

PCN Number:	20140114000	PCN Date:	01/15/2014
Title:	Qualification of DFAB for (TLC5951RHAR/T) and RFAB, Carsem (Assembly) and MLA (Test) for (TPA6133A2RTJR/T)		
Customer Contact:	PCN Manager	Phone:	+1(214)480-6037
Dept:	Quality Services		
*Proposed 1st Ship Date:	4/15/2014	Estimated Sample Availability:	Date Provided at Sample request
Change Type:			
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input type="checkbox"/>	Design	<input type="checkbox"/>	Assembly Materials
<input type="checkbox"/>		<input type="checkbox"/>	Electrical Specification
<input checked="" type="checkbox"/>	Test Site	<input type="checkbox"/>	Mechanical Specification
<input type="checkbox"/>		<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Test Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Material
<input checked="" type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Materials
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process
<input type="checkbox"/>		<input type="checkbox"/>	Part number change
PCN Details			
Description of Change:			
This change notification is to announce additional Fab and Assembly/Test site options for the products shown in Groups 1 and 2 below.			
Group 1 Device (TLC5951RHAR/T): Fab Only Change			
Current		New	
Site/Process/Wafer Diameter		Site/Process/Wafer Diameter	
CFAB/LBC4 Process/200mm		DFAB/LBC4 Process/200mm	
Group 2 Device (TPA6133A2RTJR/T): Fab & A/T Change			
(Note: The LBC7 process was previously qualified at RFAB in 10/2010. The RTJ package was previously qualified at Carsem (CRS) in 12/2006. Details are provided in the Qual Data Section of this document.)			
Current Fab		Additional Fab	
Site/Process/Wafer Diameter		Site/Process/Wafer Diameter	
MIHO/LBC7 Process/200mm		RFAB/LBC7 Process/300mm	
Current Assembly/Test		Additional Assembly/Test	
Clark-A/T		CARSEM Assembly/ MLA Test	
Material Changes			
Type	Current: Clark-A/T	New: CARSEM	
Bond Wire Composition	Cu	Au	
Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.			
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 /Assembly Site	Chip Site Code (20L)	Chip Country Code (21 L)	Assembly Site Code (22L)	Assembly Country Origin (23L)
CFAB	CU3	CHN		
MIHO	MH8	JPN		
Clark-AT			QAB	PHL

Additional Sites

Chip Site /Assembly Site	Chip Site Code (20L)	Chip Country Code (21 L)	Assembly Site Code (22L)	Assembly Country Origin (23L)
DL-LIN	DLN	USA		
RFAB	RFB	USA		
CARSEM			CRS	MYS

Sample Product Shipping Label (not actual product label)

 TEXAS INSTRUMENTS MADE IN: Malaysia 2DC: 2Q: MSB 2 /260C/1 YEAR SEAL DT MSB 1 /235C/UNLIM 03/29/04 OPT: ITEM: 39 LBL: 5A (L)T0:1750			(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483SI2 (P) (2P) REV: (V) 0033317 (20L) CS0: SHE (21L) CCO:USA (22L) AS0: MLA (23L) ACO: MYS
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ASSEMBLY SITE CODES: TI-Clark = I, **Carsem CRS = W**

Product Affected:

Group 1 Device: Additional Fab Only (DFAB)	
TLC5951RHAR	TLC5951RHAT
Group 2 Device: Additional Fab (RFAB) and A/T Site (CARSEM/MLA)	
TPA6133A2RTJR	TPA6133A2RTJT

Group 1 Device (TLC5951RHAR) Qualification Data

Qualification Data: Approved 12/18/2013

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

Qualification Device 1: TLC5951RHA (MSL LEVEL3-260C)

Wafer Fab Site:	DFAB	Wafer Fab Process:	LBC4
Wafer Diameter:	200mm		

Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results					
Reliability Test	Conditions	Sample Size / Fail			
		Lot#1	Lot#2	Lot#3	
Electrical Characterization	Per datasheet specification	Pass	Pass	Pass	
**High Temp Storage Bake	170C (420 hours)	45/0	45/0	45/0	
ESD CDM	Per datasheet	3/0	3/0	3/0	
ESD HBM	Per datasheet	3/0	3/0	3/0	
Latch-up	Per JESD78	6/0	6/0	6/0	
Early Life Failure Rate	125C (24 hours)	1000/0	1000/0	1000/0	
High Temp Operating Life	140C (480 hours)	80/0	80/0	80/0	
**Temp Cycle	-65/150C (500 cycles)	77/0	77/0	77/0	
**Biased HAST	130C/85%RH (96 hours)	80/0	80/0	80/0	
**Preconditioning: Level 3-260C					

