PCN Number:	20210111000.1	**PCN Date:**	Jan. 15, 2021
Title:	Qualification of TFME as an additional assembly site for select Devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Apr. 15, 2021	**Estimated Sample Availability:**	Date provided at sample request

Change Type:

☒	Assembly Site	☐	Design	☐	Wafer Bump Site
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Site
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials
				☐	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing the qualification of NFME as an alternate Assembly site for devices listed below in the product affected section. Construction differences and current assembly sites are as follows:

	HNA	TFME
Mold Compound	SID#450179	**SID# R-27**

Reason for Change:

Supply continuity

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

None

Anticipated impact on Material Declaration

☐	No Impact to the Material Declaration	☒	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp

Changes to product identification resulting from this PCN:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
HNA	HNT	THA	Ayutthaya
TFME	**NFM**	**CHN**	**Economic Development Zone**

Sample product shipping label (not actual product label)

Product Affected:

DRV5056A1QDBZR	DRV5056A3QDBZT	DRV5057A1QDBZR	DRV5057A3QDBZR
DRV5056A1QDBZT	DRV5056A4QDBZR	DRV5057A1QDBZT	DRV5057A3QDBZT
DRV5056A2QDBZR	DRV5056A4QDBZT	DRV5057A2QDBZR	DRV5057A4QDBZR
DRV5056A2QDBZT	DRV5056A6QDBZR	DRV5057A2QDBZT	DRV5057A4QDBZT
DRV5056A3QDBZR	DRV5056A6QDBZT		

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

Type	Test Name / Condition	Duration	Qual Device: DRV5057A1QDBZR	Qual Device: DRV5057A2QDBZR	Qual Device: DRV5057A3QDBZR	Qual Device: DRV5057A4QDBZR	QBS Product Reference: DRV5055A3QDBZR	QBS Product Reference: DRV5057A4EDBZQ1	QBS Product Reference: DRV5057A4RTJ
AC	Autoclave 121C	168 Hours	-	-	-	-	-	-	-
AC	Autoclave 121C	96 Hours	-	-	-	-	-	-	-
CDM	ESD - CDM	1500 V	-	-	-	-	-	-	-
CDM	ESD - CDM	2000 V	-	-	-	-	-	-	-
CDM	ESD - CDM - Q100	1500 V	-	-	-	-	1/3/0	1/3/0	-
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0	-	-
ELFR	Early Life Failure Rate, 150C	48	-	-	-	-	-	-	3/2400/0
HAST	Biased HAST, 130C/85%RH	192 Hours	-	-	-	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	3/241/0	-
HBM	ESD - HBM	4000 V	-	-	-	-	-	-	-
HBM	ESD - HBM	6000 V	-	-	-	-	-	-	-
HBM	ESD - HBM - Q100	4000 V	-	-	-	-	1/3/0	-	1/3/0
HTOL	Life Test, 150C	1000	-	-	-	-	-	-	3/231/1*
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	-	-	-
HTSL	High Temp Storage Bake 170C	600 Hours	-	-	-	-	-	-	-
HTSL	High Temp Storage Bake 170C	630 Hours	-	-	-	-	-	-	-
HTSL	High Temp Storage Bake 175C	1000	-	-	-	-	-	2/161/0	-

