TEXAS INSTRUMENTS 12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20141218000
Qualification of Additional Back End/Alternate Assembly and Test Sites for Select Devices
Change Notification / Sample Request

Date: 12/19/2014
To: MOUSER PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

We request you acknowledge receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If you require samples or additional data to support your evaluation, please request within 30 days.

The changes discussed within this PCN will not take effect any earlier than **90** days from the date of this notification, unless customer agreement has been reached on an earlier implementation of the change. This notification period is per TI’s standard process.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services
Phone: +1(214) 480-6037
Fax: +1(214) 480-6659

20141218000
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
CSD13381F4	null
CSD13381F4T	null
CSD16556Q5B	null
CSD16570Q5BT	null
CSD17381F4	null
CSD17381F4T	null
CSD17483F4	null
CSD17483F4T	null
CSD17556Q5B	null
CSD18502Q5B	null
CSD18509Q5BT	null
CSD18532Q5B	null
CSD18540Q5BT	null
CSD19532Q5B	null
CSD23381F4	null
CSD23381F4T	null
CSD23382F4T	null
CSD25481F4	null
CSD25481F4T	null
CSD25483F4	null
CSD25483F4T	null
CSD86330Q3D	null
CSD86350Q5D	null
CSD87330Q3D	null
CSD87350Q5D	null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20141218000	**PCN Date:**	12/19/2014
Title:	Qualification of Amkor Philippines and JCAP China as an Alternate Assembly and Test site for Select Devices		

Customer Contact:	PCN Manager	**Phone:**	+1(214)480-6037	**Dept:**	Quality Services

Proposed 1st Ship Date:	03/19/2015	**Estimated Sample Availability:**	Provided upon Request

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 Amkor Philippines and JCAP China as alternate Assembly and test sites for the devices listed below. The material set will remain the same for the devices in Group 1b and 2. Group 1a BOM differences are noted below:

	PSi	**Clark**	**Amkor**
Mold Compound	SID#202828	4208625	SID#202828
Lead Finish	Matte Sn	NiPdAu	Matte Sn

	Current Assembly/Test Site	**New Assembly/Test Site**
Group 1B	PSi	Amkor

	Current Probe/Backend Site	**New Probe/Backend Site**
Group 2	TI Clark	JCAP China

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

Reason for Change:

Continuity of Supply

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):

None

Changes to product identification resulting from this PCN:

Assembly Site		
PSI	Assembly Site Origin (22L)	ASO: PAC
TI Clark	Assembly Site Origin (22L)	ASO: QAB
Amkor Philippines	**Assembly Site Origin (22L)**	**ASO: AP3**
JCAP China	**Assembly Site Origin (22L)**	**ASO: JCP**

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
G4
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
(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

Topside Device marking:
Assembly site code for PAC= E
Assembly site Code for QAB = I
Assembly site code for AP3= 3
Assembly site code for JCP= P

Product Affected

Group 1a Device List – Power Block Devices:

