12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20210413000.1
Qualification of new Fab site (MIHO8) using qualified Process Technology, Die Revision, Datasheet update and additional Assembly BOM options for select devices
Change Notification / Sample Request

Date: April 14, 2021
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments (TI). The details of this change are on the following pages, and are in alignment with our standard product change notification (PCN) process.

TI requires acknowledgement of 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 samples or additional data are required, requests must be received within 30 days of acknowledgement, given that samples are not built ahead of the change.

The Proposed First Ship date in this PCN letter is the earliest possible date that customers could receive the changed material. It is our commitment that the changed device will not ship before that date. If samples are requested within the 30 day sample request window, customers will still have 30-days to complete their evaluation regardless of the proposed 1st ship date.

This particular PCN is related to TI's previous announcement to close our two remaining factories with 150-millimeter production (DFAB in Dallas, Texas, and SFAB in Sherman, Texas). As referenced in the "reason for change" below, these changes are part of our multiyear plan to transition these products to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

For questions regarding this notice or to provide acknowledgement of this PCN, you may 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 local Field Sales Representative. As always, we thank you for your continued business.

PCN Team
SC Business Services

20210413000.1
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
TL16C550CPT	null
TL16C550CPTG4	null
TL16C550CIPTR	null
TL16C550CPFB	null
TL16C550CIFN	null
TL16C550CPTR	null
TL16C550CIPT	null
TL16C550CIFNR	null
TL16C550CFN	null

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

PCN Number:	20210413000.1	**PCN Date:**	Apr 14, 2021
Title:	Qualification of new Fab site (MIHO8) using qualified Process Technology, Die Revision, Datasheet update and additional Assembly BOM options for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Jul 14, 2021	**Estimated Sample Availability:**	Date provided at sample 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 a new fab & process technology (MIHO8, 3370A07SX3) and Assembly BOM options for selected devices as listed below in the product affected section.

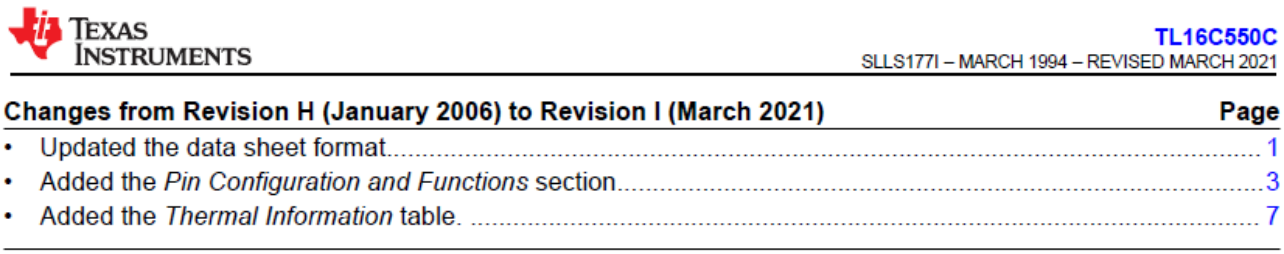
Current Fab Site			New Fab Site		
Fab Site	**Process**	**Wafer Diameter**	**Fab Site**	**Process**	**Wafer Diameter**
DL-LIN	50C40	200 mm	MIHO8	3370A07SX3	200 mm

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

The datasheets will be changing as a result of the above mentioned changes as shown below:

Device Family	Change From:	**Change To:**
TL16C550C	SLLS177H	SLLS177I

The product datasheet(s) is updated as seen in the change revision history below:



TEXAS INSTRUMENTS

TL16C550C
SLLS177I – MARCH 1994 – REVISED MARCH 2021

Changes from Revision H (January 2006) to Revision I (March 2021) **Page**

- Updated the data sheet format 1
- Added the *Pin Configuration and Functions* section 3
- Added the *Thermal Information* table. 7

These changes may be viewed at the datasheet link provided:
http://www.ti.com/product/TL16C550C

Construction differences are noted below:

Group 1 MIHO8/Process migration, Datasheet changes, BOM comparison:

	PHI (Current)	PHI (New)
Mount Compound	4042504	4211470
Mold Compound	4207207	4222198

Qual details are provided in the Qual Data Section.

Reason for Change:

These changes are part of our multiyear plan to transition products from our 150-milimeter / 200-millimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

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:

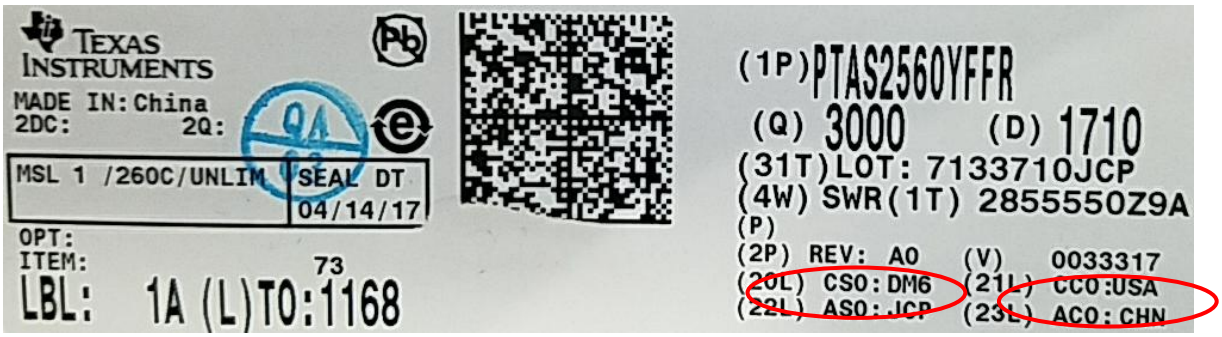
Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
DL-LIN	DLN	USA	Dallas
MIHO8	**MH8**	**JPN**	**Ibaraki**

