



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

**PCN# 20130926000**  
**Qualification of NFME as Additional Assembly/Test Site**  
**for TPD4S009DBVR device**  
**Change Notification / Sample Request**

**Date:** 9/28/2013  
**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




**20130926000**  
**Attachment: 1**

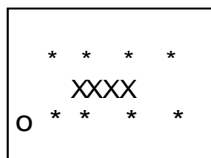
**Products Affected:**

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> |
|---------------|-----------------------------|
| TPD4S009DBVR  | null                        |

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

| <b>PCN Number:</b>  | 20130926000  |  |                                       | <b>PCN Date:</b>                | 09/27/2013                    |               |     |      |                  |                            |           |  |                            |                |             |        |          |
|---|--|--|---------------------------------------|---------------------------------|-------------------------------|---------------|-----|------|------------------|----------------------------|-----------|--|----------------------------|----------------|-------------|--------|----------|
| <b>Title:</b>   | Qualification of NFME as Additional Assembly/Test Site for TPD4S009DBVR device |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <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>   | 12/27/2013   |  | <b>Estimated Sample Availability:</b> | Date Provided at Sample request |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <b>Change Type:</b>   |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <input checked="" type="checkbox"/> Assembly Site   | <input type="checkbox"/> Assembly Process                                      | <input checked="" type="checkbox"/> Assembly Materials |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <input checked="" type="checkbox"/> Test Site   | <input type="checkbox"/> Packing/Shipping/Labeling                             | <input type="checkbox"/> Test Process                  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <b>PCN Details</b>  |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <b>Description of Change:</b>   |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <p>Qualification of NFME as additional assembly and test site for TPD4S009DBVR device. Assembly differences are shown in the following table:</p> <table border="1"> <thead> <tr> <th></th> <th>HNC</th> <th>NFME</th> </tr> </thead> <tbody> <tr> <td>Wire</td> <td>500072T (Au)</td> <td>W-15 (Cu)</td> </tr> <tr> <td>Mold Compound</td> <td>450228 (Sumitomo)</td> <td>R-17 (Hitachi)</td> </tr> <tr> <td>Lead Finish</td> <td>NiPdAu</td> <td>Matte Sn</td> </tr> </tbody> </table> <p>Upon expiration of this PCN, TI will combine lead free solutions in a <i>single standard part number</i>, for example; <a href="#">TPD4S009DBVR</a> – can ship with both Matte Sn and NiPdAu.</p> <p>Customers may specify NiPdAu finish by ordering the part with the G4 suffix, <a href="#">TPD4S009DBVRG4</a>.</p> <p>Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.</p>                                   |  |  |                                       |                                 |                               |               | HNC | NFME | Wire             | 500072T (Au)               | W-15 (Cu) | Mold Compound                            | 450228 (Sumitomo)          | R-17 (Hitachi) | Lead Finish | NiPdAu | Matte Sn |
|   | HNC  | NFME   |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| Wire  | 500072T (Au)   | W-15 (Cu)  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| Mold Compound   | 450228 (Sumitomo)  | R-17 (Hitachi)   |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| Lead Finish   | NiPdAu   | Matte Sn   |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <b>Reason for Change:</b>   |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <p>Continuity of Supply</p> <ol style="list-style-type: none"> <li>1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties</li> <li>2) Maximize flexibility within our Assembly/Test production sites.</li> <li>3) Cu is easier to obtain and stock</li> </ol>   |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>   |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| None  |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <b>Changes to product identification resulting from this PCN:</b>   |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <table border="1"> <tr> <td colspan="3">Assembly Site</td> </tr> <tr> <td>HNC (Hana China)</td> <td>Assembly Site Origin (22L)</td> <td>ASO: CHS</td> </tr> <tr> <td>NFME (Nantong Fujitsu Micro-Electronics)</td> <td>Assembly Site Origin (22L)</td> <td>ASO: NFM</td> </tr> </table>   |  |  |                                       |                                 |                               | Assembly Site |     |      | HNC (Hana China) | Assembly Site Origin (22L) | ASO: CHS  | NFME (Nantong Fujitsu Micro-Electronics) | Assembly Site Origin (22L) | ASO: NFM       |             |        |          |
| Assembly Site   |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| HNC (Hana China)  | Assembly Site Origin (22L)   | ASO: CHS   |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| NFME (Nantong Fujitsu Micro-Electronics)  | Assembly Site Origin (22L)   | ASO: NFM   |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |
| <p>Sample product shipping label (not actual product label)</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">  <p><b>TEXAS<br/>INSTRUMENTS</b><br/>MADE IN: Malaysia<br/>2DC: 2d:<br/>MSL 2 /260C/1 YEAR SEAL DT<br/>MSL 1 /235C/UNLIM 03/29/04<br/>OPT:<br/>ITEM: 39<br/>LBL: 5A (L)T0:1750</p> </div> <div style="width: 15%; text-align: center;">  </div> <div style="width: 30%; text-align: center;">  </div> <div style="width: 20%;"> <p>(1P) SN74LS07NSR<br/>(Q) 2000 (D) 0336<br/>(31T) LOT: 3959047MLA<br/>(4W) TKY (1T) 7523483SI2<br/>(P)<br/>(2P) REV: (V) 0033317<br/>(20L) CS0: SHE (21L) CCO:USA<br/>(22L) AS0: MLA (23L) ACO: MYS</p> </div> </div> |  |  |                                       |                                 |                               |               |     |      |                  |                            |           |  |                            |                |             |        |          |

