12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20150506001

Qualification of RFAB and Vanguard as an additional wafer fab site options for select devices

Change Notification / Sample Request

Date: 5/20/2015
To: Newark/Farnell 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).

PCN Team
SC Business Services

20150506001
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
OPA364IDBVT	null
OPA364AIDBVT	null

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

PCN Number:	20150506001	**PCN Date:**	05/20/2015
Title:	Qualification of RFAB and Vanguard as an additional wafer fab site options for select devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	08/20/2015	**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:

This change notification is to announce the addition of RFAB and Vanguard as an additional wafer fab site options for the products listed in the product affected section of this document.

Current				**Additional**		
Device Group	**Current Fab Site**	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
1	ANAM-1	C05	200 mm	RFAB	C05	300 mm
2	TSMC Fab 2	VIS 0.6/0.5UM DPDM	200 mm	Vanguard	VIS 0.6/0.5UM DPDM	200 mm

Reason for Change:

Continuity of Supply

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

None

Changes to product identification resulting from this PCN:

Current

Chip Sites	Chip site code (20L)	Chip country code (21L)
ANAM-1	ANM	KOR
TSMC-WF2	TS2	TWN

New

Chip Site	Chip site code (20L)	Chip country code (21L)
RFAB	RFB	USA
Vanguard (VIS)	VAN	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

(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

Product Affected:

Group 1: Currently at ANAM-1, Adding RFAB		
TAS5534DGG	TAS5538DGG	TAS5733PHP
TAS5534DGGR	TAS5538DGGR	TAS5733PHPR
Group 2: Currently at TSMC-WF2, , Adding Vanguard		
OPA364AID	OPA364AIDR	OPA364IDG4
OPA364AIDBVR	OPA364ID	OPA364IDR
OPA364AIDBVRG4	OPA364IDBVR	OPA364IDRG4
OPA364AIDBVRYG	OPA364IDBVRG4	OPA2363AIRSVR
OPA364AIDBVT	OPA364IDBVT	
OPA364AIDBVTG4	OPA364IDBVTG4	

Qualification Report

C05 Die offload from DongBu to RFAB for TAS5538, TAS5534 and TAS5733
Approved 04/30/2015

Product Attributes

Attributes	Qual Device: TAS5538DGG	Qual Device: TAS5733PHP	QBS Process: VSP6825BZRC
Assembly Site	TAI	TAI	PHI
Package Family	TSSOP	HTQFP	JRBGA
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Site	RFAB	RFAB	RFAB HIJI
Wafer Fab Process	1833C05	1833C05 LBC7	1833C05 LBC4

- QBS: Qual By Similarity
- Qual Device TAS5538DGG is qualified at LEVEL3-260C
- Qual Device TAS5733PHP is qualified at LEVEL3-260C
- Device TAS5733PHP contains multiple dies.
- Device VSP6825BZRC contains multiple dies.

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

Type	Test Name / Condition	Duration	Qual Device: TAS5538DGG	Qual Device: TAS5733PHP	QBS Process: VSP6825BZRC
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/230/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	3/231/0
HTOL	Life Test, 140C	480 Hours	-	-	3/231/0

WBS	Ball Bond Shear	Wires	1/76/0	1/76/0	-
WBP	Bond Pull	Wires	1/76/0	1/76/0	-
HBM	ESD - HBM	2500 V	1/3/0	-	-
HBM	ESD - HBM	3000 V	-	1/3/0	-
CDM	ESD - CDM	1000 V	1/3/0	-	-
CDM	ESD - CDM	1500 V	-	1/3/0	-
LU	Latch-up	(per JESD78)	1/6/0	1/6/0	-
ED	Electrical Characterization	Per Data Sheet Parameters	Pass	Pass	-

Qualification Report

Transfer OPA364 from TSMC Fab2 to Vanguard aka VIS Fab - qualified process flow (0.6um/0.5um).

