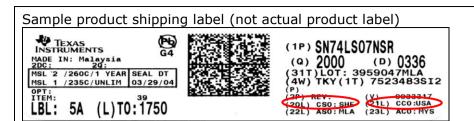
| PCN Number: 20 | | | 0151211002 | | | P | PCN Date: | | 12/16/2015 | | |
|--------------------------|--|--------|------------------|------------------------|---------------------------------|--------------------|------------------|-------------------|------------|------------------|----------|
| Title: | Title: Addition of UMC-F8E for select ASWITCH niche devices and RFAB for select Hammer niche devices | | | | | | | | | | |
| Customer Contact: | | | PCN Manager Dept | | | t: | Quality Services | | vices | | |
| | | | Ectim | | Estimated | | | | | Date provided at | |
| Proposea | 1 st Ship Date | : (| J3/ I | 6/2016 | Availability | - | | | | npİe re | |
| Change Ty | ype: | | | | | | | | | | |
| Assem | bly Site | | | Assembly F | Process | | | Asse | mbly | Materia | als |
| Design | า | | | Electrical S | pecification Mechanical Spec | | I Speci | fication | | | |
| Test S | ite | | | Packing/Sh | ipping/Labelir | ng | | Test | Proce | SS | |
| Wafer | Bump Site | | | Wafer Bump Material | | | Wafe | r Bun | np Proc | ess | |
| | Fab Site | | | Wafer Fab | Materials | | | Wafer Fab Process | | S | |
| | | | | Part number | er change | | | | | | |
| | | | | PCI | N Details | | | | | | |
| Description | n of Change: | | | | | | | | | | |
| | e notification is for select Hamr | mer r | niche | | | | | | ITCH | niche d | evices |
| | Current | Sites | | | | Addition | al S | Sites | | | |
| Current I Site | Fab Pro | cess | | Wafer Diameter | Additional Fab Site | Proc | Process | | | ifer neter | |
| CFAB | LB | C7 | | 200mm | UMC-F8E | LBC7 | | | 200 | mm | |
| DP1DM | 5 LB | C7 | | 200 mm | RFAB | LBC7 | | 300 | mm | | |
| Group 2: I | Devices curre Devices curre s are provided r Change: of Supply | ntly | at D | P1DM5 add | ling RFAB | | | | | | |
| Anticipate | ed impact on | Forn | Fit | t Function | Quality or P | aliahility | (n | ositiv | a / n | egativ | ۵)، |
| None | a impact on i | . 0 | ., | t, runction, | Quality of R | Chabiney | (P | <u> </u> | <u> </u> | cgativ | <u> </u> |
| | | - 1.0 | | | | | | | | | |
| Changes t | o product ide | entifi | cati | on resulting | from this P | CN: | | | | | |
| Current | | | | | | | | | | | |
| Chi | ip Sites Ch | | | e Origin Code (20L) | • | e Country (21L) | | Chip Si | te City | | |
| C | FAB | AΒ | | CU3 | Cl | HN | | Cher | ngdu | | |
| DP | 1DM5 | | | DM5 | USA | | Richardso | | rdson | | |
| New | | | | | | | | | | | |
| Chi | | | | e Origin Code (20L) | Chip Site Country Code (21L) | | | Chip Site Ci | | te City | |
| UM | UMC-F8E U8E | | | | WN | | Hsinchu | | | | |
| R | RFAB RFB | | | | U! | | | | Richa | rdson | |
| | , | | | | • | | | | | | |



Product Affected:

| Group 1: Devices currently at CFAB adding UMC-F8E | | | | | | |
|---|--------------|--------------|--------------|--|--|--|
| TPS22959DNYR | TPS22961DNYR | TPS22962DNYR | TPS22969DNYR | | | |
| TPS22959DNYT | TPS22961DNYT | TPS22962DNYT | TPS22969DNYT | | | |
| | | | | | | |
| Group 2: Devices currently at DP1DM5 adding RFAB | | | | | | |
| SNC7007PAP | SNC7007PAPR | | | | | |

