



<b>PCN Number:</b>	20181214005.1		<b>PCN Date:</b>	Dec 17 2018												
<b>Title:</b>	Qualification of TI Chengdu A/T (CDAT) as an Assembly and 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>	Mar 17 2019	<b>Estimated Sample Availability:</b>	Provided upon Request													
<b>Change Type:</b>																
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Assembly Materials											
<input type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification											
<input checked="" type="checkbox"/>	Test Site	<input 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											
		<input type="checkbox"/>	Part number change													
<b>PCN Details</b>																
<b>Description of Change:</b>																
<p>Texas Instruments is pleased to announce the qualification of TI Chengdu (CDAT) as an Additional Assembly site for the list of devices shown below. There are no construction differences between devices built at the two sites.</p> <p>Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.</p>																
<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 checked="" type="checkbox"/>	No Impact to the Material Declaration	<input 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 website</a> .													
<b>Changes to product identification resulting from this PCN:</b>																
<table border="1"> <thead> <tr> <th>Assembly Site</th> <th>Assembly Site Origin (22L)</th> <th>Assembly Country Code (21L)</th> <th>Assembly City</th> </tr> </thead> <tbody> <tr> <td>TI Clark</td> <td>QAB</td> <td>PHL</td> <td>Angeles City, Pampanga</td> </tr> <tr> <td><b>CDAT</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 (22L)	Assembly Country Code (21L)	Assembly City	TI Clark	QAB	PHL	Angeles City, Pampanga	<b>CDAT</b>	<b>CDA</b>	<b>CHN</b>	<b>Chengdu</b>
Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (21L)	Assembly City													
TI Clark	QAB	PHL	Angeles City, Pampanga													
<b>CDAT</b>	<b>CDA</b>	<b>CHN</b>	<b>Chengdu</b>													
Sample product shipping label (not actual product label)																



MADE IN: Malaysia  
2DC: 2Q:

MSL 2 /260C/1 YEAR	SEAL DT
MSL 1 /235C/UNLIM	03/29/04

OPT:  
ITEM: 39  
LBL: 5A (L)T0:1750



G4

(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483SI2  
(P)  
(2P) REV: (V) 0033317  
(20L) CSO: SHE (21L) CCO:USA  
(22L) ASO: MLA (23L) ACO: MYS

Product Affected			
LM36272YFFR	LM3632AYFFR	LM36922HYFFR	LM36923HYFFR
LM36273YFFR	LM3632YFFR	LM36922YFFR	LM36923YFFR
LM36274YFFR	LM3631YFFR		



TI Information  
Selective Disclosure

### Qualification Report

**LM36272, LM36273, LM36274 and LM3631 Product Assembly Transfer to CDAT: Test  
Vehicle = LM36274YFFR  
Approve Date 13-Nov-2018**

#### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: LM36274YFFR	QBS Product Reference: LM36274YFFR	QBS Product Reference: LM3631YFFR	QBS Product Reference: LM3632YFFR
AC	Autoclave 121C	96 Hours	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	1/30/0	1/30/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	1/305/0	-
CDM	ESD - CDM	1000 V	1/3/0	1/3/0	-	1/3/0
CDM	ESD - CDM	1500 V	1/3/0	1/3/0	-	1/3/0
HBM	ESD - HBM	2500 V	1/3/0	1/3/0	-	1/3/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	1/66/0	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	1/77/0	1/77/0
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	1/77/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-
LU	Latch-up	(per JESD78)	1/12/0	1/12/0	1/12/0	1/12/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	1/Pass	-	-	-
MQ	Manufacturability (Fab)	(per mfg. Site specification)	-	-	-	-
VQR	Visual Quality Reliability Inspection	Post Temp Cycle	-	-	-	-

Type	Test Name / Condition	Duration	QBS Process Reference: SH8350BCA0PAPG4	QBS Package Reference: LM3638A0RDYFDR	QBS Package Reference: LM3638A3YFDR
AC	Autoclave 121C	96 Hours	3/231/0	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	3/90/0	-	3/90/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	3/3000/0
CDM	ESD - CDM	1000 V	-	-	3/9/0
CDM	ESD - CDM	1500 V	3/9/0	-	3/9/0
HBM	ESD - HBM	2500 V	3/9/0	-	3/9/0
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	-	3/231/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	3/231/0	-	3/231/0
HTOL	Life Test, 125C	1000 Hours	3/224/0	-	3/231/0
TC	Temperature Cycle, -55/125C	700 Cycles	-	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	-	3/231/0
LU	Latch-up	(per JESD78)	6/18/0	-	3/18/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	3/Pass	3/Pass	3/Pass
MQ	Manufacturability (Fab)	(per mfg. Site specification)	3/Pass	-	-
VQR	Visual Quality Reliability Inspection	Post Temp Cycle	-	3/6/0	-

- QBS: Qual By Similarity  
- Qual Device LM36274FFR is qualified at LEVEL1-260C  
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



TI Information  
Selective Disclosure

### Qualification Report

**LM3643, LM3644, LM3644TT, LM3648, LM36922H, LM36923H, LM36923, TLV61310, LM36922 and TLV61320 Products in 12 bump WC SP Assembly Transfer to CDAT:  
Test Vehicle = LM36923HYFFR  
Approve Date 14-Nov-2018**

#### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: LM36923HYFFR	QBS Product Reference: LM36923HYFFR	QBS Product Reference: LM36923YFFR	QBS Product Reference: LM36922YFFR	QBS Product Reference: LM3643YFFR
AC	Autoclave 121C	96 Hours	-	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	1/30/0	1/30/0	2/60/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	-	-
CDM	ESD - CDM	1000 V	-	-	-	-	1/3/0
CDM	ESD - CDM	1500 V	-	1/3/0	1/3/0	1/3/0	1/3/0
HBM	ESD - HBM	2500 V	-	1/3/0	1/3/0	1/3/0	1/3/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	1/77/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	1/77/0	1/77/0	3/231/0
HTOL	Life Test, 150C	300 Hours	-	1/77/0	-	-	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-
LU	Latch-up	(per JESD78)	-	1/12/0	1/12/0	1/12/0	1/12/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	1/Pass	-	-	-	-
MQ	Manufacturability (Fab)	(per mfg. Site specification)	-	-	-	-	-
VQR	Visual Quality Reliability Inspection	Post Temp Cycle	-	-	-	-	-

Type	Test Name / Condition	Duration	QBS Product Reference: LM3644YFFR/ LM3644TTYFFR	QBS Product Reference: TLV61310YFFR TLV61320YFFR	QBS Process Reference: SH8350BCA0PAPG4	QBS Package Reference: LM3638A0RDYFDR	QBS Package Reference: LM3638A3YFDR
AC	Autoclave 121C	96 Hours	-	-	3/231/0	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	2/60/0	3/90/0	-	3/90/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	-	3/3000/0
CDM	ESD - CDM	1000 V	-	-	-	-	3/9/0
CDM	ESD - CDM	1500 V	1/3/0	-	3/9/0	-	3/9/0
HBM	ESD - HBM	2500 V	1/3/0	-	3/9/0	-	3/9/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	3/231/0	-	3/231/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	3/231/0	-	3/231/0
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	3/224/0	-	3/231/0
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	3/231/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	-	3/231/0
LU	Latch-up	(per JESD78)	1/6/0	-	6/18/0	-	3/18/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	-	-	3/Pass	3/Pass	3/Pass
MQ	Manufacturability (Fab)	(per mfg. Site specification)	-	-	3/Pass	-	-
VQR	Visual Quality Reliability Inspection	Post Temp Cycle	-	-	-	3/6/0	-

- QBS: Qual By Similarity  
- Qual Device LM36923HYFFR is qualified at LEVEL1-260C  
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



TI Information  
Selective Disclosure

## Qualification Report

**LM3632A, LM3632 Product Assembly Transfer to CDAT: Test Vehicle = LM3632AYFFR**  
Approve Date 14-Nov-2018

### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: LM3632AYFFR	QBS Product Reference: LM3632B1YFFR	QBS Product Reference: LM3632B1YFFR	QBS Product Reference: LM3632B0YFFR	QBS Product Reference: LM3632A1YFFR
AC	Autoclave 121C	96 Hours	-	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	1/30/0	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	-	-
CDM	ESD - CDM	1500 V	-	1/3/0	1/3/0	-	3/9/0
HBM	ESD - HBM	2500 V	-	1/3/0	1/3/0	-	3/9/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	1/77
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	-	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-
LU	Latch-up	(per JESD78)	-	-	1/6/0	2/12/0	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	1/Pass	1/Pass	-	-	1/Pass
MQ	Manufacturability (Fab)	(per mfg. Site specification)	-	-	-	-	-

Type	Test Name / Condition	Duration	QBS Product Reference: LM3638A3YFLR	QBS Product Reference: LM3643YFFR	QBS Process Reference: SH8350BCA0PAPG4	QBS Package Reference: LM3638YFFR
AC	Autoclave 121C	96 Hours	3/231/0	-	3/231/0	-
ED	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	1/30/0
ELFR	Early Life Failure Rate, 125C	48 Hours	3/3000/0	-	-	3/231/0
CDM	ESD - CDM	1500 V	1/3/0	3/15/0	3/9/0	3/9/0
HBM	ESD - HBM	2500 V	1/3/0	3/15/0	3/9/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	1/77/0	3/231/0	1/77/0
HTSL	High Temp. Storage Bake, 170C	420 Hours	3/231/0	-	3/231/0	1/77/0
HTOL	Life Test, 125C	1000 Hours	3/231/0	3/231/0	3/224/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	1/77/0
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	1/77/0
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	-	3/231/0	-
LU	Latch-up	(per JEESD78)	3/18/0	1/6/0	6/48/0	3/18/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	-	-	-	-
MQ	Manufacturability (Fab)	(per mfg. Site specification)	3/Pass	-	3/Pass	-

- QBS: Qual By Similarity

- Qual Device LM3632AYFFR is qualified at LEVEL1-260C

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 JEESD47: -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Website: <http://www.ti.com/>

**Green/Pb-free Status:**

Qualified Pb-Free(SMT) and Green

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>