



**12500 TI Boulevard, MS 8640, Dallas, Texas 75243**

**PCN# 20120917005**  
**Material Change of Solder Attach for TO3 Metal Can Substrate Backside Metal**  
**and Qualify New Snowflake Substrate**  
**Change Notification / Sample Request**

**Date:** 9/20/2012  
**To:** MOUSER 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](mailto:PCN_ww_admin_team@list.ti.com)).

Sincerely,

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

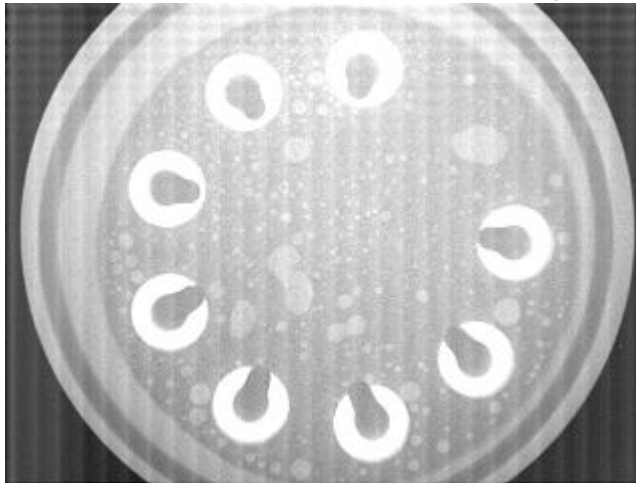
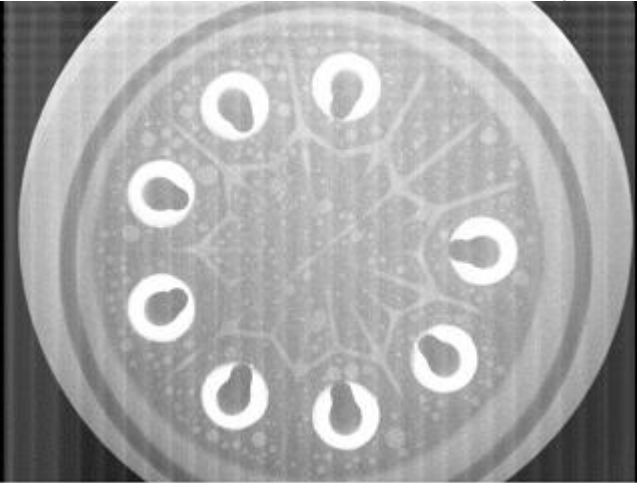
**20120917005**  
**Attachment: 1**

**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> |
|---------------|-----------------------------|
| OPA541AM      | null                        |
| OPA541BM      | null                        |

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

|   |                     |   |                           |  |                                     |                                 |  |
|---|---------------------|---|---------------------------|--|-------------------------------------|---------------------------------|--|
| <b>PCN Number:</b>  |                     | 20120917005   |                           | <b>PCN Date:</b>   |                                     | 09/20/2012                      |  |
| <b>Title:</b>   |                     | Qualify Material Change of Solder Attach for TO3 Metal Can Substrate Backside Metal and Qualify New Snowflake Substrate |                           |  |                                     |                                 |  |
| <b>Customer Contact:</b>  |                     | <a href="#">PCN Manager</a>   |                           | <b>Phone:</b>  |                                     | +1(214)480-6037                 |  |
|   |                     |   |                           | <b>Dept:</b>   |                                     | Quality Services                |  |
| <b>Proposed 1<sup>st</sup> Ship Date:</b>   |                     | 12/20/2012  |                           | <b>Estimated Sample Availability:</b>  |                                     | Date Provided at Sample Request |  |
| <b>Change Type:</b>   |                     |   |                           |  |                                     |                                 |  |
| <input type="checkbox"/>  | Assembly Site       | <input checked="" type="checkbox"/>   | Assembly Process          | <input checked="" type="checkbox"/>  | Assembly Materials                  |                                 |  |
| <input type="checkbox"/>  | Design              | <input type="checkbox"/>  | Electrical Specification  | <input type="checkbox"/>   | Mechanical Specification            |                                 |  |
| <input type="checkbox"/>  | Test Site           | <input type="checkbox"/>  | Packing/Shipping/Labeling | <input type="checkbox"/>   | Test Process                        |                                 |  |
| <input type="checkbox"/>  | Wafer Bump Site     | <input type="checkbox"/>  | Wafer Bump Material       | <input type="checkbox"/>   | Wafer Bump Process                  |                                 |  |
| <input type="checkbox"/>  | Wafer Fab Site      | <input type="checkbox"/>  | Wafer Fab Materials       | <input type="checkbox"/>   | Wafer Fab Process                   |                                 |  |
| <b>PCN Details</b>  |                     |   |                           |  |                                     |                                 |  |
| <b>Description of Change:</b>   |                     |   |                           |  |                                     |                                 |  |
| Qualification of change in solder flux and solder preform for TO3 metal can substrate backside metal and new substrate artwork change for substrate backside metal using a snowflake pattern. Devices will remain in their current assembly facilities and material differences are shown in the following table: |                     |   |                           |  |                                     |                                 |  |
| <b>Device</b>   | <b>Material</b>     | <b>Current</b>  | <b>Material</b>           | <b>Standard Substrate</b>  | <b>New (with Snowflake Pattern)</b> |                                 |  |
| <b>OPA541</b>   | <b>Substrate</b>    | MC01569-CMMT/A  | <b>Substrate</b>          | MC01569-CMMT/A4  | MC01569-CMMT/A4                     |                                 |  |
|   | <b>Solder Flux</b>  | 039090010   | <b>Solder Flux</b>        | 039090009  | 039090009                           |                                 |  |
|   | <b>Solder Paste</b> | 6036001   | <b>Solder Preform</b>     | 039090008  | 039090008                           |                                 |  |
| <b>OPA2541</b>  | <b>Substrate</b>    | MC01618-DMMT/A  | <b>Substrate</b>          | MC01618-DMMT/A4  | MC01618-DMMT/A4                     |                                 |  |
|   | <b>Solder Flux</b>  | 039090010   | <b>Solder Flux</b>        | 039090009  | 039090009                           |                                 |  |
|   | <b>Solder Paste</b> | 6036001   | <b>Solder Preform</b>     | 039090008  | 039090008                           |                                 |  |
| Qualification results are provided in the Qualification Section.  |                     |   |                           |  |                                     |                                 |  |
| <b>Reason for Change:</b>   |                     |   |                           |  |                                     |                                 |  |
| Two changes:<br>1) Discontinuation of solder flux and solder paste from vendor and<br>2) Snowflake substrate artwork reduces solder attach voiding when attaching substrate to header of TO3 package.   |                     |   |                           |  |                                     |                                 |  |
| <b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>   |                     |   |                           |  |                                     |                                 |  |
| Improve bond of substrate to header for TO3 Metal Can products.<br>Standard Substrate: MC01616-DMMT/A      Snowflake Substrate: MC01618-DMMT/A4   |                     |   |                           |  |                                     |                                 |  |
|   |                     |   |                           |  |                                     |                                 |  |