QUALIFICATION DATA

TPS22961DNYR: New Fab location (UMC) for NexFET (GJN13305A0), A-T site is UTAC

Approve Date 10/29/2015

Product Attributes

| Attributes | Qual Device: TPS22961DNYR | QBS Product Reference: TPS22961DNYR | QBS Process Reference: BQ24730RGF | QBS Process Reference: CD3230A0YFF | QBS Process Reference: CD3230A0YFF |
|------------------------|------------------------------|---|---|--|--|
| Assembly Site | UTAC -THAILAND | UTAC -THAILAND | MLA | TI-CLARK | JCAP |
| Package Family | VSON | VSON | QFN | WCSP (BOP- COA) | WCSP (BOP- COA) |
| Flammability Rating | UL 94 V-0 | UL 94 V-0 | UL 94 V-0 | - | - |
| Wafer Fab Supplier | MIHO8, UMC | CFAB, MIHO8 | MIHO8 | MIHO8 | MIHO8 |
| Wafer Process | LBC7, NU35LN | LBC7, NU35LN | LBC7 | LBC7 | LBC7 |

⁻ QBS: Qual By Similarity

⁻ Qual Device TPS22961DNYR is qualified at LEVEL2-260C

Qualification Results

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

| | Test Name / | | Qual Device: | QBS Product Reference: | QBS Process Reference: | QBS Process Reference: | QBS Process Reference: |
|------|-----------------------------------|-----------------------------|--------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Туре | Condition | Duration | TPS22961DNYR | TPS22961DNYR | BQ24730RGF | CD3230A0YFF | CD3230A0YFF |
| AC | Autoclave 121C | 96 Hours | - | 3/231/0 | - | - | - |
| ED | Electrical Characterization | Per Datasheet Parameters | Pass | Pass | Pass | Pass | - |
| HAST | Biased HAST, 130C/85%RH | 96 Hours | - | 3/231/0 | - | 1/77/0 | 2/154/0 |
| НВМ | ESD - HBM | 3000 V | 1/3/2000 | - | = | - | - |
| CDM | ESD - CDM | 1500 V | 1/3/2000 | 1/3/2000 | 3/9/2000 | 2/6/2000 | 1/3/2000 |
| HTOL | Life Test, 125C | 1000 Hours | - | - | - | 1/77/0 | 1/77/0 |
| HTOL | Life Test, 155C | 240 Hours | - | 3/231/0 | 3/231/0 | - | - |
| HTSL | High Temp Storage Bake 170C | 420 Hours | 1/77/0 | 3/230/0 | - | 1/77/0 | 1/77/0 |
| LU | Latch-up | (per JESD78) | 1/6/2000 | 1/6/2000 | 3/15/2000 | 2/24/2000 | 1/12/2000 |
| PD | Physical Dimensions | | - | 3/15/2000 | - | 3/15/2000 | 3/15/2000 |
| SBS | Bump-shear | Bumps | - | - | - | 3/15/2000 | 3/150/0 |
| SD | Surface Mount Solderability | Pb Free | - | 3/75/0 | - | - | - |
| TC | Temperature Cycle -55/125C | 700 Cycles | - | - | - | 1/77/0 | 2/154/0 |
| TC | Temperature Cycle, -65/150C | 500 Cycles | 1/77/0 | 3/231/0 | 3/231/0 | - | - |
| TS | Thermal Shock, -65/150C | 500 Cycles | - | - | 3/231/0 | - | - |
| WBP | Bond Pull | Wires | 1/76/0 | 3/228/0 | - | - | - |

- 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 0.7 eV: 125 C/1 k Hours, 140 C/480 Hours, 150 C/300 Hours, and 155 C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7 eV: 150 C/1 k Hours, and 170 C/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

Qualification Report

RFAB Qualification - 300mm LBC7 Process Technology Approve Date 10/06/2010

Product Attributes

| Attributes | Qual Device: TPS51217DSC |
|---------------------|-----------------------------|
| Assembly Site | CLARK-AT |
| Package Family | WSON |
| Flammability Rating | UL 94 V-0 |
| Wafer Fab Supplier | RFAB |
| Wafer Fab Process | LBC7 |

⁻ QBS: Qual By Similarity

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

| Туре | Test Name / Condition | Duration | Qual Device: TPS51217DSC |
|------|------------------------------|--------------------------|-----------------------------|
| AC | Autoclave 121C | 96 Hours | 3/231/0 |
| ED | Electrical Characterization | Per Datasheet Parameters | 3/60/0 |
| HAST | Biased HAST 130C/85%RH | 96 Hours | 3/231/0 |
| HTOL | Life Test, 135C | 635 Hours | 3/231/0 |
| HTSL | High Temp Storage Bake, 170C | 420 Hours | 3/231/0 |
| TC | Temperature Cycle -65/150C | 500 Cycles | 3/231/0 |

⁻ 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

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 |

⁻ Qual Device TPS51217DSC is qualified at LEVEL2-260C

⁻ 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 0.7 eV: 150 C/1 k Hours, and 170 C/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/