CSD58865Q5D	CSD86350Q5D	CSD87330Q3D	CSD87350Q5D
CSD86330Q3D			

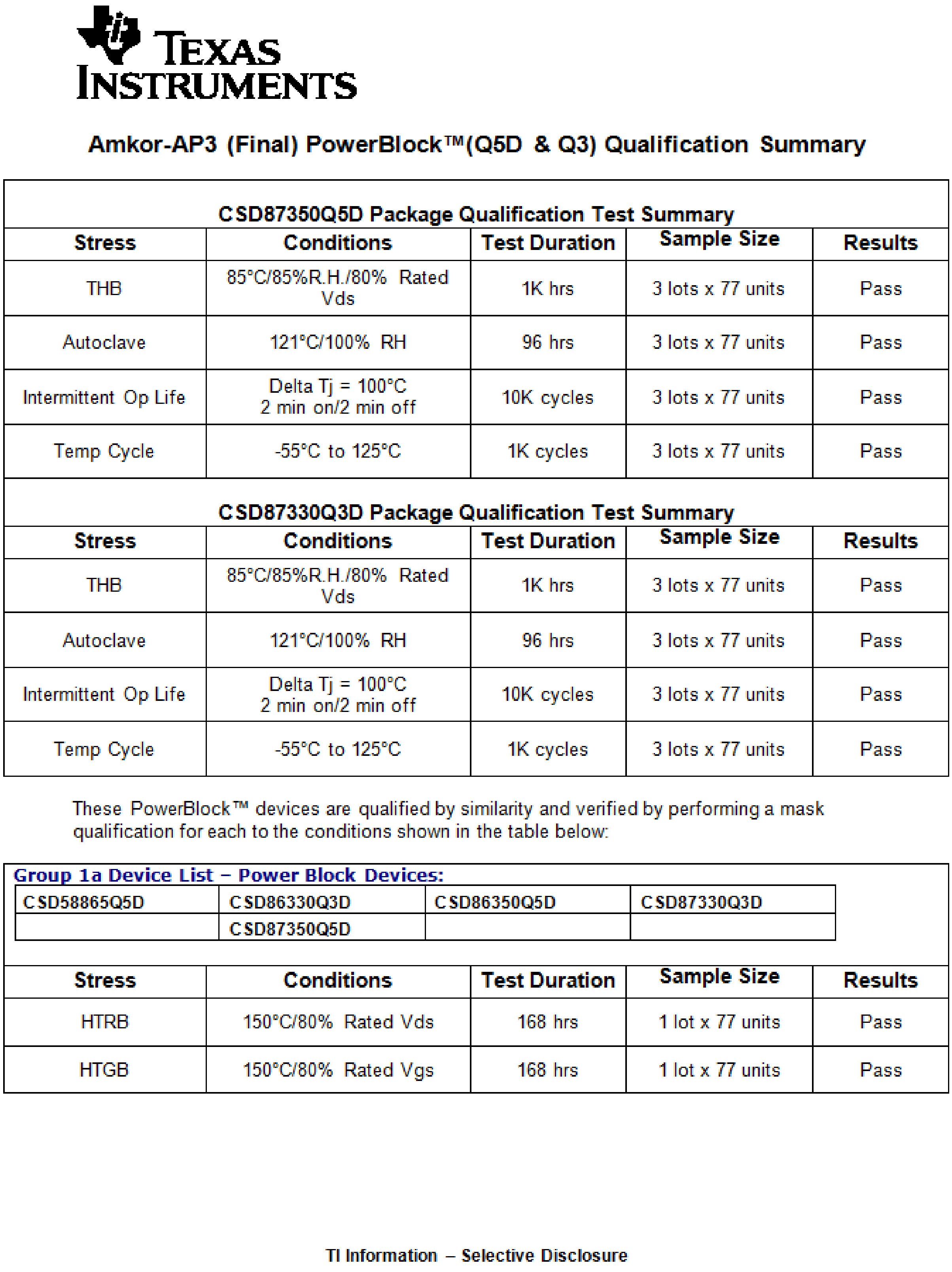
Group 1b Device List – Discrete Devices:

CSD16556Q5B	CSD17556Q5BT	CSD18509Q5B	CSD18540Q5B
CSD16570Q5B	CSD17570Q5B	CSD18509Q5BT	CSD18540Q5BT
CSD16570Q5BT	CSD17570Q5BT	CSD18532Q5B	CSD19532Q5B
CSD17556Q5B	CSD18502Q5B	CSD18532Q5BT	CSD19532Q5BT

Group 2 Device List:

CSD13381F4	CSD17483F4	CSD23381F4T	CSD25481F4T
CSD13381F4R	CSD17483F4R	CSD23382F4	CSD25483F4
CSD13381F4T	CSD17483F4T	CSD23382F4T	CSD25483F4R
CSD17381F4	CSD23381F4	CSD25481F4	CSD25483F4T
CSD17381F4R	CSD23381F4R	CSD25481F4R	CSD68829F4
CSD17381F4T			

Group 1a/1b Qualification Data:



TEXAS INSTRUMENTS

Amkor-AP3 (Final) PowerBlock™(Q5D & Q3) Qualification Summary

CSD87350Q5D Package Qualification Test Summary

Stress	Conditions	Test Duration	Sample Size	Results
THB	85°C/85%R.H./80% Rated Vds	1K hrs	3 lots x 77 units	Pass
Autoclave	121°C/100% RH	96 hrs	3 lots x 77 units	Pass
Intermittent Op Life	Delta Tj = 100°C 2 min on/2 min off	10K cycles	3 lots x 77 units	Pass
Temp Cycle	-55°C to 125°C	1K cycles	3 lots x 77 units	Pass

CSD87330Q3D Package Qualification Test Summary

Stress	Conditions	Test Duration	Sample Size	Results
THB	85°C/85%R.H./80% Rated Vds	1K hrs	3 lots x 77 units	Pass
Autoclave	121°C/100% RH	96 hrs	3 lots x 77 units	Pass
Intermittent Op Life	Delta Tj = 100°C 2 min on/2 min off	10K cycles	3 lots x 77 units	Pass
Temp Cycle	-55°C to 125°C	1K cycles	3 lots x 77 units	Pass

These PowerBlock™ devices are qualified by similarity and verified by performing a mask qualification for each to the conditions shown in the table below:

Group 1a Device List – Power Block Devices:

CSD58865Q5D	CSD86330Q3D	CSD86350Q5D	CSD87330Q3D
	CSD87350Q5D		

Stress	Conditions	Test Duration	Sample Size	Results
HTRB	150°C/80% Rated Vds	168 hrs	1 lot x 77 units	Pass
HTGB	150°C/80% Rated Vgs	168 hrs	1 lot x 77 units	Pass

TI Information – Selective Disclosure

Amkor-AP3 (Intermediate) Q5B Discrete Qualification Summary

CSD17556Q5B with 4mil die Qualification Test Summary

Stress	Conditions	Test Duration	Sample Size	Results
THB	85°C/85%R.H./80% Rated Vds	500 hrs	1 lot x 77 units	Pass
Autoclave	121°C/100% RH	96 hrs	1 lot x 77 units	Pass
Intermittent Op Life	Delta Tj = 100°C 2 min on/2 min off	5K cycles	1 lot x 77 units	Pass
Temp Cycle	-55°C to 125°C	1K cycles	1 lot x 77 units	Pass

CSD17570Q5B with 2mil die Qualification Test Summary

Stress	Conditions	Test Duration	Sample Size	Results
THB	85°C/85%R.H./80% Rated Vds	500 hrs	1 lot x 77 units	Pass
Autoclave	121°C/100% RH	96 hrs	1 lot x 77 units	Pass
Intermittent Op Life	Delta Tj = 100°C 2 min on/2 min off	10K cycles	1 lot x 77 units	Pass
Temp Cycle	-55°C to 125°C	500 cycles	1 lot x 77 units	Pass

These Discrete devices are qualified by similarity and verified by performing a mask qualification for each to the conditions shown in the table below:

Group 1b Device List – Discrete Devices:

CSD16556Q5B	CSD17570Q5B	CSD18532Q5B	CSD19532Q5B
CSD17556Q5B	CSD17570Q5BT	CSD18532Q5BT	CSD19532Q5BT
CSD17556Q5BT	CSD18540Q5B	CSD16570Q5B	CSD18509Q5B
CSD18502Q5B	CSD18540Q5BT	CSD16570Q5BT	CSD18509Q5BT

Stress	Conditions	Test Duration	Sample Size	Results
HTRB	150°C/80% Rated Vds	168 hrs	1 lot x 77 units	Pass
HTGB	150°C/80% Rated Vgs	168 hrs	1 lot x 77 units	Pass

