

<b>PCN Number:</b>	20130926000	<b>PCN Date:</b>	09/27/2013
<b>Title:</b>	Qualification of NFME as Additional Assembly/Test Site for TPD4S009DBVR device		
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Phone:</b>	+1(214)480-6037
<b>Dept:</b>	Quality Services		
<b>Proposed 1<sup>st</sup> Ship Date:</b>	12/27/2013	<b>Estimated Sample Availability:</b>	Date Provided at Sample request
<b>Change Type:</b>			
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input checked="" type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Assembly Materials
<input type="checkbox"/>		<input type="checkbox"/>	Test Process

**PCN Details**

**Description of Change:**

Qualification of NFME as additional assembly and test site for TPD4S009DBVR device. Assembly differences are shown in the following table:

	<b>HNC</b>	<b>NFME</b>
Wire	500072T (Au)	W-15 (Cu)
Mold Compound	450228 (Sumitomo)	R-17 (Hitachi)
Lead Finish	NiPdAu	Matte Sn

Upon expiration of this PCN, TI will combine lead free solutions in a *single standard part number*, for example; [TPD4S009DBVR](#) – can ship with both Matte Sn and NiPdAu.

Customers may specify NiPdAu finish by ordering the part with the G4 suffix, [TPD4S009DBVRG4](#).

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

**Reason for Change:**

Continuity of Supply

- 1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties
- 2) Maximize flexibility within our Assembly/Test production sites.
- 3) Cu is easier to obtain and stock

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

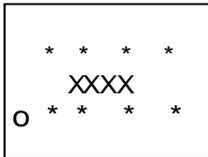
None

**Changes to product identification resulting from this PCN:**

Assembly Site		
HNC (Hana China)	Assembly Site Origin (22L)	ASO: CHS
NFME (Nantong Fujitsu Micro-Electronics)	Assembly Site Origin (22L)	ASO: NFM

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS  
 MADE IN: Malaysia  
 2DC: 2d:  
 MSL 2 /260C/1 YEAR SEAL DT  
 MSL 1 /235C/UNLIM 03/29/04  
 OPT: 39  
 ITEM: 5A (L)T0:1750  
 (Pb) G4  
 (1P) SN74LS07NSR  
 (Q) 2000 (D) 0336  
 (31T) LOT: 3959047MLA  
 (4W) TKY (1T) 7523483SI2  
 (P)  
 (2P) REV: (V) 0033317  
 (20L) CSO: SRE (21L) CCO:USA  
 (22L) ASO: MLA (23L) ACO: MYS

**Device Marking**

1ST DIGIT = DEVICE FAMILY  
 2ND/3RD DIGIT = DEVICE FUNCTION CODE  
 4TH DIGIT = WAFER FAB/ASSEMBLY SITE CODE  
 \* \* \* \* = BINARY DATE PER TI DWG 4205087  
 O = PIN 1 INDICATOR

**Topside Device marking:**

Assembly site code for HNC = 9

Assembly site code for NFME = E

**Product Affected:**

TPD4S009DBVR

**Qualification Data**

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

**Qual Vehicle: TPD4S009DBVR (MSL1-260C)****Package Construction Details**

Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	6-DBV, SOT-23	Mount Compound:	A-03
Lead Finish, Base	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia. Cu

**Qualification:**  Plan  Test Results

Reliability Test	Conditions	Sample Size / Fail		
		Lot# 1	Lot# 2	Lot# 3
** Temperature Cycle	-65/150C (1000 cycles)	77/0	77/0	77/0
Ball Bond Shear	76 ball bonds, min. 5 units	78/0	78/0	78/0
Bond Pull	76 ball bonds, min. 5 units	78/0	78/0	78/0
X-ray	(Top Side Only)	5/0	5/0	5/0
Manufacturability (MQ)	-	Pass	Pass	Pass

\*\*- Preconditioning sequence: Level 1-260C.

**Reference Qualification: SOT-23 Package at NFME****Qualification Data: Approved 05/14/2013**

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

**Qual Vehicle 1 : TL432ACDBVR****Package Construction Details**

Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

**Qualification:**  Plan  Test Results

Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
Electrical Characterization	-	Pass	-	-
Life Test	150C(300 Hrs)	77/0	77/0	-
**Autoclave	121C (192 Hrs)	77/0	77/0	77/0
**Thermal Shock	-65C/+150C (500 Cyc)	77/0	77/0	-
**Temperature Cycle	-65C/+150C (1000 Cyc)	77/0	77/0	77/0
**Unbiased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 Hrs)	77/0	77/0	-

**High Temp Storage Bake	170C (600Hrs)	77/0	77/0	77/0
Flammability (UL 94V-0)	(UL 94V-0)	5/0	5/0	-
Flammability (UL-1694)	(UL-1694)	5/0	5/0	-
Flammability (IEC 695-2-2)	(IEC 695-2-2)	5/0	5/0	-
Solderability	Steam age, 8 hours; PB-Free solder	22/0	22/0	-
Salt Atmosphere	-	22/0	22/0	-
X-ray	(top side only)	5/0	5/0	5/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	L1-260C	12/0	12/0	12/0
Notes ** - Preconditioning sequence: Level 1-260C.				
<b>Qual Vehicle 2 : TS321IDBVR</b>				
Package Construction Details				
Assembly Site:	NFME	Mold Compound:	R-17	
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03	
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu	
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size/Fail		
		Lot# 1	Lot# 2	Lot# 3
Electrical Characterization	-	Pass	-	-
Life Test	150C(300 Hrs)	77/0	-	-
**Autoclave	121C (192 Hrs)	77/0	77/0	77/0
**Thermal Shock	-65C/+150C (500 Cyc)	77/0	-	-
**Temperature Cycle	-65C/+150C (1000 Cyc)	77/0	77/0	77/0
**Unbiased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0
**Biased HAST	130C/85%RH (192 Hrs)	77/0	-	-
**High Temp Storage Bake	170C (600Hrs)	77/0	77/0	77/0
Flammability (UL 94V-0)	(UL 94V-0)	5/0	-	-
Flammability (UL-1694)	(UL-1694)	5/0	-	-
Flammability (IEC 695-2-2)	(IEC 695-2-2)	5/0	-	-
Solderability	Steam age, 8 hours; PB-Free solder	22/0	-	-
Salt Atmosphere	-	22/0	-	-
X-ray	(top side only)	5/0	5/0	5/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass
Moisture Sensitivity	L1-260C	12/0	12/0	12/0
Notes ** - Preconditioning sequence: Level 1-260C.				

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	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>