



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN20211212000.1
Qualify additional Assembly sites for select VSSOP devices
Change Notification / Sample Request

Date: December 16, 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](mailto:PCN_admin_team@list.ti.com)). For sample requests or sample related questions, contact your local Field Sales Representative.

Sincerely,

PCN Team
SC Business Services

20211212000.1
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.

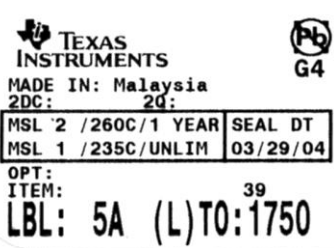
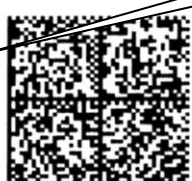
DEVICE	CUSTOMER PART NUMBER
LMV358AIDGKR	null
INA333AIDGKR	null
TMP1075DGKT	null
TPS60241DGKT	null
ADS7822EB/250	null
DAC8811ICDGKT	null
DAC8531E/2K5	null
OPA2348AIDGKR	null
OPA2320AIDGKT	null
TMP275AIDGKT	null
DAC8531E/250	null
TLV2171IDGKR	null
OPA2343EA/250	null
OPA1678IDGKR	null
TLV3542IDGKR	null
TLV9002IDGKR	null
ADS7822EB/2K5	null
OPA2340EA/2K5	null
TMP75BIDGKR	null
ADS7822EC/250	null
TLV9062IDGKR	null
OPA1692IDGKR	null
ADS7816EB/250	null
OPA2170AIDGKR	null
OPA189IDGKT	null
INA826AIDGKR	null
OPA2320AIDGKR	null
THS4551IDGKR	null
OPA1678IDGKT	null
INA819IDGKT	null
DAC8811IBDGKR	null
OPA2364AIDGKR	null
THS4531AIDGKR	null
TLV9062IDGKT	null
OPA2335AIDGKT	null
OPA2340EA/250	null
TLV2172IDGKT	null
OPA2376AIDGKR	null
TMP75CIDGKT	null
TPS386596L33DGKT	null
OPA209AIDGKR	null
THS4521IDGKT	null
OPA2354AIDGKT	null
TMP275AIDGKR	null
ADS7816E/250	null
INA333AIDGKT	null
OPA727AIDGKT	null
OPA2209AIDGKR	null
INA321E/250	null
OPA2377AIDGKR	null
OPA2210IDGKR	null
OPA2376AIDGKT	null
OPA2313IDGKR	null
OPA2350EA/250	null
OPA2353EA/250	null
TPS60241DGKR	null
INA826AIDGK	null

INA2180A4IDGKR	null
OPA2314AIDGKR	null
OPA2209AIDGKT	null
TLV9002IDGKT	null
OPA2313IDGK	null
OPA140AIDGKT	null
OPA2170AIDGK	null
TLV2172IDGKR	null
TMP1075DGKR	null
DAC8811IBDGKT	null
OPA2743EA/250	null
OPA2626IDGKR	null
OPA350EA/250	null
DAC7512E/250	null
OPA2735AIDGKR	null
DAC8501E/250	null
ADS7822E/250	null
OPA2171AIDGKR	null
TLV2170IDGKR	null
OPA2364IDGKT	null
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OPA2834IDGKT	null
OPA2322AIDGKT	null
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OPA2336EA/250	null
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LM358LVIDGKR	null
TLV6002IDGKT	null
OPA2141AIDGKT	null
TLV6002IDGKR	null
MCP6292IDGKT	null
OPA2343EA/2K5	null
MCP6292IDGKR	null
TLV2376IDGKT	null
OPA187IDGKR	null
TLV2170IDGKT	null
OPA189IDGKR	null
OPA2141AIDGKR	null
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OPA140AIDGKR	null
INA301A3IDGKR	null
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DAC8550IDGKT	null
INA2180A2IDGKR	null
OPA2735AIDGKT	null
THS4561IDGKT	null
OPA2322AIDGKR	null
TPS2001CDGKR	null
TMP175AIDGKR	null
LMV358AIDGKT	null
OPA2210IDGKT	null
TMP75CIDGKR	null
TLV2314IDGKR	null
ADS7816E/2K5	null
OPA2301AIDGKR	null
DAC7513E/250	null
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OPA1692IDGKT	null
TMP75BIDGKT	null
DAC8801IDGKR	null
OPA2348AIDGK	null
OPA1637DGKR	null
OPA827AIDGKR	null
OPA2364AIDGKT	null
TLV9052IDGKR	null

