

<b>PCN Number:</b>	20230206000.1A	<b>PCN Date:</b>	March 02, 2023		
<b>Title:</b>	Qualification of additional Fab site (RFAB) and Assembly site (CDAT) options for select LBC7 devices				
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services		
<b>Proposed 1<sup>st</sup> Ship Date:</b>	May 6, 2023	<b>Sample requests accepted until:</b>	Mar 6, 2023*		
<b>*Sample requests received after March 6, 2023 will not be supported.</b>					
<b>Change Type:</b>					
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process		
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Assembly Process		
<input type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification		
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Electrical Specification		
<input type="checkbox"/>	Test Site	<input checked="" type="checkbox"/>	Packing/Shipping/Labeling		
<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Packing/Shipping/Labeling		
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material		
<input type="checkbox"/>	Wafer Bump Process	<input type="checkbox"/>	Wafer Bump Material		
<input checked="" type="checkbox"/>	Wafer Fab Site	<input checked="" type="checkbox"/>	Wafer Fab Materials		
<input type="checkbox"/>	Wafer Fab Process	<input type="checkbox"/>	Wafer Fab Materials		
<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Part number change		
<b>PCN Details</b>					
<b>Description of Change:</b>					
<p><b>Revision A</b> is to announce the <u>addition</u> of new devices that were not included on the original PCN notification. The new devices are highlighted in yellow and <b>bolded</b> in the product affected section below. The expected first shipment date for the new devices will be 90 days from this notice for these newly added devices only. The proposed 1<sup>st</sup> ship date of May 6, 2023 still applies for the original set of devices.</p>					
<p>Texas Instruments is pleased to announce the qualification of an additional fab (RFAB) and assembly (CDAT) site for selected devices as listed below in the product affected section.</p>					
<b>Current Fab Site</b>			<b>Additional Fab Site</b>		
<b>Current Fab Site</b>	<b>Process</b>	<b>Wafer Diameter</b>	<b>Additional Fab Site</b>	<b>Process</b>	<b>Wafer Diameter</b>
MIHO	LBC7	200 mm	RFAB	LBC7	300 mm
<p>For the devices in the group 2, construction differences are as follows:</p>					
	<b>UTL1 &amp; UTL3</b>	<b>CDAT</b>			
Mold Compound	SID#CZ0141	4222198			
Mount Compound	SID#PZ0031	4207123			
Bond wire composition, diameter	Au, 1.3 mil	Cu, 0.8 mil			
<p>Qual details are provided in the Qual Data Section.</p>					
<b>Reason for Change:</b>					
Continuity of Supply					
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>					
None					
<b>Impact on Environmental Ratings:</b>					
<p>Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.</p>					
<b>RoHS</b>	<b>REACH</b>	<b>Green Status</b>	<b>IEC 62474</b>		
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change		

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

**Fab Site Information:**

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
MIHO8	MH8	JPN	Ibaraki
<b>RFAB</b>	<b>RFB</b>	<b>USA</b>	<b>Richardson</b>

**Assembly Site Information:**

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
UTL1	NSE	THA	Bangkok
UTL3	UT3	THA	Bangpakong
<b>CDAT</b>	<b>CDA</b>	<b>CHN</b>	<b>Chengdu</b>

Sample product shipping label (not actual product label)

**Product Affected:**

**Group 1 Devices Adding RFAB as an additional Wafer Fab site:**

SN1102023DBZR	TLC59116IRHBR	TPS546C20ARVFT	TPS563210DDFR
SN1102023LP	TPS53318DQPR	TPS546C23RVFR	TPS563210DDFT
SN1102023LPB	TPS53318DQPT	TPS546C23RVFT	TPS563219ADDFR
SN1401038RTER	TPS53319DQPR	TPS546C23ZRVFR	TPS563219ADDFT
SN1401043RVER	TPS53319DQPT	TPS546C23ZRVFT	TPS563219DDFR
SN1402065RVER	TPS53513RVER	TPS548A20RVER	TPS563219DDFT
SN1402065RVET	TPS53513RVER-P	TPS548A20RVER-P	TPS564201DDCR
SN1501019ADDCR	TPS53513RVET	TPS548A20RVET	TPS564201DDCT
SN1501019DDCR	TPS53515RVER	TPS548B22RVFR	TPS564208DDCR
SN1501019DDCT	TPS53515RVET	TPS548B22RVFT	TPS564208DDCT
SN1501020DDCR	TPS53913RVER	TPS549A20RVER	<b>TPS62240DDCR</b>
SN1501020DDCT	TPS53913RVET	TPS549A20RVET	<b>TPS62240DDCT</b>
SN1504025DDCR	TPS53915RVER	TPS549B22RVFR	<b>TPS62260DDCR</b>
SN1504025DDCT	TPS53915RVET	TPS549B22RVFT	<b>TPS62260DDCT</b>
SN1504026DDCR	TPS543B20RVFR	TPS55340PWP	<b>TPS62262DDCR</b>
SN1504026DDCT	TPS543B20RVFT	TPS55340PWPR	<b>TPS62262DDCT</b>
SN1602018RVFR	TPS543C20ARVFR	TPS55340RTER	<b>TPS62561DDCR</b>
SN1602018RVFT	TPS543C20RVFR	TPS55340RTET	<b>TPS62561DDCT</b>
SN1607018DQPR	TPS543C20RVFT	TPS562200DDCR	TPS82084SILR
SN1607021DQPR	TPS544A20RVFR	TPS562200DDCT	TPS82084SILT
SN1611045DDCR	TPS544A20RVFT	TPS562209DDCR	TPS82085SILR
SN1804026DDFR	TPS544B20RVFR	TPS562209DDCT	TPS82085SILT
SN1804026DDFT	TPS544B20RVFT	TPS563200DDCR	TPSM41615MOVR