**Changes to product identification resulting from this PCN:**

None.

**Product Affected:**

|           |            |          |          |
|-----------|------------|----------|----------|
| OPA2541AM | OPA2541SM  | OPA541AM | OPA541SM |
| OPA2541BM | OPA2541SMQ | OPA541BM |          |

**Qualification Data Approved 09/05/2012**

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

**Qual Vehicle: OPA2541SMQ (MSL-Not Classified)****Package Construction Details**

|                                 |                |                        |           |
|---------------------------------|----------------|------------------------|-----------|
| <b>Wafer Fab Site:</b>          | SFAB           | <b>Solder Flux:</b>    | 039090009 |
| <b>Fab Process, Pin-Family:</b> | 634G, 8-LMF    | <b>Solder Preform:</b> | 039090008 |
| <b>Standard Substrate:</b>      | MC01618-DMMT/A |                        |           |

**Qualification:** ☐ Plan ☒ Test Results

| Reliability Test         | Conditions   | Sample Size / Fail |       |       |
|--------------------------|--|--------------------|-------|-------|
|                          |  | Lot1               | Lot2  | Lot3  |
| S1 Mechanical Shock      | Condition B 1500 g, 0.5 ms Y1 6 pulses             | 32/0               | 32/0  | 32/0  |
| S1 Vibration             | Condition A 20g, 20-2000 hz All 3 planes (x, y, z) | 32/0               | 32/0  | 32/0  |
| S1 Constant Acceleration | Condition E 30 kg, Y1 only, 1 min                  | 31/0               | 32/0  | 32/0  |
| S1 Fine and Gross leak   | -  | 31/0               | 32/0  | 32/0  |
| S1 Electrical Test       | Room temperature                                   | 31/0               | 31/0  | 32/0  |
| Temperature Cycle        | -65C/+150C (500 Cycle)                             | 75/0               | 76/0  | 77/0  |
| Manufacturability        | (per mfg. Site specification)                      | PASS               | PASS  | PASS  |
| X-ray                    | Inspect for solder attach                          | 113/0              | 115/0 | 115/0 |

Additional Qual Test Comments: Test Sequence S1 must follow the flow sequence shown above.

**Qualification Data Approved 09/17/2012**

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

**Qual Vehicle: OPA2541SMQ (MSL-Not Classified)****Package Construction Details**

|                                 |                 |                        |           |
|---------------------------------|-----------------|------------------------|-----------|
| <b>Wafer Fab Site:</b>          | SFAB            | <b>Solder Flux:</b>    | 039090009 |
| <b>Fab Process, Pin-Family:</b> | 634G, 8-LMF     | <b>Solder Preform:</b> | 039090008 |
| <b>Snowflake Substrate:</b>     | MC01618-DMMT/A4 |                        |           |

| Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results |  |                    |       |       |
|---|--|--------------------|-------|-------|
| Reliability Test  | Conditions   | Sample Size / Fail |       |       |
|   |  | Lot1               | Lot2  | Lot3  |
| S1 Mechanical Shock   | Condition B 1500 g, 0.5 ms Y1 6 pulses             | 32/0               | 32/0  | 32/0  |
| S1 Vibration  | Condition A 20 g 20-2000 hz All 3 planes (x, y, z) | 32/0               | 32/0  | 32/0  |
| S1 Constant Acceleration  | Condition E 30 kg, Y1 only 1 min                   | 32/0               | 32/0  | 32/0  |
| S1 Fine and Gross leak  | -  | 32/0               | 32/0  | 32/0  |
| S1 Electrical Test  | Room temperature                                   | 31/0               | 32/0  | 31/0  |
| Temperature Cycle   | -65C/+150C (500 Cycle)                             | 76/0               | 77/0  | 76/0  |
| Manufacturability   | (per mfg. Site specification)                      | PASS               | PASS  | PASS  |
| X-ray   | Inspect for solder attach                          | 125/0              | 125/0 | 125/0 |
| Additional Qual Test Comments: Test Sequence S1 must follow the flow sequence shown above.    |  |                    |       |       |

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:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>         |
| Japan        | <a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>       |