Die Rev:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
A	**A**

Sample product shipping label (not actual product label)



Product Affected:

Group 1 Device list - MIHO8/Process migration, Datasheet changes, & AT/BOM Updates:

##TL16C550CFN	TL16C550CFNRG4	##TL16C550CIFNG4	TL16C550CIFNRG4
TL16C550CFNR	##TL16C550CIFN	TL16C550CIFNR	

Group 2 Device list - MIHO8/Process migration & Datasheet changes:

##TL16C550CIPT	TL16C550CIPTRG4	TL16C550CPFBR	TL16C550CPTR
##TL16C550CIPTG4	##TL16C550CPFB	##TL16C550CPT	TL16C550CPTRG4
TL16C550CIPTR	TL16C550CPFB-P	##TL16C550CPTG4	

- Tube devices are included in this notification to inform customers of the change to their replacement devices (tape and reel) and to have the opportunity to request samples, but will not be subject to this change and are included in EOL notice PDN# 20210413001.3

Qualification Report

Approve Date 30-Mar-2021

Qualification Results

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

	Type	Test Name / Condition	Duration	Qual Device: TL16C550CIFNR	QBS Product Reference: TL16C550DIPT	QBS Process Reference: SN0406039PW	QBS Package Reference: COPCG-AMD/V-MPC/S2	QBS Package Reference: COPCG-AQQ/V-MPC/S2	QBS Package Reference: TPS76933DBVR
	AC	Autoclave 121C	96 Hours	-	-	3/231/0	2/154/0	1/77/0	3/231/0
	CDM	ESD - CDM	1500 V	1/3/0	-	-	-	-	-
	ED	Electrical Characterization	Per Data Sheet Parameters	-	Pass	-	-	-	-
	ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	3/2400/0	-	-	-
	HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	2/154/0	-	3/231/0
	HBM	ESD - HBM	4000V	-	1/3/0	-	-	-	-
	HTOL	Life Test, 125C	1000 Hours	-	-	1/77/0	-	-	-
	HTOL	Life Test, 140C	649 Hours	-	-	2/154/0	-	-	-
	HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	3/230/0
	HTOL	Life Test, 155C	240 Hours	-	1/77/0	-	-	-	-
	HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	2/154/0	1/77/0	3/231/0
	HTSL	High Temp Storage Bake 175C	500 Hours	-	-	1/45/0	-	-	-
	LU	Latch Up	(Per JESD78)	-	1/5/0	-	-	-	-
	SD	Surface Mount solderability	Pb Free	-	-	-	1/22/0	-	-
	SD	Surface Mount solderability	Pb Free	-	-	-	1/22/0	-	-

	Type	Test Name / Condition	Duration	Qual Device: TL16C550CIFNR	QBS Product Reference: TL16C550DIPT	QBS Process Reference: SN0406039PW	QBS Package Reference: COPCG-AMD/V-MPC/S2	QBS Package Reference: COPCG-AQQ/V-MPC/S2	QBS Package Reference: TPS76933DBVR
	TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	2/154/0	1/77/0	3/231/0
	TS	Thermal Shock - 65/150C	500 Cycles	-	1/77/0	3/231/0	-	-	-
	WBP	Bond Pull	Wires	1/76/0	-	-	-	-	-
	WBS	Ball Bond Shear	Wires	1/76/0	-	-	-	-	-

- QBS: Qual By Similarity
- Qual Device TL16C550CIFNR is qualified at LEVEL3-260C

- 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 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/

Green/Pb-free Status:

Qualified Pb-Free (SMT) and Green

Qualification Report

Approve Date 17-Nov-2020

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

Type	Test Name / Condition	Duration	Qual Device: TL16C550CIPT	QBS Product Reference: TL16C550DIPT	QBS Product Reference: TL16C550DPTR	QBS Process Reference: SN0406039PW	QBS Package Reference: SN104950PAG	QBS Package Reference: TLV320AIC22PT
AC	Autoclave 121C	96 Hours	-	-	1/77/0	3/231/0	-	3/231/0
CDM	ESD - CDM	1500V	-	1/3/0	-	-	-	-
ED	Electrical Characterization	Per Data Sheet Parameters	Pass	-	-	-	-	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	3/2400/0	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	3/148/0	-
HBM	ESD - HBM	4000V	-	1/3/0	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	1/77/0	3/119/0	-
HTOL	Life Test, 140C	480 Hours	-	-	-	2/154/0	-	-
HTOL	Life Test, 155C	240 Hours	-	1/77/0	-	-	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	1/77/0	-	-	-
HTSL	High Temp Storage Bake 175C	500 Hours	-	-	-	1/45/0	-	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	-	-	-	-	3/231/0
LU	Latch Up	(Per JESD78)	-	1/5/0	-	-	-	-
TC	Temperature Cycle - 65/150C	500 Cycles	-	-	1/77/0	3/231/0	-	3/231/0
TS	Thermal Shock -65/150C	500 Cycles	-	-	1/77/0	3/231/0	-	3/231/0

- QBS: Qual By Similarity
- Qual Device TL16C550CIPT is qualified at LEVEL2-260C

- 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 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/

Green/Pb-free Status:

Qualified Pb-Free (SMT) and Green

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

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