PCN Number: 20180205000 **PCN Date:** Feb 6, 2018 Title: Qualification of DMOS6 for DDC2256AZZF **Customer Contact: PCN Manager** Dept: **Quality Services Estimated Sample** Date provided at May 6, 2018 **Proposed 1st Ship Date: Availability:** sample request. **Change Type:** Assembly Site **Assembly Process** Assembly Materials **Electrical Specification** Mechanical Specification Design Packing/Shipping/Labeling Test Process Test Site Wafer Bump Site Wafer Bump Material Wafer Bump Process Wafer Fab Site Wafer Fab Materials Wafer Fab Process 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 DDC2256AZZF device.

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

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):

Changes to product identification resulting from this PCN:

Current:

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

New:

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

Sample product shipping label (not actual product label)





(1P) SN74LS07NSR (31T)LOT: 3959047MLA (4W) TKY(1T) 7523483SI2 (P) (2P) (2D) REV: (V) 0033317 (20L) CSO: SHD (21L) CCO:USA (22L) ASO: MLA (23L) ACO: MYS

Product Affected:

DDC2256AZZF

Qualification Report

DDC2256 offload from DMOS5 to RFAB/DMOS6 (MFF)

Approve Date 08-Jan-2018

Product Attributes

| Attributes Qual Device: <u>DDC2256AZZF</u> | | QBS Product Reference: DDC2256AZZF | QBS Process Reference: <u>TAS2552YFF</u> | QBS Process Reference: TAS2553YFF | |
|--|--------------------------------|---------------------------------------|---|--------------------------------------|--|
| Assembly Site | AMKOR K4 | AMOR K4 | CLARK-AT | CLARK-AT | |
| Package Family | NFBGA | NFBGA | DSBGA | DSBGA | |
| Flammability Rating | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | |
| Wafer Fab Supplier | RFAB / DMOS6, RFAB/DMOS6 (MFF) | DMOS5, DMOS5 | RFAB/DMOS6 (MFF) | RFAB/DMOS6 (MFF) | |
| Wafer Process | LBC8LV | LBC8LV | LBC8LV | LBC8LV | |

Qualification Results

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

| Type | Test Name / Condition | Duration | Qual Device: DDC2256AZZF | QBS Product Reference: DDC2256AZZF | QBS Process Reference: TAS2552YFF | QBS Process Reference: TAS2553YFF |
|-------|-------------------------------|--------------------------|-----------------------------|---------------------------------------|--------------------------------------|--------------------------------------|
| ED | Electrical Characterization | Per Datasheet Parameters | 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 | 4000 V | 1/3/0 | 1/3/0 | - | - |
| CDM | ESD - CDM | 1500 V | 1/3/0 | 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 | - | 3/18/0 |
| SBS | Bump Shear | - | • | - | 3/108/0 | - |
| TC | Temperature Cycle, -55/125C | 700 Cycles | 1/77/0 | - | 3/231/0 | • |
| UHAST | Unbiased HAST, 130C/85%RH | 96 Hours | | - | 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

Green/Pb-free Status: Qualified Pb-Free (SMT) and Green

THIS INFORMATION RELATING TO QUALITY AND RELIABILITY IS PROVIDED "AS IS." Product information detailed in this report may not accurately reflect Ti's current product materials, processes and testing used in the construction of the Ti products. Customers are solely responsible to conduct sufficient engineering and additional qualification testing to determine whether a device is suitable for use in their applications. Using Ti products outside limits stated in Ti's datasheet may void Ti's warranty. See Ti's Terms of Sale at "http://livww.ti.com/isds/fi/legal/termsofsale.page"

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| Japan | PCNJapanContact@list.ti.com |

⁻ QBS: Qual By Similarity - Qual Device DDC2256AZZF is qualified at LEVEL3-260C

⁻ Device DDC2256AZZF contains multiple dies

⁻ 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/