



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20140505001

**Qualification of Additional Fab (DMOS6), Assembly/Test (TAI) and Cu Wire Option
for select MSP430FR57xx devices in the TSSOP Package
Change Notification / Sample Request**

Date: 5/16/2014
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).

Sincerely,

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

20140505001
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 |
|------------------|-----------------------------|
| MSP430FR5720IPW | null |
| MSP430FR5722IPW | null |
| MSP430FR5725IDA | null |
| MSP430FR5728IPW | null |
| MSP430FR5729IDA | null |
| MSP430FR5729IDAR | null |
| MSP430FR5730IPW | null |
| MSP430FR5732IPW | null |
| MSP430FR5734IPW | null |
| MSP430FR5736IPW | null |
| MSP430FR5738IPW | null |
| MSP430FR5739IDA | null |

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

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---------------------------------------|---------------------------------|-------------------------------------|---------------------|---|---|-----------------------------|-----------------------------------|-----------------|-------------------------|----------------------------|--------------------|----------|----------------|---------------|---------|----------------|-----------------|-------------------------|----------------------------|-----------------------|----|-----------|--------------------|----------|----------------|---------------|---------|----------------|
| PCN Number: | 20140505001 | | | PCN Date: | 05/16/2014 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Title: | Qualification of Additional Fab (DMOS6), Assembly/Test (TAI) and Cu Wire Option for select MSP430FR57xx devices in the TSSOP Package | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Customer Contact: | PCN Manager | Phone: | +1(214)480-6037 | Dept: | Quality Services | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Proposed 1st Ship Date: | 08/16/2014 | Estimated Sample Availability: | Date Provided at Sample request | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Change Type: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" 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 checked="" type="checkbox"/> | Assembly Materials | <input type="checkbox"/> | Part number change | <input type="checkbox"/> | Wafer Bump Process | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Mechanical Specification | <input checked="" 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"/> | | <input type="checkbox"/> | Wafer Fab Process | | | | | | | | | | | | | | | | | | | | | | | | | |
| PCN Details | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description of Change: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>This notification is to announce the qualification of additional fab (TI-DMOS6), assembly/test (TI-Taiwan) and Cu wire option for select MSP430FR57xx devices in the TSSOP Package.</p> <p>Wafer Fab Differences</p> <table border="1"> <tr> <td>Currently Qualified Sites, process, wafer dia.</td> <td>Additional Site, process, wafer dia.</td> </tr> <tr> <td>DP1DM5, E035 Process, 200mm</td> <td>DMOS6, E035 Process, 300mm</td> </tr> </table> <p>Assembly Site Material Differences for DA Package (There are no other BOM changes)</p> <table border="1"> <tr> <td>Material</td> <td>Current Site/MLA</td> <td>Additional Site/TAI</td> </tr> <tr> <td>Bond Wire Diameter</td> <td>0.96 mil</td> <td>0.8 mil</td> </tr> <tr> <td>Mold Compound</td> <td>4209002</td> <td>4211471</td> </tr> </table> <p>Assembly Site Material Differences for PW Package (There are no other BOM changes)</p> <table border="1"> <tr> <td>Material</td> <td>Current Site/MLA</td> <td>Additional Site/TAI</td> </tr> <tr> <td>Bond Wire Composition</td> <td>Au</td> <td>Cu</td> </tr> <tr> <td>Bond Wire Diameter</td> <td>0.96 mil</td> <td>0.8 mil</td> </tr> <tr> <td>Mold Compound</td> <td>4206193</td> <td>4211471</td> </tr> </table> <p>Device Grouping (shown in Product Affected Section)</p> <p>Group 1 Devices:</p> <ul style="list-style-type: none"> 38 pin DA package/Only adding Fab site <p>Group 2 Devices:</p> <ul style="list-style-type: none"> 28 pin PW package/Adding Fab site, A/T site, and includes Cu wire change <p>Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.</p> | | | | | | Currently Qualified Sites, process, wafer dia. | Additional Site, process, wafer dia. | DP1DM5, E035 Process, 200mm | DMOS6, E035 Process, 300mm | Material | Current Site/MLA | Additional Site/TAI | Bond Wire Diameter | 0.96 mil | 0.8 mil | Mold Compound | 4209002 | 4211471 | Material | Current Site/MLA | Additional Site/TAI | Bond Wire Composition | Au | Cu | Bond Wire Diameter | 0.96 mil | 0.8 mil | Mold Compound | 4206193 | 4211471 |
| Currently Qualified Sites, process, wafer dia. | Additional Site, process, wafer dia. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DP1DM5, E035 Process, 200mm | DMOS6, E035 Process, 300mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material | Current Site/MLA | Additional Site/TAI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bond Wire Diameter | 0.96 mil | 0.8 mil | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mold Compound | 4209002 | 4211471 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material | Current Site/MLA | Additional Site/TAI | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bond Wire Composition | Au | Cu | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bond Wire Diameter | 0.96 mil | 0.8 mil | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mold Compound | 4206193 | 4211471 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reason for Change: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Add wafer fab capacity and continuity of supply.</p> <ol style="list-style-type: none"> To align with world technology trends and use wiring with enhanced mechanical and electrical properties Maximize flexibility within our Assembly/Test production sites. Cu is easier to obtain and stock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

Changes to product identification resulting from this PCN:

There will be no change to topside symbol.

Shipment Labels:

Current Fab Site

| Chip Site | Chip site code (20L) | Chip country code (21L) |
|-----------|----------------------|-------------------------|
| DP1DM5 | DM5 | USA |

Additional

| Chip Site | Chip site code (20L) | Chip country code (21L) |
|-----------|----------------------|-------------------------|
| DMOS6 | DM6 | USA |

Note: The die revision code will change from "H" (DP1DM5) to "J" (DMOS6). This is only for tracking purposes. There is no change to the die.

