0
LU	E4	AEC Q100004	1	6	Latch-Up	Per AEC Q100-004	-	1/6/0	1/6/0	1/6/0	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	1/30/0	1/30/0	1/30/0	3/90/0

- 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

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
- Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

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