12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20211109000.1
Conversion to TSMC 0.6/0.5um Hybrid Process
Change Notification / Sample Request

Date: November 09, 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. The details of this change are on the following pages.

Texas Instruments 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 this notification.

The changes discussed within this PCN will not take effect any earlier than the proposed first ship date 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 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.

PCN Team
SC Business Services

20211109000.1
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.

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

PCN Number:	20211109000.1	**PCN Date:**	November 09, 2021
Title:	Conversion to TSMC 0.6/0.5um Hybrid Process		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Feb 9, 2022	**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		

Notification Details

Description of Change:

This change notification is to announce the conversion from the current TSMC 0.6um back end metallization/REB Etch Back process to the TSMC 0.5um Tungsten plug back end process for the selected devices listed in the "Product Affected" section.

Change From	Change To
0.6um TSMC Backend Process IMD layer: PEOX + SOG DEP+ PEOX Metal: Ti / AlSiCu / TiN	0.5um TSMC Backend Process IMD layer: PEOX+SACVD-OX+PEOX+SOG dep. & Etch back+PEOX Metal: Via Plug TiN/WCVD/AlCu /TiN

Reason for Change:

Quality Improvement.

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

None.

Changes to product identification resulting from this notification:

None.

Product Affected:

OPA348AIDCKR	OPA348AIDCKRG4	OPA348AIDCKT	OPA348AIDCKTG4

Qualification Report

Approve Date 11-Oct-2021

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

Type	Test Name / Condition	Duration	Qual Device: OPA348AIDCKR	QBS Process Reference: OPA356AQDBVRQ1	QBS Package Reference: SN74LVC1G08QDCKRQ1	QBS Package Reference: TPS3808G33QDBVRQ1	QBS Package Reference: TPS3808G50QDBVRQ1
PC	PreCon Level 1	Level 1-260C	1/160/0	-	1/80/0	1/80/0	3/274/0
PC	PreCon Level 2	Level 1-260C	-	3/832/0	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	1/30/0	1/30/0	3/90/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	1/77/0	1/77/0	3/231/0
AC	Autoclave 121C	96 Hours	1/77/0	3/230/0	1/77/0	1/77/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	1/77/0	-	-	-
TC	Temperature Cycle - 65/150C Grade 1	500 Cycles	1/77/0	3/230/0	1/77/0	1/77/0	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	1/45/0	-	-
HTSL	High Temp Storage Bake 175C	500 Hours	-	1/45/0	-	1/45/0	1/45/0
HTOL	Life Test, 125C	1000 Hours	-	3/231/0	1/77/0	1/77/0	1/77/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	3/2400/0	1/800/0	-	-
HBM	ESD - HBM	4000 V	1/3/0	-	-	-	-
HBM	ESD - HBM	3000 V	-	1/3/0	-	-	-
HBM	ESD - HBM	2000 V	-	-	1/3/0	-	1/3/0
CDM	ESD - CDM	1500 V	1/3/0	-	-	-	-
CDM	ESD - CDM	1000 V	-	1/3/0	-	-	1/3/0
CDM	ESD - CDM	750 V	-	-	1/3/0	-	-
LU	Latch-up	Per JESD78	1/6/0	1/6/0	1/6/0	-	1/6/0
MQ	Manufacturability (Assembly)	(per mfg Ste. specifications)	-	Pass	Pass	-	-

- QBS: Qual By Similarity
- Qual Device OPA348AIDCKR is qualified at LEVEL1-260CG
- 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