

PCN Number: 20160202002A **PCN Date:** 04/28/2016

Title: Qualification of RFAB for Select LBC8 Devices

Customer Contact: PCN Manager **Dept:** Quality Services

Proposed 1st Ship Date: 07/28/2016 **Estimated Sample Availability:** Date provided at sample request.

Change Type:		
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>
<input type="checkbox"/>	Design	<input type="checkbox"/>
<input type="checkbox"/>	Test Site	<input type="checkbox"/>
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>
<input type="checkbox"/>	Electrical Specification	<input type="checkbox"/>
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>
<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>
<input type="checkbox"/>	Wafer Fab Materials	<input type="checkbox"/>
<input type="checkbox"/>	Part number change	<input type="checkbox"/>

PCN Details

Description of Change:

The purpose of Revision A is to add devices to this change. These devices are shown in Group 1 with proposed ship date of 7/26/2016. The original devices are shown in Group 2 maintain its proposed ship date of 5/05/2016.

Texas Instruments is pleased to announce the qualification of its RFAB fabrication facility as an additional wafer FAB source for the selected devices listed in "Product Affected" section.

Current Sites			Additional Sites		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
DP1DM5	LBC8	200 mm	RFAB	LBC8	300 mm

Qual details are provided in the Qual Data Section.

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 Sites	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
DP1DM5	DM5	USA	Richardson
New			
Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
RFAB	RFB	USA	Richardson

Sample product shipping label (not actual product label)

 <p>MADE IN: Malaysia ZDC: 20</p> <p>MSL 2 / 260C / 1 YEAR SEAL DT MSL 1 / 235C / UNLIM 03/29/04</p> <p>OPT: 39 ITEM: LBL: 5A (L)T0:1750</p>		<p>(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483S12 (P) (2P) REV: (V) 0033317 (20L) CS0: SHE (21L) CCO: USA (22L) ASO: MLA (23L) ACO: MVS</p>
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Product Affected:

Group 1: Devices added in Revision A; proposed ship date 7/26/2016		
DRV5013ADEDDBZR	DRV5013ADQDBZT	DRV5053RAQDBZT
DRV5013ADQDBZR	DRV5053RAQDBZR	
Group 2: Devices in original notification; proposed ship date 5/05/2016		
DRV83053PHP	DRV83055PHPR	SN1505019PHPR
DRV83053PHPR	DRV8305NPHP	SNC2025PHPR
DRV83055PHP	DRV8305NPHPR	

QUALIFICATION DATA**Group 1 Qual Data**

**RFAB Qualification for Hall Sensors
Approved 4/25/2016
Product Attributes**

Attributes	Qual Device: C5013ADA1	QBS Product Reference: DRV5013ADEDDBZRQ1	QBS Process Reference: SN96019PFP
Assembly Site	HNT	HANA (HNT)	PHI (TIPI)
Package Family	SOT	SOT	HTQFP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	RFAB	DFAB/DMOS5	RFAB
Wafer Process	LBC8	LBC8	LBC8

- QBS: Qual By Similarity
- Qual Device C5013ADA1 is qualified at LEVEL1-260C

Group 1 Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: C5013ADA1	QBS Product Reference: DRV5013ADEDDBZRQ1	QBS Process Reference: SN96019PFP
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0	3/231/0
ED	Auto Electrical Distributions	Cpk>1.33 Ppk>1.67 Room, hot, and cold test	-	1/30/0	-
ED	Electrical Characterization	Per Datasheet Parameters	3/90/0	-	1/30/0
ELFR	Early Life Failure Rate, 150C	48 Hours	-	3/2400/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	3/231/0	3/231/0
HBM	ESD - HBM	2500 V	-	1/3/0	-
CDM	ESD - CDM	1000 V	-	1/3/0	-
HTOL	Life Test, 125C	1000 Hours	-	-	3/231/0
HTOL	Life Test, 150C	300 Hours	1/77/0	3/231/0	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	3/231/0

HTSL	High Temp. Storage Bake, 175C	500 Hours	-	1/47/0	-
LU	Latch-up	(per JESD78)	1/6/0	2/12/0	1/6/0
SD	Surface Mount Solderability	Pb Free	-	1/15/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	3/231/0
WBP	Bond Pull	Wires	-	1/5/0	-

- 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

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

**Group 2 Qual Data
Hayate (SNC2025PHPR) RFAB Offload
Approve Date 29-Jan-2016**

Attributes	Qual Device: SNC2025PHPR	QBS Product Reference: SNC2024PHP	QBS Process Reference: SN96019PFP
Assembly Site	TIPI	PHI (TIPI)	PHI (TIPI)
Package Family	TQFP	TQFP	HTQFP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	RFAB	DM5	RFAB
Wafer Process	LBC8	LBC8	LBC8

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: SNC2025PHPR	QBS Product Reference: SNC2024PHP	QBS Process Reference: SN96019PFP
AC	Autoclave 121C	96 Hours	-	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0
HBM	ESD - HBM	4000 V	-	1/3/0	-
CDM	ESD - CDM	1500 V	-	-	3/9/0
HTOL	Life Test, 125C	1000 Hours	-	1/77/0	3/231/0
HTSL	High Temp. Storage	420 Hours	-	-	3/231/0

	Bake, 170C				
LI	Lead Fatigue	Leads	-	-	-
LI	Lead Pull to Destruction	Leads	-	-	-
LU	Latch-up	(per JESD78)	-	2/12/0	1/6/0
PD	Physical Dimensions	--	-	-	-
SD	Surface Mount Solderability	Pb Free	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	3/231/0
TS	Thermal Shock, -65/150C	500 Cycles	-	-	-
UHA	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-
WBP	Bond Pull	Wires	-	-	-
WBS	Ball Bond Shear	Wires	-	-	-

- 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
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

**Group 2 Qualification Report
DRV8305 RFAB Offload
Approve Date 25-Jan-2016**

Attributes	Qual Device: DRV83053PHPR	Qual Device: DRV83055PHPR	Qual Device: DRV8305NPHPR	QBS Product Reference: DRV8305PHP	QBS Process Reference: SN96019PFP
Assembly Site	TITL	TITL	TITL	TAI / TITL	PHI (TIPI)
Package Family	HTQFP	HTQFP	HTQFP	HTQFP	HTQFP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	RFAB	RFAB	RFAB	DM5	RFAB
Wafer Process	LBC8	LBC8	LBC8	LBC8	LBC8

QBS: Qual By Similarity

- Qual Devices qualified at LEVEL3-260CG: DRV83053PHPR, DRV8305NPHPR, DRV83055PHPR

Type	Test Name / Condition	Duration	Qual Device: DRV83053PHPR	Qual Device: DRV83055PHPR	Qual Device: DRV8305NPHPR	QBS Product Reference: DRV8305PHP	QBS Process Reference: SN96019PFP
AC	Autoclave 121C	96 Hours	-	-	-	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	Pass	-	-	Pass	Pass
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0
HBM	ESD - HBM	4000 V	-	-	-	1/3/0	-
CDM	ESD - CDM	1500 V	-	-	-	-	3/9/0

HTOL	Life Test, 125C	1000 Hours	-	-	-	-	3/231/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-	3/231/0
LU	Latch-up	(per JESD78)	-	-	-	2/12/0	1/6/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	1/77/0	3/231/0
WBP	Bond Pull	Wires	-	-	-	-	-
WBS	Ball Bond Shear	Wires	-	-	-	-	-
YLD	FTY and Bin Summary	--	-	1/Pass	1/Pass	-	-

- 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
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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