

| | | | | | |
|--|--|---|---|--------------------------|---------------------|
| PCN Number: | 20231127002.1 | | | PCN Date: | November 27, 2023 |
| Title: | Qualification of HFTF as an alternate Assembly site for select devices | | | | |
| Customer Contact: | Change Management Team | | Dept: | Quality Services | |
| Proposed 1st Ship Date: | Feb 28, 2024 | | Sample requests accepted until: | Dec 28, 2023* | |
| *Sample requests received after Dec 28, 2023 will not be supported. | | | | | |
| Change Type: | | | | | |
| <input checked="" type="checkbox"/> | Assembly Site | <input type="checkbox"/> | Design | <input type="checkbox"/> | Wafer Bump Material |
| <input type="checkbox"/> | Assembly Process | <input type="checkbox"/> | Data Sheet | <input type="checkbox"/> | Wafer Bump Process |
| <input checked="" type="checkbox"/> | Assembly Materials | <input type="checkbox"/> | Part number change | <input type="checkbox"/> | Wafer Fab Site |
| <input type="checkbox"/> | Mechanical Specification | <input type="checkbox"/> | Test Site | <input type="checkbox"/> | Wafer Fab Material |
| <input checked="" type="checkbox"/> | Packing/Shipping/Labeling | <input type="checkbox"/> | Test Process | <input type="checkbox"/> | Wafer Fab Process |
| PCN Details | | | | | |
| Description of Change: | | | | | |
| Texas Instruments Incorporated is announcing the qualification of HFTF as an additional Assembly site for set of devices listed below. Construction differences are as follows: | | | | | |
| | Hana | HFTF | | | |
| Mold Compound | 450596 | R-30 | | | |
| Mount Compound | 400180 | A-18 | | | |
| Lead finish | NiPdAu | Matte Sn | | | |
| <p>Upon expiration of this PCN, TI will combine lead free solutions in a single <u>standard part number</u>, for example; <u>PCA9306DCTR</u>– can ship with both Matte Sn and NiPdAu.</p> <p>Example:</p> <ul style="list-style-type: none"> – Customer order for 7500 units of PCA9306DCTR with 2500 units SPQ (Standard Pack Quantity per Reel). – TI can satisfy the above order in one of the following ways. <ul style="list-style-type: none"> I. 3 Reels of NiPdAu finish. II. 3 Reels of Matte Sn finish III. 2 Reels of Matte Sn and 1 reel of NiPdAu finish. IV. 2 Reels of NiPdAu and 1 reel of Matte Sn finish. | | | | | |
| Reason for Change: | | | | | |
| Supply continuity | | | | | |
| Anticipated impact on Form, Fit, 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. | | | | | |
| RoHS | REACH | Green Status | IEC 62474 | | |
| <input checked="" type="checkbox"/> No Change | <input checked="" type="checkbox"/> No Change | <input checked="" type="checkbox"/> No Change | <input checked="" type="checkbox"/> No Change | | |
| Changes to product identification resulting from this PCN: | | | | | |

| Assembly Site | Assembly Site Origin (22L) | Assembly Country Code (23L) | Assembly City |
|---------------|-------------------------------|--------------------------------|---------------|
| Hana | HNT | THA | Ayutthaya |
| HFTF | HFT | CHN | Hefei |

Sample product shipping label (not actual product label)

G4 = NiPdAu
G3 = Matte Sn

| Product Affected: | |
|-------------------|-------------|
| PCA9306DCTR | PCA9306DCTT |

Qualification Report

Approve Date 25-January-2023

Qualification Results

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

| Type | # | Test Name | Condition | Duration | Qual Device: PCA9306DCTR | QBS Reference: TPS51217DSCR | QBS Reference: OPA2388QDGKRQ1 |
|------|----|-------------------------------|---|------------|-----------------------------|--------------------------------|----------------------------------|
| HAST | A2 | Biased HAST | 130C/85%RH | 96 Hours | - | 3/231/0 | 3/231/0 |
| UHA | A3 | Autoclave | 121C/15psig | 96 Hours | 3/231/0 | 3/231/0 | - |
| TC | A4 | Temperature Cycle | -65C/150C | 500 Cycles | 3/231/0 | 3/231/0 | 3/231/0 |
| HTSL | A6 | High Temperature Storage Life | 170C | 420 Hours | 3/231/0 | 3/231/0 | - |
| HTOL | B1 | Life Test | 125C | 1000 Hours | - | - | 3/231/0 |
| HTOL | B1 | Life Test | 135C | 635 Hours | - | 3/231/0 | - |
| WBS | C1 | Ball Shear | 76 balls, 3 units min | Wires | 3/228/0 | - | - |
| WBP | C2 | Bond Pull | 76 Wires, 3 units min | Wires | 3/228/0 | - | - |
| SD | C3 | PB Solderability | Precondition w.155C Dry Bake (4 hrs +/- 15 minutes) | - | - | - | 3/45/0 |
| SD | C3 | PB-Free Solderability | Precondition w.155C Dry Bake (4 hrs +/- 15 minutes) | - | - | - | 3/45/0 |
| PD | C4 | Physical Dimensions | Cpk>1.67 | - | - | - | 3/30/0 |
| ESD | E2 | ESD CDM | - | 1500 Volts | - | 3/9/0 | 1/3/0 |
| ESD | E2 | ESD CDM | - | 250 Volts | 1/3/0 | - | - |
| ESD | E2 | ESD HBM | - | 1000 Volts | 1/3/0 | - | - |
| ESD | E2 | ESD HBM | - | 2000 Volts | - | 3/9/0 | - |
| ESD | E2 | ESD HBM | - | 4000 Volts | - | - | 1/3/0 |
| LU | E4 | Latch-Up | Per JESD78 | - | 1/3/0 | 3/18/0 | 1/6/0 |
| CHAR | E5 | Electrical Characterization | Per Datasheet Parameters | - | 1/30/0 | 3/60/0 | - |
| CHAR | E5 | Electrical Distributions | Cpk>1.67 Room, hot, and cold | - | - | - | 3/90/0 |

QBS: Qual By Similarity

Qual Device PCA9306DCTR is qualified at MSL1 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 Change Management team or your local Field Sales Representative.

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