

<b>PCN Number:</b>	20161006000	<b>PCN Date:</b>	Oct 6, 2016
--------------------	-------------	------------------	-------------

<b>Title:</b>	Alternate Fab (MIHO8) and Assembly (UTAC) site Qualifications 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>	Jan 6, 2017	<b>Estimated Sample Availability:</b>	Date provided at sample request.
---	-------------	---------------------------------------	----------------------------------

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

**PCN Details**

**Description of Change:**

Texas Instruments is pleased to announce the qualification of both an additional fab (MIHO8) and Assembly/Test (UTAC) site for the devices listed in the "Product Affected" section of this document.

Current Sites				Additional Sites			
Current Fab Site	Fab Process	Bump Site	Wafer Diameter	Additional Fab Site	Fab Process	Bump Site	Wafer Diameter
RFAB	LBC7	CLARK-BP	300 mm	MIHO8	LBC7	DBUMP	200 mm

**Assembly Site:**

	TI CLARK	UTAC
Lead Finish	NiPdAu	Matte Sn
Mold compound	4222790	CZ0339

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

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):**

<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" type="checkbox"/>	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained at the site link below <a href="http://www.ti.com/quality/docs/materialcontentsearch.tsp">http://www.ti.com/quality/docs/materialcontentsearch.tsp</a>
--------------------------	---------------------------------------	-------------------------------------	--

**Changes to product identification resulting from this PCN:**

Current			
Chip Sites	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
RFAB	RFB	USA	Richardson
New			
Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
MIHO8	MH8	JPN	Ibaraki

### Assembly Site

Current Assembly Site		
TI Clark	Assembly Site Origin (22L)	ASO: QAB
UTAC Thai Limited	Assembly Site Origin (22L)	ASO: NSE

Sample product shipping label (not actual product label)



MADE IN: Malaysia  
2DC: 2Q:



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

OPT: 39  
ITEM:  
LBL: 5A (L) TO: 1750

(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483SI2  
(P)  
(2P) REV. (V) 0053317  
(20L) CSO: SHE (21L) CCO: USA  
(22L) ASO: MLA (23L) ACO: MYS

ASSEMBLY SITE CODES: QAB = I, NSE = J

### Product Affected:

TPS56C215RNNR	TPS56C215RNNT
---------------	---------------

### Qualification Report

TPS56C215 Pebble Beach 12A Device Qual (RFAB - CLARK\_BP - UTAC flow)  
Approve Date 11-Aug-2016

#### Product Attributes

Attributes	Qual Device: TPS56C215RNN PG2.0 18PIN	Qual Device: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG1.0	QBS Product Reference: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG2.0 18PIN	QBS Product Reference: TPS56C215RNN PG2.0 18PIN
Assembly Site	UTAC	UTAC	CLARK AT	CLARK AT	UTAC	CLARK AT	UTAC
Package Family	HOTROD	HOTROD	HOTROD	HOTROD	HOTROD	HOTROD	HOTROD
Wafer Fab Supplier	RFAB	RFAB	RFAB	RFAB	MIHO	RFAB	MIHO
Wafer Process	LBC7	LBC7	LBC7	LBC7	LBC7	LBC7	LBC7

- QBS: Qual By Similarity  
- Qual Devices qualified at LEVEL2-260C: TPS56C215RNN PG2.0 17PIN, TPS56C215RNN PG2.0 18PIN

#### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS56C215RNN PG2.0 18PIN	Qual Device: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG1.0	QBS Product Reference: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG2.0 18PIN	QBS Product Reference: TPS56C215RNN PG2.0 18PIN
AC	Autoclave 121C	96 Hours	-	-	-	2/154/0	1/77/0	1/77/0	2/154/0
ED	Electrical Characterization	Per DataSheet Parameters	-	1/30/0	-	1/30/0	1/30/0	-	1/30/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0	1/77/0	-
HBM	ESD - HBM	4000 V	-	-	-	-	-	1/3/0	1/3/0
CDM	ESD - CDM	2000 V	-	-	-	-	-	1/3/0	1/3/0
HTOL	Life Test, 125C	1000 Hours	-	-	1/77/0	1/77/0	1/77/0	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	2/154/0	2/154/0	1/77/0	1/77/0
LU	Latch-up (per JEDEC78)	-	-	-	-	-	-	1/6/0	1/6/0
TC	Temperature Cycle, -55/125C	700 Cycles	1/77/0	-	-	-	-	3/231/0	3/231/0

- 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 JEDEC47: -55C/125C/700 Cycles and -55C/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

TPS56C215 Pebble Beach 12A Device Qual (MIHO -> DBUMP -> UTAC Flow)  
Approve Date 11-Aug-2016

#### Product Attributes

Attributes	Qual Device: TPS56C215RNN PG2.0 18PIN	Qual Device: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG1.0	QBS Product Reference: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG2.0 18PIN	QBS Product Reference: TPS56C215RNN PG2.0 18PIN	QBS Process Reference: TP361217D 3C	QBS Process Reference: TP362116R 5A
Assembly Site	UTAC	UTAC	CLARK AT	UTAC	CLARK AT	UTAC	CLARK AT	CLARK AT	CAR
Package Family	HOTROD	HOTROD	HOTROD	HOTROD	HOTROD	HOTROD	HOTROD	MIHO	QFN
Wafer Fab Supplier	MIHO	MIHO	RFAB	RFAB	RFAB	RFAB	RFAB	RFAB	MIHO
Wafer Process	LBC7.3	LBC7.3	LBC7.3	LBC7.3	LBC7.3	LBC7.3	LBC7.3	LBC7	LBC7

- QBS: Qual By Similarity  
- Qual Devices qualified at LEVEL2-260C: TPS56C215RNN PG2.0 17PIN, TPS56C215RNN PG2.0 18PIN

#### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS56C215RNN PG2.0 18PIN	Qual Device: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG1.0	QBS Product Reference: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG2.0 17PIN	QBS Product Reference: TPS56C215RNN PG2.0 18PIN	QBS Process Reference: TP361217D 3C	QBS Process Reference: TP362116R 5A
AC	Autoclave 121C	96 Hours	2/154/0	1/77/0	-	-	2/154/0	1/77/0	-	3/231/0
ED	Electrical Characterization	Per DataSheet Parameters	1/30	1/30	-	1/30/0	1/30	-	-	3/60/0
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	-	-	-	-	3/1881/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	1/77/0	-	-	3/231/0
HBM	ESD - HBM	4000 V	1/30	-	-	-	1/30	-	-	-
CDM	ESD - CDM	2000 V	1/30	-	-	-	1/30	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	1/77/0	1/77/0	-	1/77/0	-	-	-
HTOL	Life Test, 135C	635 Hours	-	-	-	-	-	-	-	3/231/0
HTOL	Life Test, 140C	480 Hours	-	-	-	-	-	-	-	3/231/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	1/77/0	-	-	2/154/0	1/77/0	-	-	3/231/0
LU	Latch-up (per JEDEC78)	160	-	-	-	-	1/6/0	-	-	3/150
TC	Temperature Cycle, -55/125C	700 Cycles	3/231/0	-	-	-	3/231/0	1/77/0	-	-
TC	Temperature Cycle, -55/150C	500 Cycles	3/231/0	-	-	-	3/231/0	-	-	3/231/0
TS	Thermal Shock, -55/100C	800 Cycles	-	-	-	-	-	-	-	3/231/0

- 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 JEDEC47: -55C/125C/700 Cycles and -55C/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.

<b>Location</b>	<b>E-Mail</b>
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>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>