

<b>PCN Number:</b>	20190206001.1A	<b>PCN Date:</b>	Apr 22, 2019
<b>Title:</b>	Qualification of RFAB as an additional Fab site option for select devices		
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	May 2, 2019	<b>Estimated Sample Availability:</b>	Date provided at sample request.
<b>Change Type:</b>			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material
<input checked="" type="checkbox"/>	Wafer Fab Site	<input checked="" type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Part number change
<input type="checkbox"/>		<input type="checkbox"/>	Assembly Materials
<input type="checkbox"/>		<input type="checkbox"/>	Mechanical Specification
<input type="checkbox"/>		<input type="checkbox"/>	Test Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process

**PCN Details**

**Description of Change:**

**Revision A** is to announce the addition of new devices that were not included on the original PCN notification. These new devices are highlighted in **bold** in the device list below. The expected first shipment date for these new devices specifically, will be 90 days from this notice (**July 22, 2019**). The proposed 1<sup>st</sup> ship date of May 2, 2019 still applies for the original set of devices.

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 the "Product Affected" section.

Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
MIHO8	LBC7	200 mm	RFAB	LBC7	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:**

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
<b>RFAB</b>	<b>RFB</b>	<b>USA</b>	<b>Richardson</b>

Sample product shipping label (not actual product label)



MADE IN: Malaysia  
2DC: 20:

MSL 2 / 260C / 1 YEAR	SEAL DT
MSL 1 / 235C / UNLIM	03/29/04

OPT:  
ITEM: 39  
**LBL: 5A (L)T0:1750**



(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483S12  
(P)  
(2P) REV: (V) 0033317  
(20L) CSO: SHE (21L) CCO:USA  
(22L) ASO: MLA (23L) ACO: MYS

**Product Affected:**

DRV8846RGER	DRV8846RGET	<b>DRV8848PWP</b>	<b>DRV8848PWPR</b>
<b>DRV8848LPWPR</b>			

**Qualification Report**

Approve Date 05-Apr-2019

**Qualification Results**

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

Type	Test Name / Condition	Duration	Qual Device: DRV8848PWPR	QBS Product Reference: DRV8846RGER	QBS Product Reference: DRV8848PWP	QBS Process Reference: TPS62110RSA	QBS Package Reference: SN0508073PW	QBS Package Reference: TPA6011A4PWP	QBS Package Reference: TPS51117PW
-	Yield Evaluation	(per mfg. Site specification)	1/Pass	-	-	-	-	-	-
AC	Autoclave 121C	240 Hours	-	-	-	3/231/0	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0
CDM	ESD - CDM	1500 V	-	1/3/0	1/3/0	-	-	-	-
DPA	Destructive Physical Analysis	Post 500 Temp Cycle	-	-	-	-	-	3/9/0	-
ED	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	-	-	-	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	3/1881/0	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	-	-	-
HBM	ESD - HBM	4000 V	-	1/3/0	-	-	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	-	3/231/0	-	-	-
HTOL	Life Test, 155C	240 Hours	-	-	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/231/0	3/231/0	3/231/0	3/231/0
LU	Latch-up	(per JESD78)	-	1/6/0	-	-	-	-	-
TC	Temperature Cycle, -65/150C	1000 Cycles	-	1/77/0	-	3/231/0	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	1/77/0	3/231/0	3/231/0	3/231/0	3/231/0

- QBS: Qual By Similarity

- Qual Device DRV8848PWPR is qualified at LEVEL3-260CG

- 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

## Qualification Report

Approve Date 29-Jan-2019

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

Type	Test Name / Condition	Duration	Qual Device: <u>DRV8846RGER</u>	QBS Product Reference: <u>DRV8846RGER</u>	QBS Product Reference: <u>DRV8848PWP</u>	QBS Process Reference: <u>TPS51217DSC</u>	QBS Package Reference: <u>TPS2231RGPR_CU_WIRE</u>	QBS Package Reference: <u>TPS62402DRCR_CU_WIRE</u>
AC	Autoclave 121C	240 Hours	-	-	-	6/462/0	3/231/0	1/77/0
AC	Autoclave 121C	96 Hours	-	-	-	6/462/0	3/231/0	1/77/0
CDM	ESD - CDM	1000 V	-	-	-	3/9/0	-	-
CDM	ESD - CDM	1500 V	-	1/3/0	1/3/0	3/9/0	-	-
CDM	ESD - CDM	250 V	-	1/3/0	-	3/9/0	-	-
DS	Die Shear	--	-	-	-	-	3/30/0	1/10/0
ED	Electrical Characterization	Per Datasheet Parameters	1/Pass	1/30/0	1/30/0	3/60/0	-	-
HAST	Biased HAST 130C/85%RH	96 Hours	-	-	-	3/231/0	-	-
HBM	ESD - HBM	1000 V	-	1/3/0	-	3/9/0	-	-
HBM	ESD - HBM	1500 V	-	1/3/0	-	2/6/0	-	-
HBM	ESD - HBM	2000 V	-	1/3/0	-	3/9/0	-	-
HBM	ESD - HBM	4000 V	-	1/3/0	-	-	-	-
HBM	ESD - HBM	500 V	-	1/3/0	-	3/9/0	-	-
HTOL	Life Test, 135C	635 Hours	-	-	-	3/231/0	-	-
HTOL	Life Test, 155C	240 Hours	-	-	-	-	3/231/0	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	3/231/0	3/231/0	1/77/0
LU	Latch-up	(per JESD78)	-	1/6/0	-	3/18/0	-	-
MISC	Salt Atmosphere	24 Hours	-	-	-	-	3/66/0	1/22/0
PD	Physical Dimensions	--	-	-	-	-	3/15/0	1/5/0
SD	Solderability	8 Hours Steam Age	-	-	-	-	3/66/0	-
TC	Temperature Cycle -65/150C	1000 Cycles	-	1/77/0	-	3/231/0	3/231/0	1/77/0
TC	Temperature Cycle -65/150C	500 Cycles	-	1/77/0	1/77/0	3/231/0	3/261/0	1/87/0
TC-SAM	Post Temp Cycle SAM	CSAM and TSAM analysis after 1000 cycles Temp cycle	-	-	-	3/36/0	-	-
WBP	Bond Pull	Wires	-	-	-	-	3/228/0	1/76/0
WBS	Bond Shear	Wires	-	-	-	-	3/228/0	1/76/0
XRAY	X-ray	(top side only)	-	-	-	3/15/0	3/15/0	1/5/0

- QBS: Qual By Similarity

- Qual Device DRV8846RGER is qualified at LEVEL3-260C

- 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

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

Location	E-Mail
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
WW PCN Team	<a href="mailto:PCN_ww_admin_team@list.ti.com">PCN_ww_admin_team@list.ti.com</a>