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

PCN#20160630000B
Qualification of AMKOR P3 as Additional Assembly and Test Site for Select LSON-CLIP Package Devices
Change Notification / Sample Request

Date: December 01, 2016
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

Revision B is to update the product identification section resulting from this PCN. We apologize for any inconvenience this may have caused.

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 proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

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

20160630000B
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
TPS56121DQPR	null
TPS53319DQPT	null
TPS56121DQPT	null
TPS56221DQPT	null
TPS53319DQPR	null
TPS53353DQPT	null
TPS53353DQPR	null
TPS53318DQPR	null
TPS53318DQPT	null
TPS56221DQPR	null
TPS53355DQPT	null

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

PCN Number:	20160630000B	**PCN Date:**	Dec. 1, 2016
Title:	Qualification of AMKOR P3 as Additional Assembly and Test Site for Select LSON-CLIP Package Devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services

Change Type:

☒	Assembly Site	☐	Design	☐	Wafer Bump Site
☒	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process
☐	Mechanical Specification	☒	Test Site	☐	Wafer Fab Site
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials
				☐	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing the qualification of AMKOR P3 as Additional Assembly and Test Site for select devices listed in the "Product Affected" Section. Current assembly sites and Material differences are as follows.

Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
TI Clark	QAB	PHL	Angeles City, Pampanga
Amkor P3	**AP3**	**PHL**	**Biñan, Laguna**

Material Differences:

	TI Clark	**AMKOR P3**
Mold compound	4208625	101390791
Mount compound (Controller side)	4220838 (95Pb/5Sn)	101361478 (Epoxy)
Lead finish	NiPdAu	Matte Sn

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

Reason for Change:

Continuity of supply.

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

None

Anticipated impact on Material Declaration

☐	No Impact to the Material Declaration	☒	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 from the TI ECO website.

Changes to product identification resulting from this PCN:

Revision B is to update the product ECAT value resulting from this PCN. We apologize for any inconvenience this may have caused.

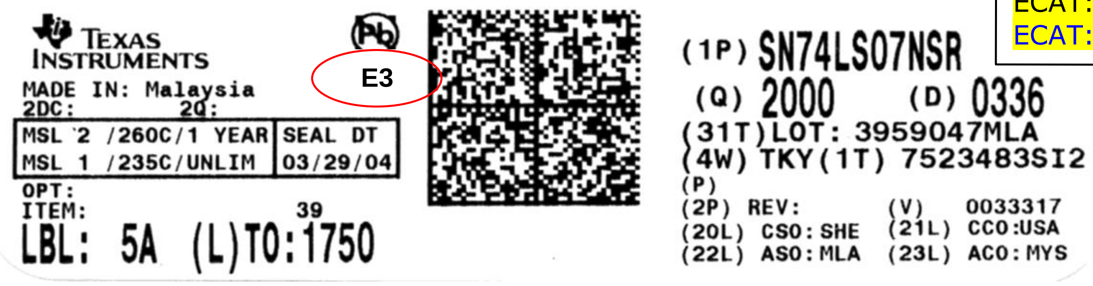
Sample product shipping label (not actual product label)

Assembly Site:

TI-CLARK	Assembly Site Origin (22L)	ASO: QAB	~~ECAT: G4~~ ECAT: E4
AMKOR P3	Assembly Site Origin (22L)	ASO: AP3	~~ECAT: G3~~ ECAT: E3

Sample product shipping label to show code location (not actual product label)

ECAT: E4 = NiPdAu
ECAT: E3 = Matte Sn



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

E3

(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

ASSEMBLY SITE CODES: TI-CLARK = I , AP3 = 3

Product Affected:

HPA01110DQPR	TPS53319DQPT	TPS53355DQPT	TPS56221BDQPT
HPA01111DQPR	TPS53353DQPR	TPS56121BDQPR	TPS56221DQPR
SN1109022DQPR	TPS53353DQPT	TPS56121BDQPT	TPS56221DQPT
TPS53318DQPR	TPS53355ADQPR	TPS56121DQPR	
TPS53318DQPT	TPS53355ADQPT	TPS56121DQPT	
TPS53319DQPR	TPS53355DQPR	TPS56221BDQPR	

Qualification Report

Amkor AP3 Phase 6 HPS DQP Clip QFN Offload from Clark to Amkor

Date: 06/30/2016

Product Attributes

Attributes	Qual Device: TPS53319DQP	Qual Device: TPS53355DQP	Qual Device: TPS56121BDQP
Assembly Site	AP3 (AMKOR P3)	AP3 (AMKOR P3)	AP3 (AMKOR P3)
Package Family	SON	SON	SON
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	CFAB, MIH0 8	CFAB, DMOS5	CFAB, DMOS5

Attributes	Qual Device: TPS53319DQP	Qual Device: TPS53355DQP	Qual Device: TPS56121BDQP
Wafer Fab Process	FET_NCH_LV_GEN2.0, LBC7	FET_NCH_LV_GEN2.0, LBC7	FET_NCH_LV_GEN2.0, LBC7

- QBS: Qual By Similarity
- Qual Device TPS53319DQP, TPS53355DQP, TPS56121BDQP is qualified at LEVEL2-260C
- Device TPS53319DQP, TPS53355DQP, TPS56121BDQP contains multiple dies.

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS53319DQP	Qual Device: TPS53355DQP	Qual Device: TPS56121BDQP
ED	Electrical Characterization, side by side	Per Datasheet Parameters	1/30/0	1/30/0	-
FLAM	Flammability (UL 94V-0)	Flammability/Method A	-	-	3/15/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	3/231/0
PD	Physical Dimensions	(per mechanical drawing)	-	-	3/30/0
SD	Solderability	Pb Free Solder	-	-	3/75/0
TC	Temperature Cycle, -55/125C	700 Cycles	3/231/0	1/77/0	3/231/0
XRAY	X-ray	(top side only)	1/5/0	1/5/0	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 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/

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