**Device Marking**

1ST DIGIT = DEVICE FAMILY  
 2ND/3RD DIGIT = DEVICE FUNCTION CODE  
 4TH DIGIT = WAFER FAB/ASSEMBLY SITE CODE  
 \* \* \* \* = BINARY DATE PER TI DWG 4205087  
 O = PIN 1 INDICATOR

**Topside Device marking:**

Assembly site code for HNC = 9

Assembly site code for NFME = E

**Product Affected:**

TPD4S009DBVR

**Qualification Data**

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: TPD4S009DBVR (MSL1-260C)****Package Construction Details**

|                            |               |                 |                 |
|----------------------------|---------------|-----------------|-----------------|
| Assembly Site:             | NFME          | Mold Compound:  | R-17            |
| # Pins-Designator, Family: | 6-DBV, SOT-23 | Mount Compound: | A-03            |
| Lead Finish, Base          | Matte Sn, Cu  | Bond Wire:      | 1.0 Mil Dia. Cu |

**Qualification:** ☐ Plan ☒ Test Results

| Reliability Test       | Conditions                  | Sample Size / Fail |        |        |
|------------------------|-----------------------------|--------------------|--------|--------|
|                        |                             | Lot# 1             | Lot# 2 | Lot# 3 |
| ** Temperature Cycle   | -65/150C (1000 cycles)      | 77/0               | 77/0   | 77/0   |
| Ball Bond Shear        | 76 ball bonds, min. 5 units | 78/0               | 78/0   | 78/0   |
| Bond Pull              | 76 ball bonds, min. 5 units | 78/0               | 78/0   | 78/0   |
| X-ray                  | (Top Side Only)             | 5/0                | 5/0    | 5/0    |
| Manufacturability (MQ) | -                           | Pass               | Pass   | Pass   |

\*\* - Preconditioning sequence: Level 1-260C.

**Reference Qualification: SOT-23 Package at NFME****Qualification Data: Approved 05/14/2013**

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

**Qual Vehicle 1 : TL432ACDBVR****Package Construction Details**

|                            |               |                 |                  |
|----------------------------|---------------|-----------------|------------------|
| Assembly Site:             | NFME          | Mold Compound:  | R-17             |
| # Pins-Designator, Family: | 5-DBV, SOT-23 | Mount Compound: | A-03             |
| Lead frame (Finish, Base): | Matte Sn, Cu  | Bond Wire:      | 1.0 Mil Dia., Cu |

