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

PCN#20200629000.1A

Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, and additional Assembly site/BOM options for select devices

Change Notification / Sample Request

Date: August 11, 2020

Dear TI Customer:

Revision A is to announce the addition of new devices that were not included on the original PCN notification.

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.

The customer should acknowledge receipt of this notification by email within **30** days of the date of receipt. Lack of acknowledgement of this notice within 30 days constitutes customer acceptance of the change.

Samples or additional data to support customer evaluation must be requested within 30 days of receipt of this notification. If samples are requested for evaluation the customer must provide evaluation results within the sample evaluation period indicated on page 3 of this notification. The Sample Evaluation Period begins on the date the customer receives samples from TI.

If the customer approved the change TI can proceed with implementation of the change. The proposed first ship date is shown on page 3.

If the customer does not approve the PCN or the approval response is not provided within the Sample Evaluation Period, TI can implement the change, but the customer may elect to place an order for unchanged product by the Last Time Buy Date for delivery by the Last Time Ship Date. TI cannot guarantee that shipments to the customer after any last time order is delivered will not include the changed material. If the customer places an order with delivery after the Last Time Shipment Date, the order may be fulfilled with changed material or any material processed to TI specifications at that future time.

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 Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact your field sales representative.

Sincerely,
PCN Team
SC Business Services

20200629000.1A
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
SN74HC05DR	36020120

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

PCN Number:	20200629000.1A	**PCN Date:**	Aug 11, 2020
Title:	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, and additional Assembly site/BOM options for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Oct 6 2020	**Sample Eval Period:**	180
Last Time Buy Date:	Dec 6 2020 Apr 8, 2021 (rev A)	**Last Time Ship Date:**	Mar 6 2021 Jul 7, 2021 (rev A)

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:

Revision A is to announce the addition of new devices that were not included on the original PCN notification. These new devices are highlighted and **bolded** in the device list below. The expected first shipment date for these new devices will be 90 days from this notice (Nov 11, 2020) for these newly added devices only. The proposed 1st shipment date of Oct 6, 2020 still applies for the original set of devices.

Texas Instruments is pleased to announce the qualification of a new fab & process technology (RFAB, LBC9) and assembly (HFTAT) site/BOM (MLA) options for selected devices as listed below in the product affected section. Construction differences are noted below:

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
SFAB	HCMOS	150 mm	RFAB	LBC9	300 mm

The die was also changed as a result of the process change.

Construction differences are noted below:

	ASESH	**FMX**	**MLA Current**	**MLA New**	**HFTF**
Mount Compound	SID#EY1000063	4147858	4147858	same	SID# A-03
Mold Compound	SID#EN2000511	4211880	4211880	same	SID#R-30
Lead finish	Matte Sn, non RLF	NiPdAu, non RLF	NiPdAu, non RLF	NiPdAu, RLF	Matte Sn, non RLF
Bond wire diameter (Cu)	0.8 mils	0.96 or 0.8mil	0.96 mils	0.8 mils	0.8 mils

Note: D Devices are currently built at one or more of the following AT sites: ASESH, FMX, MLA.

Upon expiry of this PCN TI will combine lead free solutions in a single ***standard part number***, for the devices in groups 1 & 2. For example; ***CD74HC08PWR***– can ship with both Matte Sn and NiPdAu/Ag.

Example:

- Customer order for 7500 units of CD74HC08PWR with 2500 units SPQ (Standard Pack Quantity per Reel).
-
- TI can satisfy the above order in one of the following ways.
  I. 3 Reels of NiPdAu finish.
  II. 3 Reels of Matte Sn finish

III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish.
IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish.