Current Assembly Site

| Assembly Site | Assembly site Origin (22L) | Assembly country Origin (23L) |
|---------------|----------------------------|-------------------------------|
| TI-Malaysia | MLA | MYS |

Additional

| Assembly Site | Assembly site Origin (22L) | Assembly country Origin (23L) |
|---------------|----------------------------|-------------------------------|
| Taiwan | TAI | TWN |

Device Marking for TI Malaysia and TI Taiwan are the same.

Assembly site code for TI Malaysia = K

Assembly site code for TI Taiwan = T

Sample product shipping label (not actual product label)

| | | |
|---|---|--|
|  TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 2Q: MSL 2 / 260C / 1 YEAR MSL 1 / 235C / UNLIM SEAL DT 03/29/04 OPT: ITEM: 39 LBL: 5A (L)T0:1750 |   | (1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483SI2 (P) (2P) REV: (V) 0033317 (20L) CS0: SHE (21L) CC0: USA (22L) AS0: MLA (23L) AC0: MYS |
|---|---|--|

Product Affected:**Group 1: 38 pin DA package devices/Only adding Fab site**

| | | | |
|------------------|------------------|------------------|------------------|
| MSP430FR5721IDA | MSP430FR5725IDAR | MSP430FR5731IDA | MSP430FR5735IDAR |
| MSP430FR5721IDAR | MSP430FR5727IDA | MSP430FR5731IDAR | MSP430FR5737IDA |
| MSP430FR5723IDA | MSP430FR5727IDAR | MSP430FR5733IDA | MSP430FR5737IDAR |
| MSP430FR5723IDAR | MSP430FR5729IDA | MSP430FR5733IDAR | MSP430FR5739IDA |
| MSP430FR5725IDA | MSP430FR5729IDAR | MSP430FR5735IDA | MSP430FR5739IDAR |

Group 2: 28 pin PW package devices/Adding Fab site, A/T site, and includes Cu wire change

| | | | |
|------------------|------------------|------------------|------------------|
| MSP430FR5720IPW | MSP430FR5724IPWR | MSP430FR5730IPW | MSP430FR5734IPWR |
| MSP430FR5720IPWR | MSP430FR5726IPW | MSP430FR5730IPWR | MSP430FR5736IPW |
| MSP430FR5722IPW | MSP430FR5726IPWR | MSP430FR5732IPW | MSP430FR5736IPWR |
| MSP430FR5722IPWR | MSP430FR5728IPW | MSP430FR5732IPWR | MSP430FR5738IPW |
| MSP430FR5724IPW | MSP430FR5728IPWR | MSP430FR5734IPW | MSP430FR5738IPWR |

Qualification Report
MSP430FR5739IDA/PW transfer to DM6 / TAI
Approved 04/23/2014

Product Attributes

| Attributes | Qual Device: MSP430FR5739IRHA E035.1 Process Qual | Qual Device: MSP430FR5739IDA Package Qual | Qual Device: MSP430FR5738IPW Package Qual | Supporting QBS: MSP430L092SPWR Package Qual |
|----------------------------------|---|---|---|---|
| Assembly Site | TI-Clark | TI-TAIWAN | TI-TAIWAN | TI-TAIWAN |
| Package Family | QFN | TSSOP | TSSOP | TSSOP |
| Bond Wire Diameter (mils) | 0.8 | 0.8 | 0.8 | 0.8 |
| Mold Compound | 4208625 | 4211471 | 4211471 | 4206193 |
| Flammability Rating | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 |
| Wafer Fab Supplier | TI-DMOS6 | TI-DMOS6 | TI-DMOS6 | TI-DMOS5 |
| Wafer Fab Process | E035.1 | E035.1 | E035.1 | C035 |

- QBS: Qual By Similarity

- Qual Device for package MSP430FR5739IDA is qualified at LEVEL2-260CG

Qualification Results

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

| Test Name | Condition/ Duration | Qual Device: MSP430FR5739IRHA Process Qual | Qual Device: MSP430FR5739IDA Package Qual | Qual Device: MSP430FR5738IPW Package Qual | Supporting QBS: MSP430L092SPWR Package Qual |
|--|-----------------------------------|--|---|---|---|
| Biased HAST | 96 hrs/85%RH, 130C | - | - | | 3/231/0 |
| Autoclave | 96 hrs/121C / 100% | - | 3/231/0 | | 3/231/0 |
| Temperature Cycle | 500 cycles -65C/+150C | - | 3/231/0 | | 3/231/0 |
| High Temp Storage Bake | 1000hrs/150C | - | 3/231/0 | | 3/231/0 |
| ** Life Test | 125C (1000 hrs) | 3/231/0 | - | | - |
| ** Endurance: FRAM extrinsic cycle | 25C, 1e^7 cycles, full size | 3/231/0 | - | | - |
| ** FRAM data retention and imprint | 125C/85C (1000 hrs)*** | 3/231/0 | - | | - |
| ESD CDM | 500V | 3/9/0 | 3/9/0 | 3/9/0 | - |
| ESD HBM | 2000V | 3/9/0 | 3/9/0 | | - |
| Latch-Up | 100mA/85C, 1.5xVcc | 3/18/0 | - | | - |

- Preconditioning was performed for Autoclave, Biased HAST, Temperature Cycle, High Temp Storage Bake. MSL2 for MSP430FR5739IDA and MSL1 for MSP430L092SPWR are applied.

** Preconditioning: MSL 3 @ 260

***: SS data retention at 125C, OS imprint at 85C 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 |