

<b>PCN Number:</b>	20180925001.1	<b>PCN Date:</b>	Oct. 1, 2018												
<b>Title:</b>	Qualify TI Chengdu (CDAT) as an additional Assembly & Test site for select devices														
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services												
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Jan. 1, 2019	<b>Estimated Sample Availability:</b>	Provided upon Request												
<b>Change Type:</b>															
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design												
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet												
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change												
<input type="checkbox"/>	Mechanical Specification	<input checked="" type="checkbox"/>	Test Site												
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process												
		<input type="checkbox"/>	Wafer Bump Site												
		<input type="checkbox"/>	Wafer Bump Material												
		<input type="checkbox"/>	Wafer Bump Process												
		<input type="checkbox"/>	Wafer Fab Site												
		<input type="checkbox"/>	Wafer Fab Materials												
		<input type="checkbox"/>	Wafer Fab Process												
<b>PCN Details</b>															
<b>Description of Change:</b>															
Texas Instruments is pleased to announce the qualification of TI Chengdu (CDAT) as an additional Assembly & Test site for the list of devices shown below. Material differences between sites are as follows.															
<table border="1"> <thead> <tr> <th>Assembly Site</th> <th>Assembly Site Origin</th> <th>Assembly Country Code</th> <th>Assembly City</th> </tr> </thead> <tbody> <tr> <td>TI Clark</td> <td>QAB</td> <td>PHL</td> <td>Angeles City</td> </tr> <tr> <td><b>TI Chengdu</b></td> <td><b>CDA</b></td> <td><b>CHN</b></td> <td><b>Chengdu</b></td> </tr> </tbody> </table>				Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly City	TI Clark	QAB	PHL	Angeles City	<b>TI Chengdu</b>	<b>CDA</b>	<b>CHN</b>	<b>Chengdu</b>
Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly City												
TI Clark	QAB	PHL	Angeles City												
<b>TI Chengdu</b>	<b>CDA</b>	<b>CHN</b>	<b>Chengdu</b>												
<b>Material Differences:</b>															
<b>Group 1 Device:</b>															
	<b>TI Clark</b>	<b>TI Chengdu</b>													
Mold Compound	4208625	4222198													
<b>Group 2 Device:</b>															
No Material differences between sites															
Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.															
<b>Reason for Change:</b>															
Continuity of Supply															
<b>Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):</b>															
None															
<b>Anticipated impact on Material Declaration</b>															
<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" type="checkbox"/>	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 from the <a href="#">TI Eco-Info website</a> . There is no impact to the material meeting current regulatory compliance requirements with this PCN change.												
<b>Changes to product identification resulting from this PCN:</b>															
Assembly Site															
TI Clark Philippines	Assembly Site Origin (22L)	ASO: QAB													
TI Chengdu	Assembly Site Origin (22L)	ASO: CDA													

Sample product shipping label (not actual product label)





MADE IN: Malaysia  
2DC: 2d:  
MSL 2 /260C/1 YEAR SEAL DT  
MSL 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) ASO: MLA (23L) ACO: MYS

**Group 1 Product Affected**

HD3SS460IRNHR	HD3SS460RNHR	PHD3SS460RNHR
HD3SS460IRNHT	HD3SS460RNHT	

**Group 2 Product Affected**

BQ25970YFFR	BQ25971YFFR	PQ25970YFFR
BQ25970YFFT	BQ25971YFFT	PQ25970YFFT

**Group 1: Qualification Report**  
**HD3SS460RNHR and HD3SS460IRNH in CDAT**  
 Approve Date 13-Aug-2018

**Product Attributes**

Attributes	Qual Device: <u>HD3SS460IRNH</u>	Qual Device: <u>HD3SS460RNH</u>	QBS Process Reference: <u>HD3SS3411TRWAQ1</u>
Assembly Site	CDAT	CDAT	CLARK-AT
Package Family	QFN	QFN	QFN
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	FFAB	FFAB	FFAB
Wafer Process	1833BICOM3ZL	1833BICOM3ZL	1833BICOM3ZL_RF

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL2-260C: HD3SS460IRNH, HD3SS460RNH