Reason for Change:

SFAB Closure & 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:

Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
SH-BIP-1	SHE	USA	Sherman
RFAB	**RFB**	**USA**	**Richardson**

Die Rev:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
E, G, K, or T	**B**

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
MLA	MLA	MYS	Kuala Lumpur
FMX	MEX	MEX	Aguascalientes
ASESH	ASH	CHN	Shanghai
HFTFAT	**HFT**	**CHN**	**Hefei**

Sample product shipping label (not actual product label)

Product Affected:

SN74HC04DR	SN74HC08DR	SN74HC125DR	SN74HC32DR
SN74HC14DR	SN74HC74DR	**SN74HC05DR**	

Qualification Results

Data Displayed as: Number of lots / Total sample siz

Type	Test Name / Condition	Duration
AC	Autoclave 121C	(96 hours)
CDM	ESD - CDM	1500V
DS	Die Shear	QSS 009-009
FLAM	Flammability (IEC 695-2-2)	(IEC 695-2-2)
FLAM	Flammability (UL 94V-0)	(UL 94V-0)
FLAM	Flammability (UL-1694)	(UL-1694)
HAST	Biased HAST, 130C/85%RH	(96 hours)
HTOL	Life Test, 125C	(1000 hours)
HTSL	High Temp Storage Bake 170C	(170C / 420Hrs)
LI	Lead Fatigue	N/A
MQ	Manufacturability (Assembly)	(Approved by AT Site)
PD	Physical Dimensions	(per mechanical drawing)
PKG	Lead Finish Adhesion	N/A/-

Qualification Results

Data Displayed as: Number of lots / Total sam

Type:		ED	CDM	HE
Test Name / Condition:		Electrical Characterization	ESD - CDM	ES
Duration:		Per Datasheet Parameters)	1000V	20
Qual Device:	CD74HC00M96	Pass	1/3/0	
Qual Device:	CD74HC02M96	Pass	1/3/0	
Qual Device:	CD74HC04M96	Pass	1/3/0	
Qual Device:	CD74HC08M96	Pass	1/3/0	
Qual Device:	CD74HC10M96	Pass	1/3/0	
Qual Device:	CD74HC11M96	Pass	1/3/0	
Qual Device:	CD74HC125M96	Pass	1/3/0	
Qual Device:	CD74HC126M96	Pass	1/3/0	
Qual Device:	CD74HC132M96	Pass	1/3/0	
Qual Device:	CD74HC14M96	Pass	1/3/0	
Qual Device:	CD74HC20M96	Pass	1/3/0	
Qual Device:	CD74HC21M96	Pass	1/3/0	
Qual Device:	CD74HC27M96	Pass	1/3/0	
Qual	CD74HC30M96			

Qual Device:	SN74HC02DRG4	Pass	1/3/0	
Qual Device:	SN74HC03DR	Pass	1/3/0	
Qual Device:	SN74HC04DR	Pass	1/3/0	
Qual Device:	SN74HC04DRG3	Pass	1/3/0	
Qual Device:	SN74HC04DRG4	Pass	1/3/0	
Qual Device:	SN74HC08DR	Pass	1/3/0	
Qual Device:	SN74HC08DRG4	Pass	1/3/0	
Qual Device:	SN74HC10DR	Pass	1/3/0	
Qual Device:	SN74HC11DR	Pass	1/3/0	
Qual Device:	SN74HC125DR	Pass	1/3/0	
Qual Device:	SN74HC125DRG4	Pass	1/3/0	
Qual Device:	SN74HC126DR	Pass	1/3/0	
Qual Device:	SN74HC132DR	Pass	1/3/0	
Qual Device:	SN74HC14DR	Pass	1/3/0	
Qual Device:	SN74HC14DRG3	Pass	1/3/0	
Qual Device:	SN74HC14DRG4	Pass	1/3/0	
Qual Device:	SN74HC20DR	Pass	1/3/0	
Qual	SN74HC21DR			
Qual	SN74HC86DR			

- QBS: Qual By Similarity
- Qual Devices are qualified at LEVEL1-260CG
- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, T
- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and
- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/5(

For questions regarding this notice, e-mails can be sent to the 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
WW PCN Team	PCN_ww_admin_team@list.ti.com