**Qualification:** ☐ Plan ☒ Test Results

| Reliability Test            | Conditions            | Sample Size/Fail |        |        |
|-----------------------------|-----------------------|------------------|--------|--------|
|                             |                       | Lot# 1           | Lot# 2 | Lot# 3 |
| Electrical Characterization | -                     | Pass             | -      | -      |
| Life Test                   | 150C(300 Hrs)         | 77/0             | 77/0   | -      |
| **Autoclave                 | 121C (192 Hrs)        | 77/0             | 77/0   | 77/0   |
| **Thermal Shock             | -65C/+150C (500 Cyc)  | 77/0             | 77/0   | -      |
| **Temperature Cycle         | -65C/+150C (1000 Cyc) | 77/0             | 77/0   | 77/0   |
| **Unbiased HAST             | 130C/85%RH (96 Hrs)   | 77/0             | 77/0   | 77/0   |
| **Biased HAST               | 130C/85%RH (192 Hrs)  | 77/0             | 77/0   | -      |

|                              |                                    |      |      |      |
|------------------------------|------------------------------------|------|------|------|
| **High Temp Storage Bake     | 170C (600Hrs)                      | 77/0 | 77/0 | 77/0 |
| Flammability (UL 94V-0)      | (UL 94V-0)                         | 5/0  | 5/0  | -    |
| Flammability (UL-1694)       | (UL-1694)                          | 5/0  | 5/0  | -    |
| Flammability (IEC 695-2-2)   | (IEC 695-2-2)                      | 5/0  | 5/0  | -    |
| Solderability                | Steam age, 8 hours; PB-Free solder | 22/0 | 22/0 | -    |
| Salt Atmosphere              | -                                  | 22/0 | 22/0 | -    |
| X-ray                        | (top side only)                    | 5/0  | 5/0  | 5/0  |
| Manufacturability (Assembly) | (per mfg. Site specification)      | Pass | Pass | Pass |
| Moisture Sensitivity         | L1-260C                            | 12/0 | 12/0 | 12/0 |

Notes \*\* - Preconditioning sequence: Level 1-260C.

### Qual Vehicle 2 : TS321IDBVR

#### Package Construction Details

|                            |               |                 |                  |
|----------------------------|---------------|-----------------|------------------|
| Assembly Site:             | NFME          | Mold Compound:  | R-17             |
| # Pins-Designator, Family: | 5-DBV, SOT-23 | Mount Compound: | A-03             |
| Lead frame (Finish, Base): | Matte Sn, Cu  | Bond Wire:      | 1.0 Mil Dia., Cu |

**Qualification:** ☐ Plan ☒ Test Results

| Reliability Test             | Conditions                         | Sample Size/Fail |        |        |
|------------------------------|------------------------------------|------------------|--------|--------|
|                              |                                    | Lot# 1           | Lot# 2 | Lot# 3 |
| Electrical Characterization  | -                                  | Pass             | -      | -      |
| Life Test                    | 150C(300 Hrs)                      | 77/0             | -      | -      |
| **Autoclave                  | 121C (192 Hrs)                     | 77/0             | 77/0   | 77/0   |
| **Thermal Shock              | -65C/+150C (500 Cyc)               | 77/0             | -      | -      |
| **Temperature Cycle          | -65C/+150C (1000 Cyc)              | 77/0             | 77/0   | 77/0   |
| **Unbiased HAST              | 130C/85%RH (96 Hrs)                | 77/0             | 77/0   | 77/0   |
| **Biased HAST                | 130C/85%RH (192 Hrs)               | 77/0             | -      | -      |
| **High Temp Storage Bake     | 170C (600Hrs)                      | 77/0             | 77/0   | 77/0   |
| Flammability (UL 94V-0)      | (UL 94V-0)                         | 5/0              | -      | -      |
| Flammability (UL-1694)       | (UL-1694)                          | 5/0              | -      | -      |
| Flammability (IEC 695-2-2)   | (IEC 695-2-2)                      | 5/0              | -      | -      |
| Solderability                | Steam age, 8 hours; PB-Free solder | 22/0             | -      | -      |
| Salt Atmosphere              | -                                  | 22/0             | -      | -      |
| X-ray                        | (top side only)                    | 5/0              | 5/0    | 5/0    |
| Manufacturability (Assembly) | (per mfg. Site specification)      | Pass             | Pass   | Pass   |
| Moisture Sensitivity         | L1-260C                            | 12/0             | 12/0   | 12/0   |

Notes \*\* - Preconditioning sequence: Level 1-260C.

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>       |