TLV2171IDGKT	null
TLV2376IDGKR	null
OPA2316IDGKR	null
INA332AIDGKT	null
INA821IDGKR	null
OPA188AIDGKT	null
INA827AIDGK	null
DAC8801IDGKT	null
OPA380AIDGKT	null

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

PCN Number:	20211212000.1		PCN Date:	December 16, 2021												
Title:	Qualify additional Assembly sites for select VSSOP devices															
Customer Contact:	PCN Manager	Dept:	Quality Services													
Proposed 1st Ship Date:	Mar 16, 2022	Estimated Sample Availability:	Provided upon Request													
Change Type:																
☒	Assembly Site	☐	Design	☐												
☐	Assembly Process	☐	Data Sheet	☐												
☒	Assembly Materials	☐	Part number change	☐												
☐	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													
PCN Details																
Description of Change:																
Texas Instruments Incorporated is announcing the qualification of additional Assembly sites for devices listed below in the product affected section. Construction information and all assembly sites are as follows:																
<table border="1"> <thead> <tr> <th colspan="2">VSSOP (MSOP) build sites</th> </tr> </thead> <tbody> <tr> <td>Assembly Sites</td> <td>ASESHAT, HFTFAT, HNA, TIEM, TIM, UTAC</td> </tr> <tr> <td>Lead Finish</td> <td>NiPdAu; NiPdAuAg; MatteSn</td> </tr> <tr> <td>Mold Compound</td> <td> SID #450179 SID #EN2000631 SID #EN2000763 SID #R-30 4226323 8096859 </td> </tr> <tr> <td>Mount Compound</td> <td> SID #A-18 SID #EY1000063 SID #PZ0031 SID #400180 4147858 8075531 </td> </tr> <tr> <td>Bond wire</td> <td>Au, Cu</td> </tr> </tbody> </table>					VSSOP (MSOP) build sites		Assembly Sites	ASESHAT, HFTFAT, HNA, TIEM, TIM, UTAC	Lead Finish	NiPdAu; NiPdAuAg; MatteSn	Mold Compound	SID #450179 SID #EN2000631 SID #EN2000763 SID #R-30 4226323 8096859	Mount Compound	SID #A-18 SID #EY1000063 SID #PZ0031 SID #400180 4147858 8075531	Bond wire	Au, Cu
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Bond wire	Au, Cu															
Upon expiration of this PCN, TI will combine lead free solutions in a single standard part number, for example; INA821IDGKT – can ship with both Matte Sn and NiPdAu. When available customers may specify NiPdAu finish by ordering the part with the G4 suffix, e.g. INA821IDGKT.”																

Reason for Change:																								
Continuity of Supply																								
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):																								
None																								
Impact on Environmental Ratings																								
Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">RoHS</td> <td style="width: 25%; text-align: center;">REACH</td> <td style="width: 25%; text-align: center;">Green Status</td> <td style="width: 25%; text-align: center;">IEC 62474</td> </tr> <tr> <td style="text-align: center;">☒ No Change</td> <td style="text-align: center;">☒ No Change</td> <td style="text-align: center;">☒ No Change</td> <td style="text-align: center;">☒ No Change</td> </tr> </table>				RoHS	REACH	Green Status	IEC 62474	☒ No Change	☒ No Change	☒ No Change	☒ No Change													
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☒ No Change	☒ No Change	☒ No Change	☒ No Change																					
Changes to product identification resulting from this PCN:																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3">Assembly Site</td> </tr> <tr> <td style="width: 33%;">ASESH</td> <td style="width: 33%;">Assembly Site Origin (22L)</td> <td style="width: 33%;">ASO: PHI</td> </tr> <tr> <td>HFTF</td> <td>Assembly Site Origin (22L)</td> <td>ASO: HFT</td> </tr> <tr> <td>HNA</td> <td>Assembly Site Origin (22L)</td> <td>ASO: HNT</td> </tr> <tr> <td>UTAC</td> <td>Assembly Site Origin (22L)</td> <td>ASO: NS2</td> </tr> <tr> <td>TI Melaka (TIEM)</td> <td>Assembly Site Origin (22L)</td> <td>ASO: CU6</td> </tr> <tr> <td>TIM (Malaysia)</td> <td>Assembly Site Origin (22L)</td> <td>ASO: MLA</td> </tr> </table>				Assembly Site			ASESH	Assembly Site Origin (22L)	ASO: PHI	HFTF	Assembly Site Origin (22L)	ASO: HFT	HNA	Assembly Site Origin (22L)	ASO: HNT	UTAC	Assembly Site Origin (22L)	ASO: NS2	TI Melaka (TIEM)	Assembly Site Origin (22L)	ASO: CU6	TIM (Malaysia)	Assembly Site Origin (22L)	ASO: MLA
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TIM (Malaysia)	Assembly Site Origin (22L)	ASO: MLA																						
Sample product shipping label (not actual product label)  TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 20: MSL 2 / 260C/1 YEAR SEAL DT MSL 1 / 235C/UNLIM 03/29/04 OPT: ITEM: 39 LBL: 5A (L)T0:1750  E4/G4: NiPdAu E3/G3: Matte Sn (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: <u>MLA</u> (23L) ACO: MYS																								
Product Affected:																								
ADS7816E/250	INA819IDGKT	OPA2313IDGK	OPA827AIDGKR																					
ADS7816E/2K5	INA821IDGKR	OPA2313IDGKR	OPA827AIDGKT																					
ADS7816EB/250	INA821IDGKT	OPA2314AIDGK	REG711EA-2.5/250																					
ADS7816EB/2K5	INA826AIDGK	OPA2314AIDGKR	REG711EA-2.5/2K5																					
ADS7816EC/250	INA826AIDGKR	OPA2316IDGK	REG711EA-3.3/250																					
ADS7816EC/2K5	INA827AIDGK	OPA2316IDGKR	REG711EA-3/250																					
ADS7822E/250	INA827AIDGKR	OPA2320AIDGKR	REG711EA-3/2K5																					
ADS7822E/2K5	LM2904LVIDGKR	OPA2320AIDGKT	REG711EA-5/250																					
ADS7822EB/250	LM358LVIDGKR	OPA2322AIDGKR	REG711EA-5/2K5																					
ADS7822EB/2K5	LMV358AIDGKR	OPA2322AIDGKT	SN1605025IDGKR																					
ADS7822EC/250	LMV358AIDGKT	OPA2325IDGKR	SN1711004DGKR																					
ADS7822EC/2K5	MCP6292IDGKR	OPA2325IDGKT	SN1812003DGKR																					