**Group 2 Device (TPA6133A2RTJR/T) Reference Qual Data
Qualification of LBC7 process at RFAB**

Qualification Data: Approved: 10/06/2010					
This qualification has been developed for the validation of this change. The qualification data will validate that the proposed change meets the applicable released technical specifications.					
Qualification Device: TPS51217DSC					
Wafer Fab Site:	RFAB	Metallization:	TiN/AlCu.5/TiN		
Wafer Fab Process:	LBC7	Wafer diameter:	300mm		
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results					
Reliability Test	Conditions	Sample Size /Fail			
		Lot#1	Lot#2	Lot#3	
Electrical Characterization	Per datasheet spec	Pass	Pass	Pass	
Latch-up	(per JESD78)	6/0	6/0	6/0	
**Biased HAST	130C/85%RH (96 Hrs)	77/0	77/0	77/0	
ESD HBM	1000V	3/0	3/0	3/0	
ESD CDM	250V	3/0	3/0	3/0	
High Temp. Storage Bake	170C (420 Hrs)	77/0	77/0	77/0	
**Autoclave 121C	121C, (96 Hrs)	77/0	77/0	77/0	
**T/C -65C/150C	-65C/+150C (500Cycles)	77/0	77/0	77/0	
Steady-state Life Test (See Note 1)	135C (635 Hrs)	77/0	77/0	77/0	
**Preconditioning: MSL 2@260C					

Note 1: Life test equivalent conditions

- 125C, 1000hrs
- 135C, 635hrs
- 140C, 480hrs
- 150C, 300hrs

Qualification of RTJ Package at Carsem (CRS)

Qualification Data: Approved 12/02/2006			
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: TPA6130A2RTJ (MSL 2-260C)			
Package Construction Details			
Assembly Site:	CRS	Mold Compound:	435370
# Pins-Designator, Family:	20-RTJ, QFN	Mount Compound:	439525
Leadframe (Finish, Base):	NiPdAu	Bond Wire:	1.0 Mil Dia., Au
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results			
Reliability Test	Conditions	Sample Size Pass / Fail	
		Lot 1	
**Life Test, 140C	480 Hours	116/0	
**Thermal Shock, -65/150C	500 Cycles	77/0	
ESD HBM	1000V	3/0	
ESD CDM	250V	3/0	
Electrical Characterization	-	Pass	
Latch-up	Per JESD78	6/0	
**- Preconditioning sequence: Level 2-260C.			

Additional Reference: Qualification of QFN Package

Qualification Data: Approved 06/11/2004				
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 1: TPS65010RGZ (MSL 2-260C)				
Package Construction Details				
Assembly Site:	CRS	Mold Compound:	435370	
# Pins-Designator, Family:	48-RGZ, QFN	Mount Compound:	435143	
Leadframe (Finish, Base):	NiPdAu	Bond Wire:	1.3 Mil Dia., Au	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size Pass / Fail		
		Lot 1	Lot 2	Lot3
**Life Test, 150C	300 Hours	40/0	40/0	40/0
**HAST 130C/85%RH	96 Hours	77/0	77/0	77/0
**Autoclave, 121C	96 Hours	77/0	77/0	77/0
**Thermal Shock, -65/150C	500 Cycles	77/0	77/0	77/0
**Temp Cycle, -65/+150C	500 Cycles	77/0	77/0	77/0
**High-Temp Storage, 170C	420 hours	30/0	30/0	30/0
Solvent Resistance		12/0	12/0	12/0
**- Preconditioning sequence: Level 2-260C.				

Qual Vehicle 2: TPA2005D1 (MSL 2-260C)				
Package Construction Details				
Assembly Site:	CRS	Mold Compound:	435370	
# Pins-Designator, Family:	8-DRB, QFN	Mount Compound:	435143	
Leadframe (Finish, Base):	NiPdAu	Bond Wire:	1.0 Mil Dia., Au	
Qualification: <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results				
Reliability Test	Conditions	Sample Size Pass / Fail		
		Lot 1	Lot 2	Lot 3
**Life Test, 155C	240 Hours	116/0	-	-
**HAST 130C/85%RH	96 Hours	77/0	77/0	77/0
**Autoclave, 121C	96 Hours	77/0	77/0	77/0
**Thermal Shock, -65/150C	500 Cycles	77/0	77/0	77/0
Temp Cycle, -65/+150C	500 Cycles	77/0	77/0	77/0
**High-Temp Storage, 170C	420 hours	77/0	-	-
**- Preconditioning sequence: Level 2-260C.				

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	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com