Approved 04/24/2015

Product Attributes

Attributes	Qual Device: OPA364AIDBVR	QBS Process: DDC112Y	QBS Process: TSC2046IPW	QBS Process: OPA2364AIDGK
Assembly Site	NFME	CRS	TAI	ASE SHANGHAI
Package Family	SOT	TQFP	TSSOP	VSSOP
Flammability Rating	UL 94 V-0	UL94 Class V-0	UL94 Class V-0	UL 94 V-0
Wafer Fab Site	VANGUARD	VANGUARD	VANGUARD	VANGUARD
Wafer Fab Process	VIS 0.6um DPDM	VIS 0.6um DPDM	VIS 0.6um DPDM	0.6/0.5 DPDM

- QBS: Qual By Similarity
- Qual Device OPA364AIDBVR is qualified at LEVEL2-260CG

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

Type	Test Name / Condition	Duration	Qual Device: OPA364AIDBVR	QBS Process: DDC112Y	QBS Process: TSC2046IPW	QBS Process: OPA2364AIDGK
HAST	Biased HAST, 130C/85%RH	96 Hours	-	1/77/0	1/77/0	-
AC	Autoclave 121C	96 Hours	-	1/77/0	1/77/0	-
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	1/77/0	3/231/0
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	1/77/0	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	1/77/0	-
HTSL	High Temp. Storage Bake, 175C	500 Hours	-	-	-	-

TS	Thermal Shock - 65/150C	500 Cycles	-	1/77/0	1/77/0	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-
HTOL	Life Test, 150C	300 Hours	-	1/77/0	1/77/0	3/231/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	-
WBS	Ball Bond Shear	Wires	-	1/50/0	-	-
EM	Electromigration	-	-	-	Pass	-
HBM	ESD - HBM	2500 V	1/3/0	-	-	2/6/0
CDM	ESD - CDM	1000 V	1/3/0	1/12/0	1/12/0	3/9/0
LU	Latch-up	(per JESD78)	1/6/0	1/6/0	1/6/0	3/18/0
ED	Auto Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	Pass
WBS	Bond Strength	Wires	-	-	1/70/0	-

Qualification Report

OPA2363 model on Vanguard (aka VIS FAB - qualified process flow 0.5um/0.6um) model transfer from TSMC FAB2

Approved 08/23/2013

Product Attributes

Attributes	Qual Device: OPA2363IDGS	QBS Process: DDC112Y	QBS Process: OPA343U	QBS Process: TSC2046IPW
Assembly Site	ASESH	CRS	OSE	TAI
Package Family	MSOP	TQFP	SOIC	TSSOP
Flammability Rating	UL 94 V-0	UL94 Class V-0	UL94 Class V-0	UL94 Class V-0
Wafer Fab Site	VANGUARD (VIS)	VANGUARD	VANGUARD	VANGUARD
Wafer Fab Process	VIS 0.6/0.5UM DPDM	0.5/0.6UM DPDM	0.5/0.6UM DPDM	0.5/0.6UM DPDM

- QBS: Qual By Similarity
- Qual Device OPA2363IDGS is qualified at LEVEL2-**260C**

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: OPA2363IDGS	QBS Process: DDC112Y	QBS Process: OPA343U	QBS Process: TSC2046IPW
HAST	**Biased HAST, 130C/85%RH	96 Hours	-	1/77/0	-	1/77/0
AC	**Autoclave 121C	96 Hours	-	1/77/0	1/77/0	1/77/0

TC	**Temperature Cycle, -65/+150C	500 Cycles	-	1/77/0	1/77/0	1/77/0
HTSL	**High Temp. Storage Bake, 150C	1000 Hours	-	1/77/0	-	-
HTSL	**High Temp. Storage Bake, 170C	420 Hours	-	-	-	1/77/0
TS	**Thermal Shock, -65C/+150C	500 Cycles	-	-	-	1/77/0
TS	**Thermal Shock, -65C/+150C	1000 Cycles	-	1/77/0	-	-
HTOL	High Temp Operating Life Test, 150C	300 Hours	-	1/116/0	1/240/0	1/77/0
HBM	ESD - HBM	1000 V	1/6/0	-	-	-
HBM	ESD - HBM	2000 V	-	1/3/0	-	1/3/0
HBM	ESD HBM	500 V	-	-	1/3/0	-
CDM	ESD CDM	500 V	1/3/0	1/3/0	1/3/0	1/3/0
LU	Latch-up	(per JESD78)	1/6/0	1/6/0	1/6/0	1/6/0
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	Pass

These notes apply to qualification of TAS5538, TAS5534 and TAS5733 OPA364 and OPA2363

- 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 regional contacts shown below, or you can contact 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