**Qualification Results**

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

Type	Test Name / Condition	Duration	Qual Device: <u>HD3SS460IRNH</u>	Qual Device: <u>HD3SS460RNH</u>	QBS Process Reference: <u>HD3SS3411TRWAQ1</u>
AC	Autoclave 121C	96 Hours	-	1/77/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	Pass
ELFR	Early Life Failure Rate, 140C	24 Hours	-	-	3/2400/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0
HBM	ESD - HBM	4000 V	-	1/3/0	1/3/0
CDM	ESD - CDM	1500 V	-	1/3/0	1/3/0
HTOL	Life Test, 140C	480 Hours	-	-	3/231/0
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	3/231/0	2/90/0
LU	Latch-up 90C	(per JESD78)	-	1/6/0	1/6/0
LU	Latch-up 25C	(per JESD78)	-	1/6/0	1/6/0
PD	Physical Dimensions	--	-	3/15/0	3/30/0

SD	Surface Mount Solderability	Pb Free	-	3/15/0	1/15/0
SD	Surface Mount Solderability	Pb	-	3/15/0	1/15/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	1/77/0	3/231/0
MQ	Manufacturing Assembly	(per mfg. Site specification)	-	Pass	Pass
BPC	Bond Pad Cratering Check			3/6/0	
TPI	Thermal Path Integrity	Level 2-260C( +5/-0C)		3/26/0	-
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	3/231/0	-
WBP	Bond Pull	Wires	-	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	-	3/228/0	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 0.7eV : 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

THIS INFORMATION RELATING TO QUALITY AND RELIABILITY IS PROVIDED "AS IS." Product information detailed in this report may not accurately reflect TI's current product materials, processes and testing used in the construction of the TI products. Customers are solely responsible to conduct sufficient engineering and additional qualification testing to determine whether a device is suitable for use in their applications. Using TI products outside limits stated in TI's datasheet may void TI's warranty. See TI's Terms of Sale at "<http://www.ti.com/lscs/ti/legal/termsforsale.page>"

**Group 2: Qualification Report**  
**BQ25970 - Core (bqDoublers) LBC9LV Qualification**  
**Chengdu-AT**  
 Approve Date 20-Sep-2018

**Product Attributes**

Attributes	Qual Device: <u>BQ25970YFFR</u>	QBS Product Reference: <u>BQ25970YFF</u>	QBS Product Reference: <u>BQ25970YFFR</u>	QBS Package Reference: <u>LP8758A2F0YFFR</u>
<b>Assembly Site</b>	CLARK AT	CLARK AT	CLARK AT	CLARK-AT
<b>Package Family</b>	DSBGA	DSBGA	DSBGA	YFF
<b>Flammability Rating</b>	-	-	-	UL 94 V-0
<b>Wafer Fab Supplier</b>	RFAB	RFAB	RFAB	RFAB
<b>Wafer Process</b>	LBC9LV	LBC9LV	LBC9LV	LBC8LV

- QBS: Qual By Similarity
- Qual Device BQ25970YFFR is qualified at LEVEL1-260C

**Qualification Results**

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

Type	Test Name / Condition	Duration	Qual Device: <u>BQ25970YFFR</u>	QBS Product Reference: <u>BQ25970YFF</u>	QBS Product Reference: <u>BQ25970YFFR</u>	QBS Package Reference: <u>LP8758A2F0YFFR</u>
ED	Electrical Characterization	Per Datasheet Parameters	-	-	Pass	Pass
ELFR	Early Life Failure Rate, 140C	24 Hours	-	1/800/0	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	-	-
HBM	ESD - HBM	4000 V	-	-	1/3/0	-
CDM	ESD - CDM	1500 V	-	-	1/3/0	1/3/0
HTOL	Life Test, 140C	480 Hours	-	3/231/0	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	3/231/0	-	-
LU	Latch-up	(per JESD78)	-	-	1/6/0	1/6/0
MQ	Manufacturability (Probe)	(Approved by Probe Site)	Pass	-	-	-
MQ	Manufacturability (Assembly)	(Approved by A-T Site)	Pass	Pass	Pass	-
SBS	Bump-shear	--	-	3/150/0	-	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	3/231/0	-	-
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	3/231/0	-	-

- 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 0.7eV : 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:  
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For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

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