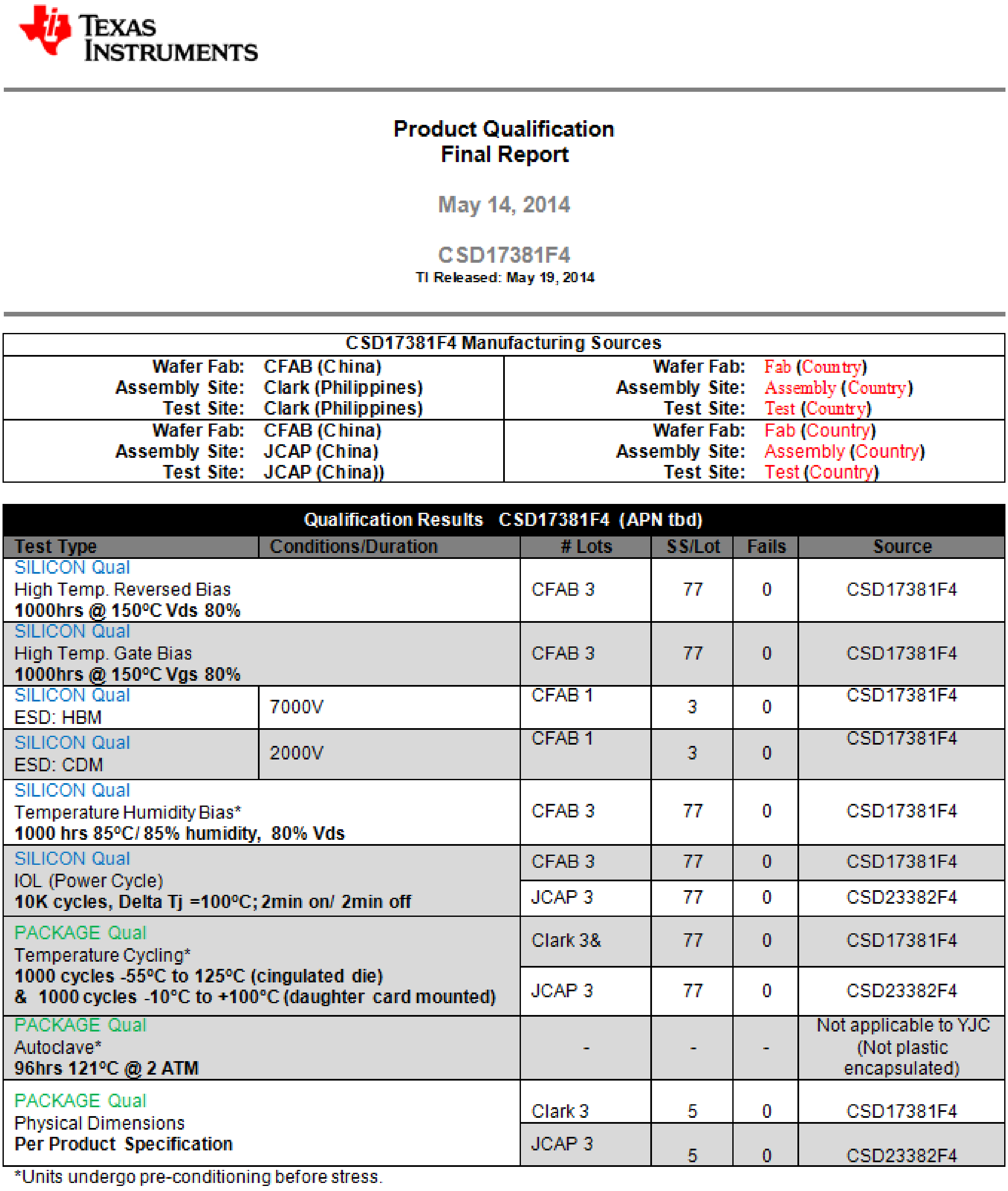
TI Information – Selective Disclosure

Attributes	CSD87350Q5D	CSD87330Q3D	CSD17556Q5B	CSD17570Q5B
Assembly site	Amkor – AP3	Amkor – AP3	Amkor – AP3	Amkor – AP3
Package Family	DQY	DQZ	DNK	DNK
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Site	CFAB	CFAB	CFAB	CFAB
Wafer Fab Process	30N10 Gen_2.0	30N10 Gen_2.0	30N20 Gen_1.3	30N20 Gen_1.4

MSL1 preconditioning performed on all Q5D, Q5B & Q3D devices prior to THB, Autoclave, & Temp Cycle stresses:

- Bake: 24 hours @ 125°C
- Damp Heat: 168 hours @ 85°C/85% RH (Level 1)
- 3X reflow + flux + rinse, 260°C Pb free reflow temp

Group 2 Qualification Data:



TEXAS INSTRUMENTS

Product Qualification
Final Report

May 14, 2014

CSD17381F4

TI Released: May 19, 2014

CSD17381F4 Manufacturing Sources			
Wafer Fab:	**CFAB (China)**	**Wafer Fab:**	Fab (Country)
Assembly Site:	**Clark (Philippines)**	**Assembly Site:**	Assembly (Country)
Test Site:	**Clark (Philippines)**	**Test Site:**	Test (Country)
Wafer Fab:	**CFAB (China)**	**Wafer Fab:**	Fab (Country)
Assembly Site:	**JCAP (China)**	**Assembly Site:**	Assembly (Country)
Test Site:	**JCAP (China))**	**Test Site:**	Test (Country)

Qualification Results CSD17381F4 (APN tbd)					
Test Type	**Conditions/Duration**	**# Lots**	**SS/Lot**	**Fails**	**Source**
SILICON Qual High Temp. Reversed Bias **1000hrs @ 150°C Vds 80%**		CFAB 3	77	0	CSD17381F4
SILICON Qual High Temp. Gate Bias **1000hrs @ 150°C Vgs 80%**		CFAB 3	77	0	CSD17381F4
SILICON Qual ESD: HBM	7000V	CFAB 1	3	0	CSD17381F4
SILICON Qual ESD: CDM	2000V	CFAB 1	3	0	CSD17381F4
SILICON Qual Temperature Humidity Bias* **1000 hrs 85°C/ 85% humidity, 80% Vds**		CFAB 3	77	0	CSD17381F4
SILICON Qual IOL (Power Cycle) **10K cycles, Delta Tj =100°C; 2min on/ 2min off**		CFAB 3	77	0	CSD17381F4
		JCAP 3	77	0	CSD23382F4
PACKAGE Qual Temperature Cycling* **1000 cycles -55°C to 125°C (cingulated die)** **& 1000 cycles -10°C to +100°C (daughter card mounted)**		Clark 3&	77	0	CSD17381F4
		JCAP 3	77	0	CSD23382F4
PACKAGE Qual Autoclave* **96hrs 121°C @ 2 ATM**		-	-	-	Not applicable to YJC (Not plastic encapsulated)
PACKAGE Qual Physical Dimensions **Per Product Specification**		Clark 3	5	0	CSD17381F4
		JCAP 3	5	0	CSD23382F4

*Units undergo pre-conditioning before stress.

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

Location	**E-Mail**
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com