Type	Test Name / Condition	Duration	Qual Device: DRV5057A1QDBZR	Qual Device: DRV5057A2QDBZR	Qual Device: DRV5057A3QDBZR	Qual Device: DRV5057A4QDBZR	QBS Product Reference: DRV5055A3QDBZR	QBS Product Reference: DRV5057A4EDBZQ1	QBS Product Reference: DRV5057A4RTJ
LU	Latch-up	(Per JESD78)	-	-	-	-	1/6/0	-	1/6/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	-	-	-	-	1/Pass	-	-
MSL	Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	-	-	-	-	-	-	-
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	-	-	-	-	-	-	-
MSL	Moisture Sensitivity, L2	Elec/25C	-	-	-	-	1/16/0	-	-
SD	Pb Free Surface Mount Solderability	Pb Free/Solder-	-	-	-	-	-	1/16/0	-
TC	Temperature Cycle, -65/150C	1000 Cycles	-	-	-	-	-	-	-
TC	Temperature Cycle, -65/150C	1652	-	-	-	-	-	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	1/77/0	-	-
TC	Temperature Cycle, -65/150C	750 Cycles	-	-	-	-	-	-	-
UHAST	Unbiased HAST 130C/85%RH	192 Hours	-	-	-	-	-	-	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	-	-	3/231/0	-
VM	Bond Pad Crater Check	Completed	-	-	-	-	-	-	-
WBP	Bond Pull	Post TMCL Bond Pull	-	-	-	-	-	1/5/0	-
WBP	Bond Pull	Post TMCL Bond Pull	-	-	-	-	-	1/5/0	-
WBP	Bond Pull	Post TMCL Bond Pull	-	-	-	-	-	1/5/0	-
WBP	Bond Pull	Wires	-	-	-	-	-	-	-
WBS	Wire Bond Shear	Wires	-	-	-	-	-	-	-
YLD	FTY and Bin Summary	-	-	-	-	-	-	-	-

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

Type	Test Name / Condition	Duration	QBS Package Reference: TMUX1119DCK	QBS Package Reference: TPS61322DBZ
AC	Autoclave 121C	168 Hours	3/231/0	-
AC	Autoclave 121C	96 Hours	3/231/0	-
CDM	ESD - CDM	1500 V	-	1/3/0
CDM	ESD - CDM	2000 V	1/3/0	-
CDM	ESD - CDM - Q100	1500 V	-	-
ED	Electrical Characterization	Per Datasheet Parameters	-	1/Pass
ELFR	Early Life Failure Rate, 150C	48	-	-
HAST	Biased HAST, 130C/85%RH	192 Hours	3/231/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-
HBM	ESD - HBM	4000 V	-	1/3/0
HBM	ESD - HBM	6000 V	1/3/0	-
HBM	ESD - HBM - Q100	4000 V	-	-
HTOL	Life Test, 150C	1000	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0	3/231/0
HTSL	High Temp Storage Bake 170C	600 Hours	3/231/0	-
HTSL	High Temp Storage Bake 170C	630 Hours	-	3/231/0
HTSL	High Temp Storage Bake 175C	1000	-	-
LU	Latch-up	(Per JESD78)	1/6/0	1/6/0
MQ	Manufacturability	(per mfg. Site specification)	-	3/Pass
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	3/Pass	-
MSL	Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	-	3/36/0
MSL	Moisture Sensitivity, JEDEC	Level 1-260C	1/12/0	-
MSL	Moisture Sensitivity, L2	Elec/25C	-	-
SD	Pb Free Surface Mount Solderability	Pb Free/Solder-	-	-
TC	Temperature Cycle, -65/150C	1000 Cycles	3/231/0	-
TC	Temperature Cycle, -65/150C	1652	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0
TC	Temperature Cycle, -65/150C	750 Cycles	-	3/231/0
UHAST	Unbiased HAST 130C/85%RH	192 Hours	-	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	3/231/0
VM	Bond Pad Crater Check	Completed	3/Pass	-
WBP	Bond Pull	Post TMCL Bond Pull	-	-
WBP	Bond Pull	Post TMCLBond Pull	-	-
WBP	Bond Pull	Post TMCL Bond Pull	-	-
WBP	Bond Pull	Wires	3/228/0	-
WBS	Wire Bond Shear	Wires	3/228/0	-
YLD	FTY and Bin Summary	-	-	3/Pass

- 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

- QBS: Qual By Similarity
- Qual Device DRV5057A3QDBZR is qualified at LEVEL2-260C
- Qual Device DRV5057A2QDBZR is qualified at LEVEL2-260C
- Qual Device DRV5057A1QDBZR is qualified at LEVEL2-260C
- Qual Device DRV5057A4QDBZR is qualified at LEVEL2-260C

*: EOS fail.

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