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BQ771818DGKR	OPA140AIDGKT	OPA2336E/2K5	THS4521IDGKT
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DAC7512E/250	OPA141AIDGKT	OPA2336EA/2K5	THS4531AIDGKR
DAC7512E/2K5	OPA145IDGKR	OPA2340EA/250	THS4531IDGK
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DAC8501E/2K5	OPA1637DGKR	OPA2343EA/250	THS4561IDGKR
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DAC8531E/2K5	OPA1641AIDGKR	OPA2344EA/250	TLV2170IDGKR
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DAC8550IBDGKT	OPA1642AIDGKR	OPA2345EA/250	TLV2171IDGKR
DAC8550IDGKR	OPA1642AIDGKT	OPA2348AIDGK	TLV2171IDGKT
DAC8550IDGKT	OPA1678IDGKR	OPA2348AIDGKR	TLV2172IDGKR
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INA2180A4IDGKT	OPA192IDGKR	OPA2376AIDGKR	TLV6002IDGKT
INA2290A1IDGKR	OPA192IDGKT	OPA2376AIDGKT	TLV9002IDGKR
INA2290A1IDGKT	OPA196IDGKR	OPA2377AIDGKR	TLV9002IDGKT
INA2290A2IDGKR	OPA196IDGKT	OPA2377AIDGKT	TLV9052IDGKR
INA2290A2IDGKT	OPA197IDGKR	OPA2626IDGKR	TLV9062IDGKR
INA2290A3IDGKR	OPA197IDGKT	OPA2626IDGKT	TLV9062IDGKT
INA2290A3IDGKT	OPA202IDGKR	OPA2703EA/250	TMP1075DGKR
INA2290A4IDGKR	OPA202IDGKT	OPA2703EA/2K5	TMP1075DGKT
INA2290A4IDGKT	OPA207IDGKR	OPA2704EA/250	TMP141AIDGKR
INA2290A5IDGKR	OPA207IDGKT	OPA2705EA/250	TMP141AIDGKT
INA2290A5IDGKT	OPA209AIDGKR	OPA2735AIDGKR	TMP175AIDGKR
INA301A1IDGKR	OPA209AIDGKT	OPA2735AIDGKT	TMP175AIDGKT
INA301A1IDGKT	OPA211AIDGKR	OPA2743EA/250	TMP275AIDGKR
INA301A2IDGKT	OPA211AIDGKT	OPA2743EA/2K5	TMP275AIDGKT
INA301A3IDGKR	OPA211IDGKR	OPA2810IDGKT	TMP75BIDGKR
INA301A3IDGKT	OPA211IDGKT	OPA2834IDGKR	TMP75BIDGKT

