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

PCN# 20141121002
Qualification of Additional Fab (UMC/DP1DM5) and Assembly Site (Amkor Philippines) for Select Devices
Change Notification / Sample Request

Date: 11/22/2014
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

20141121002
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
CSD95372BQ5MT	null
CSD95378BQ5MCT	null

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

PCN Number:	PCN20141121002	**PCN Date:**	11/22/14

Title:	Qualification of Additional Fab Site (UMC/DP1DM5) and Assembly Site (Amkor Philippines) for Select Devices

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

Proposed 1st Ship Date:	02/23/2015	**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 an additional Fab and Assembly site for the devices listed in the Product Affected Section. For the devices listed in Group 1, UMC and DP1DM5 will be qualified as an additional fab site and Amkor Philippines as a new Assembly site. The devices listed in Group 2 will have only an additional Fab sites qualified (UMC and DP1DM5). There are no differences in wafer diameter or fab processes between current and new fab sites. There is no material differences between devices assembled at the 2 sites in either qualification group.

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
Amkor Philippines	**Assembly Site Origin (22L)**	**ASO: AP3**

Chip Site:

Current

Chip Site	Chip site code (20L)	Chip country code (21L)
CFAB	CU3	CHN
MIHO8	MH8	JPN

New

Chip Site	**Chip site code (20L)**	**Chip country code (21L)**
DP1DM5	DM5	USA
UMC-F8AB	UAB	TWN

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

Topside Device marking:
Assembly site code for PAC= E
Assembly site code for AP3= 3

Product Affected

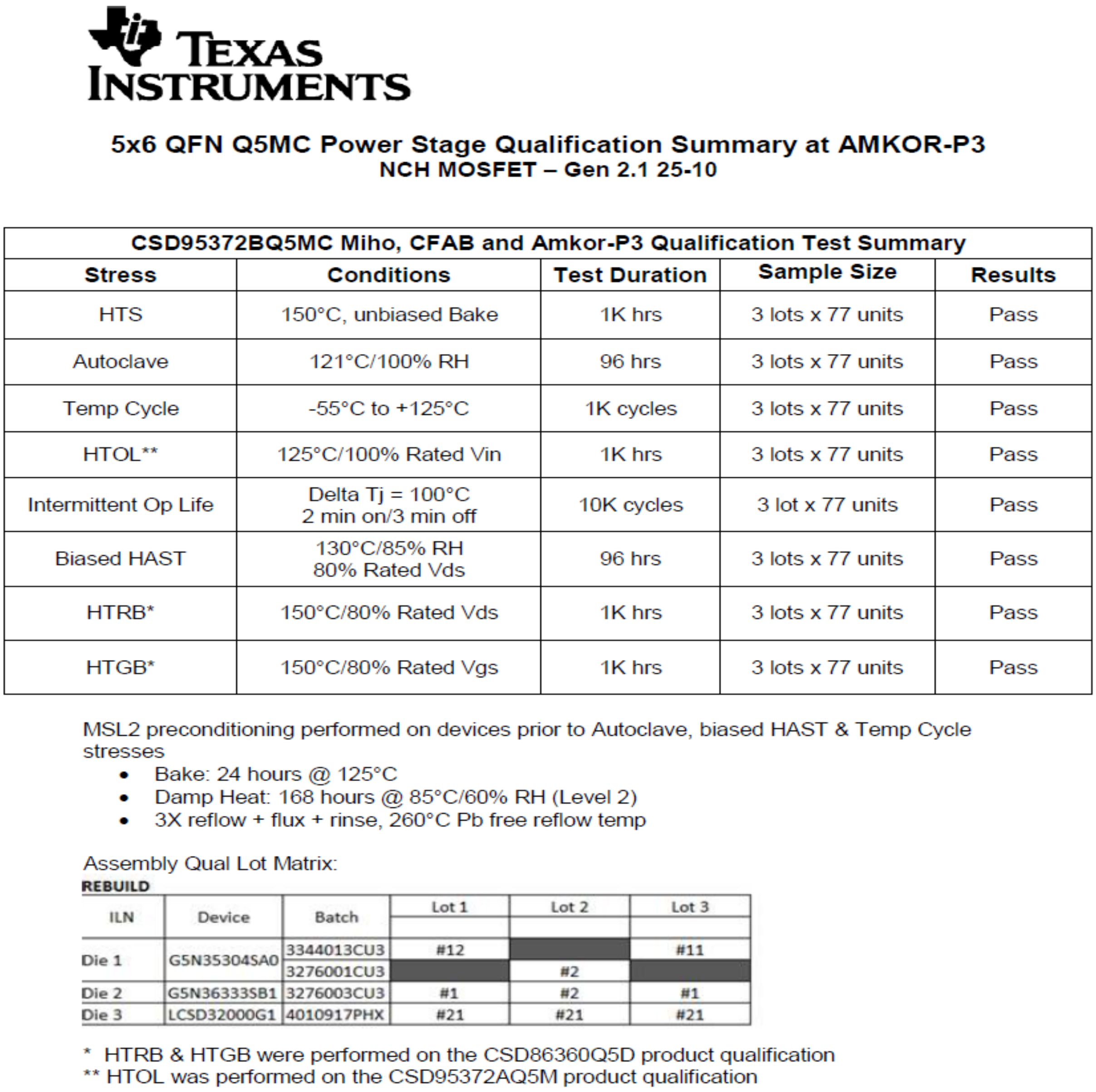
Group 1 Devices (Assembly/Adding Amkor & Fab/Adding UMC-F8AB and DP1DM5):

