



**PCN# 20131025001C**

**Qualification of Vanguard Facility as an additional FAB site source for select  
OPA340xx and OPA2336xx devices in the 0.60UM Process Technology  
Change Notification / Sample Request**

**Date:** 5/20/2014  
**To:** MOUSER PCN

Dear Customer:

**The purpose of Revision C is to correct the devices listed in the Product Affected Section. We apologize for any confusion this may have created.**

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](mailto:PCN_ww_admin_team@list.ti.com)).

Sincerely,

PCN Team  
SC Business Services  
Phone: +1(214) 480-6037  
Fax: +1(214) 480-6659

**20131025001C**

**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.

<b>DEVICE</b>	<b>CUSTOMER PART NUMBER</b>
OPA2336UA	null
OPA340UA	null
OPA2336PA	null
OPA340PA	null
OPA340UAG4	null
OPA2336E/250	null
OPA2336EA/250	null
OPA2336UAG4	null
OPA2336U	null
OPA340PAG4	null
OPA2336P	null

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

<b>PCN Number:</b>	20131025001C			<b>PCN Date:</b>	05/16/2014												
<b>Title:</b>	Qualification of Vanguard Facility as an additional FAB site source for select OPA340xx and OPA2336xx devices in the 0.60UM process technology																
<b>Customer Contact:</b>	PCN Manager	<b>Phone:</b>	+1(214)480-6037		<b>Dept:</b> Quality Services												
<b>*Proposed 1<sup>st</sup> Ship Date:</b>		08/16/2014	<b>Estimated Sample Availability:</b>		Date provided at sample request.												
<b>Change Type:</b>																	
<input type="checkbox"/> Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site													
<input type="checkbox"/> Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material													
<input type="checkbox"/> Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process													
<input type="checkbox"/> Mechanical Specification	<input type="checkbox"/>	Test Site	<input checked="" type="checkbox"/>	Wafer Fab Site													
<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Materials													
			<input type="checkbox"/>	Wafer Fab Process													
<b>PCN Details</b>																	
<b>Description of Change:</b>																	
<p><b>The purpose of Revision C is to correct the device list in the Product Affected Section of this document. Page 2 of your notification letter was not affected by this error and should have listed your affected device(s) accurately.</b></p>																	
<p>This notification is to announce the qualification of the Vanguard fabrication facility as an additional wafer FAB source for select OPA340xx and OPA2336xx devices listed in "Product Affected" section.</p>																	
Currently Qualified Sites, Process, wafer dia.				<b>Additional Site, Process, wafer dia.</b>													
TMSC-WF2, 0.60UM, 200mm				<b>Vanguard, VIS .5UM/0.6UM DPDM, 200mm</b>													
<p>Qualification details are provided in the Qual Data Section.</p>																	
<b>Reason for Change:</b>																	
Continuity of Supply																	
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>																	
None																	
<b>Changes to product identification resulting from this PCN:</b>																	
<p><b>Current</b></p> <table border="1"> <tr> <td>Chip Site</td> <td>Chip site code (20L)</td> <td>Chip country code (21L)</td> </tr> <tr> <td>TSMC-WF2</td> <td>TS2</td> <td>TWN</td> </tr> </table> <p><b>New</b></p> <table border="1"> <tr> <td>Chip Site</td> <td>Chip site code (20L)</td> <td>Chip country code (21L)</td> </tr> <tr> <td><b>Vanguard (VIS)</b></td> <td><b>VAN</b></td> <td><b>TWN</b></td> </tr> </table>						Chip Site	Chip site code (20L)	Chip country code (21L)	TSMC-WF2	TS2	TWN	Chip Site	Chip site code (20L)	Chip country code (21L)	<b>Vanguard (VIS)</b>	<b>VAN</b>	<b>TWN</b>
Chip Site	Chip site code (20L)	Chip country code (21L)															
TSMC-WF2	TS2	TWN															
Chip Site	Chip site code (20L)	Chip country code (21L)															
<b>Vanguard (VIS)</b>	<b>VAN</b>	<b>TWN</b>															