INA317IDGKR	OPA2141AIDGKR	OPA2834IDGKT	TMP75CIDGKR
INA317IDGKT	OPA2141AIDGKT	OPA2837IDGKR	TMP75CIDGKT
INA321E/250	OPA2170AIDGK	OPA2837IDGKT	TPS2000CDGK
INA321E/2K5	OPA2170AIDGKR	OPA2863IDGKR	TPS2000CDGKR
INA321EA/250	OPA2171AIDGK	OPA337EA/250	TPS2001CDGK
INA321EA/2K5	OPA2171AIDGKR	OPA350EA/250	TPS2001CDGKR
INA322EA/250	OPA2172IDGK	OPA350EA/2K5	TPS386596L33DGKT
INA322EA/2K5	OPA2172IDGKR	OPA380AIDGKR	TPS60240DGKR
INA331AIDGKR	OPA2202IDGKR	OPA380AIDGKT	TPS60240DGKT
INA331AIDGKT	OPA2202IDGKT	OPA381AIDGKR	TPS60241DGKR
INA331IDGKT	OPA2209AIDGKR	OPA381AIDGKT	TPS60241DGKT
INA332AIDGKR	OPA2209AIDGKT	OPA388IDGKT	TPS60242DGKT
INA332AIDGKT	OPA2210IDGKR	OPA726AIDGKT	TPS60243DGKR
INA333AIDGKR	OPA2210IDGKT	OPA727AIDGKR	TPS60243DGKT
INA333AIDGKT	OPA2301AIDGKR	OPA727AIDGKT	TSV912AIDGKR
INA819IDGKR	OPA2301AIDGKT	OPA728AIDGKT	TSV912AIDGKT

VSSOP Qualification Report

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

	Stress Test	Duration	HFTF LM5008MM/NOPB	ASESH THS4304DGK
TC	Temperature Cycling -65/150C	500 Cycles	3/231/0	3/231/0
HAST	Biased HAST 130C/85%RH	96 hours	3/231/0	3/231/0
THB	Temperature Humidity Bias, 85C/85%RH	1000 hours	-	-
HTSL	High Temp. Storage Bake 150C	1000 hours	-	-
HTSL	High Temp. Storage Bake 170C	420 hours	3/231/0	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 hours	3/231/0	-
AC	Autoclave 121C	96 hours	-	3/231/0
SD	Solderability	8 Hour Steam age or 155C Dry Bake	3/66/0 (PGA308AIDGSR)	3/66/0 (THS4304DGK)
MQ	Manufacturability	-	Pass	Pass

	Stress Test	Duration	HNA TPS77301DGK	TIEM LM3489QMM
TC	Temperature Cycling -65/150C	500 Cycles	3/231/0	3/231/0
HAST	Biased HAST 130C/85%RH	96 hours	3/231/0	-
THB	Temperature Humidity Bias, 85C/85%RH	1000 hours	-	3/231/0
HTSL	High Temp. Storage Bake 150C	1000 hours	3/231/0	1/77/0
HTSL	High Temp. Storage Bake 170C	420 hours	-	-
UHAST	Unbiased HAST, 130C/85%RH	96 hours	-	-
AC	Autoclave 121C	96 hours	3/231/0	3/231/0
SD	Solderability	8 Hour Steam age or 155C Dry Bake	3/66/0 (TS5A23160DGSR)	3/66/0 (LM2660MM/NOPB)
MQ	Manufacturability	-	Pass	Pass

	Stress Test	Duration	TIM OPA2206ADGK OPA2205ADGK OPA2145IDGK	UTAC TPS22958DGK
TC	Temperature Cycling -65/150C	500 Cycles	3/231/0	3/231/0
HAST	Biased HAST 130C/85%RH	96 hours	3/231/0	3/231/0 (Note a)
THB	Temperature Humidity Bias, 85C/85%RH	1000 hours	-	-
HTSL	High Temp. Storage Bake 150C	1000 hours	-	-
HTSL	High Temp. Storage Bake 170C	420 hours	3/231/0	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 hours	3/231/0	-
AC	Autoclave 121C	96 hours	-	3/231/0
SD	Solderability	8 Hour Steam age or 155C Dry Bake	3/66/0 (LMH5485DGKSEP)	3/66/0 (TPS61085TDGKRQ1)
MQ	Manufacturability	-	Pass	Pass

LM5008MM/NOPB, THS4304DGK, TPS77301DGK, LM3489QMM, TPS22958DGK, INA159AIDGK are qualified at L1-260C MSL rating.
OPA2206ADGK, OPA2205ADGK, OPA2145IDGK are qualified at L2-260C MSL rating.

Note a – 2 lots of Biased HAST were collected on INA159AIDGK

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, and HTSL, as applicable
- The following are equivalent HTSL options based on activation energy of 0.7eV: 150C/1k Hours, and 170C/420 Hours

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	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com

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