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|--|---|---|----------------------------------|
| PCN Number: | 20180530001.1 | PCN Date: | May 31, 2018 |
| Title: | Qualification of DMOS6 as an additional Wafer Fab Site option for select devices in LBC8LV Technology | | |
| Customer Contact: | PCN Manager | Dept: | Quality Services |
| Proposed 1st Ship Date: | Aug 31, 2018 | Estimated Sample Availability: | Date provided at sample request. |
| Change Type: | | | |
| <input type="checkbox"/> Assembly Site | <input type="checkbox"/> Assembly Process | <input 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 checked="" type="checkbox"/> Wafer Fab Site | <input checked="" type="checkbox"/> Wafer Fab Materials | <input type="checkbox"/> Wafer Fab Process | |
| | <input type="checkbox"/> Part number change | | |

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of its DMOS6 fabrication facility as an additional Wafer Fab source for the selected devices listed in "Product Affected" section.

| Current Sites | | | Additional Sites | | |
|------------------|---------|----------------|---------------------|---------|----------------|
| Current Fab Site | Process | Wafer Diameter | Additional Fab Site | Process | Wafer Diameter |
| DP1DM5 | LBC8LV | 200mm | DMOS6 | LBC8LV | 300mm |

Qual details are provided in the Qual Data Section.

Reason for Change:

Continuity of Supply

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

None

Changes to product identification resulting from this PCN:

Current

| Chip Site | Chip Site Origin (20L) | Chip Site Country Code (21L) | Chip Site City |
|-----------|------------------------|------------------------------|----------------|
| DP1DM5 | DM5 | USA | Dallas |

New Fab Site

| Chip Site | Chip Site Origin (20L) | Chip Site Country Code (21L) | Chip Site City |
|-----------|------------------------|------------------------------|----------------|
| DMOS6 | DM6 | USA | Dallas |

Sample product shipping label (not actual product label)

| | | | | | | |
|--|------------------------|---------|----------------------|----------|--|--|
|  <p>MADE IN: Malaysia 2DC: 20:</p> <table border="1" style="font-size: small;"> <tr> <td>MSL '2 / 260C / 1 YEAR</td> <td>SEAL DT</td> </tr> <tr> <td>MSL 1 / 235C / UNLIM</td> <td>03/29/04</td> </tr> </table> <p>OPT: ITEM: 39 LBL: 5A (L)T0:1750</p> | MSL '2 / 260C / 1 YEAR | SEAL DT | MSL 1 / 235C / UNLIM | 03/29/04 |   | <p>(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483SI2 (P) (2P) REV: (Y) 0033317 (20L) CSO: SHE (21L) CCO: USA (22L) ASO: MLA (23L) ACO: MYS</p> |
| MSL '2 / 260C / 1 YEAR | SEAL DT | | | | | |
| MSL 1 / 235C / UNLIM | 03/29/04 | | | | | |

Product Affected:

| | | | |
|--------------|--------------|------------|------------|
| AFE2256GRTDR | AFE2256GRTDX | AFE2256TDR | AFE2256TDU |
| AFE2256GRTDU | AFE2256TDQ | AFE2256TDT | AFE2256TDX |

Qualification Report

**AFE2256 offload from DMOS5 to DMOS6
Approve Date 16-May-2018**

Product Attributes

| Attributes | Qual Device: AFE2256GRTDU | QBS Product Reference: AFE2256TDU (PG2.0) | QBS Product Reference: AFE2256TDU (A2) | QBS Process Reference: DDC2256AZZF | QBS Process Reference: TAS2552YFF | QBS Process Reference: TAS2553YFF |
|---------------------|------------------------------|--|---|---------------------------------------|--------------------------------------|--------------------------------------|
| Assembly Site | CHIPBOND | CHIPBOND | CHIPBOND | AMKOR K4 | CLARK-AT | CLARK-AT |
| Package Family | COF | COF | COF | NFBGA | DSBGA | DSBGA |
| Flammability Rating | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | - | UL 94 V-0 | UL 94 V-0 |
| Wafer Fab Supplier | RFAB / DMOS6 | DMOS5 | DMOS5 | RFAB / DMOS6, RFAB/DMOS6 | RFAB/DMOS6 (MFF) | RFAB/DMOS6 (MFF) |
| Wafer Process | LBC8LV | LBC8LV | LBC8LV | LBC8LV | LBC8LV | LBC8LV |

- QBS: Qual By Similarity

- Qual Device AFE2256GRTDU is qualified at Not Classified

Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: AFE2256GRTDU | QBS Product Reference: AFE2256TDU (PG2.0) | QBS Product Reference: AFE2256TDU (A2) | QBS Process Reference: DDC2256AZZF | QBS Process Reference: TAS2552YFF | QBS Process Reference: TAS2553YFF |
|-------|-------------------------------|--------------------------|------------------------------|---|--|--|---|---|
| ED | Electrical Characterization | Per Datasheet Parameters | Pass | Pass | - | Pass | - | Pass |
| ELFR | Early Life Failure Rate, 125C | 48 Hours | - | - | - | - | - | 3/3000/0 |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | - | - | - | 3/231/0 | - |
| HBM | ESD - HBM | 1000 V | 1/3/0 | - | - | - | - | 3/9/0 |
| CDM | ESD - CDM | 1500 V | - | - | - | 1/3/0 | - | 3/9/0 |
| HTOL | Life Test, 125C | 1000 Hours | - | - | - | 1/77/0 | - | 3/231/0 |
| HTSL | High Temp. Storage Bake, 170C | 420 Hours | - | - | - | - | 3/228/0 | - |
| LU | Latch-up (per JESD78) | - | 1/6/0 | 1/6/0 | - | 1/6/0 | - | 3/18/0 |
| SBS | Bump-Shear | - | - | - | 1/12/0 | - | 3/108/0 | - |
| TC | Temperature Cycle, -55/125C | 700 Cycles | 1/77/0 | - | 3/231/0 | 1/77/0 | 3/231/0 | - |
| UHAST | Unbiased HAST, 130C/85%RH | 96 Hours | - | - | 3/231/0 | - | 3/228/0 | - |
| WBP | Bond Pull | Wires | - | - | - | 1/76/0 | - | - |
| WBS | Ball Bond Shear | Wires | - | - | - | 1/76/0 | - | - |

- 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 the regional contacts shown below, or you can contact 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 |