Sample product shipping label (not actual product label)



#### Product Affected: Corrected Device List

OPA2336EA/250	OPA2336P	OPA340UA/2K5G4	OPA2336E/250G4
OPA2336EA/2K5G4	OPA340UA	OPA2336E/2K5G4	OPA2336UAG4
OPA2336UA/2K5G4	OPA2336U	OPA2336UA	OPA340PAG4
OPA340UA/2K5	OPA2336EA/2K5	OPA340NA/3KG4	OPA2336PG4
OPA340PA	OPA2336PA	OPA340NA/250	OPA2336UG4
OPA2336UA/2K5	OPA2336EA/250G4	OPA340NA/250G4	OPA340-W
OPA2336U/2K5	OPA2336E/2K5	OPA340NA/3K	OPA2336PAG4
OPA2336U/2K5G4	OPA340UAG4	OPA2336E/250	

#### Qualification Report

**OPA340 and OPA2336 will transfer from TSMC Fab 2 to Vanguard aka VIS FAB - qualified process flow (0.5um/0.6um) model transfer from TSMC FAB2**  
Approved04/26/2014

#### Product Attributes

Attributes	Qual Device: OPA2336EA	Qual Device: OPA340NA	QBS Process: DDC112Y	QBS Process: TSC2046IPW	QBS Process: OPA356AQDBVRQ1
Assembly Site	ASESH	NS2	CRS	TAI	NFME
Package Family	VSSOP	SOT	TQFP	TSSOP	SOT
Flammability Rating	UL 94 V-0	UL 94 V-0	UL94 Class V-0	UL94 Class V-0	UL 94 V-0
Wafer Fab Supplier	Vanguard	Vanguard	Vanguard	Vanguard	Vanguard
Wafer Fab Process	0.5/0.6UM	0.5/0.6UM	0.5/0.6UM	0.5/0.6UM	0.5/0.6UM

- QBS: Qual By Similarity
- Qual Device OPA2336EA is qualified at LEVEL2-260C
- Qual Device OPA340NA is qualified at LEVEL1-260C

Test Name / Condition	Duration	Qual Device: OPA2336EA	Qual Device: OPA340NA	QBS Process: DDC112Y	QBS Process: TSC2046IPW	QBS Process: OPA356AQDBVRQ1
Biased HAST, 130C/85%RH	96 Hours	-	-	1/77/0	1/77/0	2/154/0
Autoclave 121C	96 Hours	-	-	1/77/0	1/77/0	2/154/0
Unbiased HAST 130C/85%RH	96 Hours	-	-	-	-	1/77/0
Temperature Cycle, -65/150C	500 Cycles	-	-	1/77/0	1/77/0	2/153/0
High Temp Storage Bake 175C	500 Hours	-	-	-	-	1/45/0
High Temp Storage Bake 150C	1000 Hours			1/77/0	-	-
High Temp Storage Bake 170C	420 Hours	-	-	-	1/77/0	-
Life Test, 150C	1000 Hours	-	-	1/116/0	-	-
Life Test, 125C	1000 Hours	-	-	-	-	2/158/0
Early Life Failure Rate, 125C	48 Hours	-	-	-	-	3/2400/0
ESD - HBM	1000 V	1/3/0	1/3/0	1/3/0	1/3/0	-
ESD - CDM	250 V	1/3/0	1/3/0	1/3/0	1/3/0	1/3/0
Latch-up	(per JESD78)	1/6/0	1/6/0	1/6/0	-	1/6/0
Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	-	-	-	1/90/0
Electrical Characterization	Per Datasheet Parameters	1/Pass	1/Pass	1/Pass	1/Pass	-

- 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 your local Field Sales Representative.

Location	E-Mail
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAAsiaContact@list.ti.com">PCNAAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>