CSD59972BQ5MC	CSD59974BQ5MC	CSD95372BQ5MC	CSD95378BQ5MC
CSD59973BQ5MC	CSD59974BQ5MCT	CSD95372BQ5MCT	CSD95378BQ5MCT
CSD59973BQ5MCT			

Group 2 Devices (Fab Only/Adding UMC-F8AB/DP1DM5):

CSD59962Q5M	CSD95372BQ5MT	CSD95373BQ5MT	CSD95378BQ5MT
CSD95372BQ5M	CSD95373BQ5M	CSD95378BQ5M	

Amkor Philippines Qualification Data:



TEXAS INSTRUMENTS

5x6 QFN Q5MC Power Stage Qualification Summary at AMKOR-P3
NCH MOSFET – Gen 2.1 25-10

CSD95372BQ5MC Miho, CFAB and Amkor-P3 Qualification Test Summary				
Stress	**Conditions**	**Test Duration**	**Sample Size**	**Results**
HTS	150°C, unbiased Bake	1K hrs	3 lots x 77 units	Pass
Autoclave	121°C/100% RH	96 hrs	3 lots x 77 units	Pass
Temp Cycle	-55°C to +125°C	1K cycles	3 lots x 77 units	Pass
HTOL**	125°C/100% Rated Vin	1K hrs	3 lots x 77 units	Pass
Intermittent Op Life	Delta Tj = 100°C 2 min on/3 min off	10K cycles	3 lot x 77 units	Pass
Biased HAST	130°C/85% RH 80% Rated Vds	96 hrs	3 lots x 77 units	Pass
HTRB*	150°C/80% Rated Vds	1K hrs	3 lots x 77 units	Pass
HTGB*	150°C/80% Rated Vgs	1K hrs	3 lots x 77 units	Pass

MSL2 preconditioning performed on devices prior to Autoclave, biased HAST & Temp Cycle stresses

- Bake: 24 hours @ 125°C
- Damp Heat: 168 hours @ 85°C/60% RH (Level 2)
- 3X reflow + flux + rinse, 260°C Pb free reflow temp

Assembly Qual Lot Matrix:

REBUILD

ILN	Device	Batch	Lot 1	Lot 2	Lot 3
Die 1	G5N35304SA0	3344013CU3	#12	■	#11
		3276001CU3	■	#2	■
Die 2	G5N36333SB1	3276003CU3	#1	#2	#1
Die 3	LCSD32000G1	4010917PHX	#21	#21	#21