SN1807012RVFR	TPS544C20RVFR	TPS563200DDCT	TPSM41625MOVR
SN1807013RVER	TPS544C20RVFT	TPS563209DDCR	TPSM846C23MOLR
SN1812002RVFR	TPS544C20ZRVFR	TPS563209DDCT	TPSM846C24MOLR
SN2101029RVER	TPS544C20ZRVFT	TPS563210ADDFR	
TLC59116IPWR	TPS546C20ARVFR	TPS563210ADDFT	

**Group 2 Devices Adding RFAB Fab site and CDAT as an additional Assembly site:**

TPS62240DRVR	TPS62250DRVT	TPS62262DRVR	TPS62291DRVT
TPS62240DRVT	TPS62260ADRVR	TPS62262DRVT	TPS62293DRVR
TPS62242DRVR	TPS62260ADRVT	TPS62263DRVR	TPS62562DRVR
TPS62242DRVT	TPS62260DRVR	TPS62263DRVT	TPS62562DRVT
TPS62243DRVR	TPS62260DRVT	TPS62290DRVR	TPS62590DRVR
TPS62243DRVT	TPS62261DRVR	TPS62290DRVT	TPS62590DRVT
TPS62250DRVR	TPS62261DRVT	TPS62291DRVR	

## Qualification Report

Approve Date 6-October-2010

### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS51217DSC
ED	Electrical Characterization	Per Datasheet Parameters	Pass
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0
AC	Autoclave, 121C	96 Hours	3/231/0
HBM	ESD - HBM	2000 V	3/9/0
CDM	ESD - CDM	500 V	3/9/0
HTOL	Life Test, 135C	635 Hours	3/231/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	3/231/0
LU	Latch-up	(per JESD78)	3/18/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/18/0

- Qual Device TPS51217DSC is qualified at LEVEL2-260C

- 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

**Automotive New Product Qualification Summary**  
**(As per AEC-Q100 and JEDEC Guidelines)**  
**Approved 15-Feb-2022**

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

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: TPS62261TDRVRQ1	QBS Package Reference: Q25171QWDRCRQ1
<b>Test Group A – Accelerated Environment Stress Tests</b>								
PC	A1	JEDEC J-STD-020 JESD22-A113	3		MSL2/260C	-	3/693/0	3/693/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 hours	1/77/0 & QBS	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 hours	3/231/0	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 cycles	3/231/0	3/231/0
TC-WBP	A4	MIL-STD883 Method 2011	1	60	Bond Pull over Ball Post T/C 500 Cycles	Wires	QBS	1/30/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A	1/45/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 hours	QBS	3/231/0
<b>Test Group B – Accelerated Lifetime Simulation Tests</b>								
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 hours	B1 Data carried over from original TPS62261TDRVRQ1 qualification	
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 hours	B2 Data carried over from original TPS62261TDRVRQ1 qualification	
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	N/A	
<b>Test Group C – Package Assembly Integrity Tests</b>								
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	-	1/30/0	
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear, Cpk >1.67	Wires	1/30/0	
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Free Solder	QBS to package family data	1/15/0
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Solder	QBS to package family data	1/15/0

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: TPS62261TDRVRQ1	QBS Package Reference: Q25171QWDRCRQ1
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	QBS to package family data	3/30/0
<b>Test Group D – Die Fabrication Reliability Tests</b>								
EM	D1	JESD61	-	-	Electromigration	-	Completed Per Process Technology Requirements	-
TDDb	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	Completed Per Process Technology Requirements	-
HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	-
NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements	-
SM	D5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements	-
<b>Test Group E – Electrical Verification Tests</b>								
HBM	E2	AEC Q100-002	1	3	ESD - HBM	2000 V	E2 Data carried over from original TPS62261TDRVRQ1 qualification	
CDM	E3	AEC Q100-011	1	3	ESD - CDM	500 V	E3 Data carried over from original TPS62261TDRVRQ1 qualification	
LU	E4	AEC Q100-004	1	6	Latch-up	Per AEC Q100-004	E4 Data carried over from original TPS62261TDRVRQ1 qualification	
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67	E5 Data carried over from original TPS62261TDRVRQ1 qualification	

- QBS: Qual By Similarity

**A1 (PC): Preconditioning:**

Performed for THB, Biased HAST, AC, uHAST, TC & PTC samples, as applicable.

**Ambient Operating Temperature by Automotive Grade Level:**

Grade 0 (or E): -40°C to +150°C  
Grade 1 (or Q): -40°C to +125°C  
Grade 2 (or T): -40°C to +105°C  
Grade 3 (or I): -40°C to +85°C

**E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):**

Room/Hot/Cold : HTOL, ED  
Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU  
Room : AC/uHAST

**Green/Pb-free Status:**

Qualified Pb-Free (SMT) and Green

For questions regarding this notice, e-mails can be sent to the contact below or your local Field Sales Representative.

<b>Location</b>	<b>E-Mail</b>
WW Change Management Team	<a href="mailto:PCN_ww_admin_team@list.ti.com">PCN_ww_admin_team@list.ti.com</a>

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