* HTRB & HTGB were performed on the CSD86360Q5D product qualification
** HTOL was performed on the CSD95372AQ5M product qualification

UMC Fab Qualification Data:

UMC Fab 8E Qualification Summary
NCH 25N16 & 30N10 MOSFET

CSD16404Q5A & CSD17310Q5A Qualification Test Summary

Stress	Conditions	Test Duration	Sample Size	Results
HTRB	150°C/80% Rated Vds	1K hrs	3 lots x 77 units	Pass
HTGB	150°C/80% Rated Vgs	1K hrs	3 lots x 77 units	Pass
THB	85°C/85%R.H./80% Rated Vds	1K hrs	3 lots x 77 units	Pass
Autoclave	121C/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	-40°C to 125°C	1K cycles	3 lots x 77 units	Pass

DP1DM5 Fab Qualification Data:

DMOS5 LBC7 Qualification Data: (Approved 2/16/2007)

This qualification has been developed for the validation of this change. The qualification data will validate that the proposed change meets the applicable released technical specifications.

Qualification Device: BQ24721RHB

Wafer Fab Site:	DMOS5	Wafer Fab Process:	LBC7

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size		
		Lot#1	Lot#2	Lot#3
**High Temp. Storage	170C (420hrs)	77/0	77/0	77/0
**Autoclave 121C	240 Hrs	77/0	77/0	77/0
**Temp Cycle	-65C/+150C (1000 Cyc)	77/0	77/0	77/0
**Thermal Shock	-65C/+150C (1000 Cyc)	77/0	77/0	77/0
ESD HBM	+/- 2000V	3/0	3/0	3/0
ESD CDM	+/- 500V	3/0	3/0	3/0
ESD MM	+/- 100V	3/0	3/0	3/0
Latch-up	100mA	5/0	5/0	5/0
Electrical Char	Per datasheet spec	Pass	Pass	Pass
Wafer level Reliability	Approved	Pass	Pass	Pass
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Manufacturability (Wafer Fab)	(per mfg. Site specification)	Pass	Pass	Pass

** Preconditioning sequence: Level 3-260C

Qualification Device: SH6964BBA0G4

Wafer Fab Site:	DMOS5	Wafer Fab Process:	LBC7

Qualification: ☐ **Plan** ☒ **Test Results**

Reliability Test	Conditions	Sample Size (PASS/FAIL)		
**Biased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
Manufacturability (Wafer Fab)	(per mfg. Site specification)	Pass		
Wafer level Reliability	Approved	Pass	Pass	Pass

** Preconditioning sequence: Level 3-260C

Qualification Device: SH6964BBA0G4				
Qualification Device: BQ24730RGF				
Wafer Fab Site:	DMOS5	Wafer Fab Process:	LBC7	
Qualification: ☐ **Plan** ☒ **Test Results**				
Reliability Test	Conditions	Sample Size (PASS/FAIL)		
**Life Test 155C	240 Hrs	116/0	116/0	116/0
Electrical Char	Per datasheet spec	Pass	Pass	Pass
Manufacturability (Wafer Fab)	(per mfg. Site specification)	Pass		
Manufacturability (Assembly)	(per mfg. Site specification)	Pass		
Wafer level Reliability	Approved	Pass	Pass	Pass
** Preconditioning sequence: Level 3-260C				

Addendum to:

5x6 QFN Q5MC Power Stage Qualification Summary
NCH MOSFET – Gen 2.1 25-10

Second 42nd Fab Sourcing Qualification Summary (DMOS-5, UMC and Amkor-P3):
CSD95372BQ5MC DMOS-5, UMC and Amkor-P3 Qualification Test Summary

Stress	Conditions	Test Duration	Sample Size	Results
HTOL	125°C/100% Rated Vin	1K hrs	3 lots x 77 units	Pass

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