TEXAS INSTRUMENTS 12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN#20191101000.1
Qualification of CDAT as an additional assembly site for select QFN devices
Change Notification / Sample Request

Date: January 29, 2020

Dear TI Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

The customer should acknowledge receipt of this notification by email within **30** days of the date of receipt. Lack of acknowledgement of this notice within 30 days constitutes customer acceptance of the change.

Samples or additional data to support customer evaluation must be requested within 30 days of receipt of this notification. If samples are requested for evaluation the customer must provide evaluation results within the sample evaluation period indicated on page 3 of this notification. The Sample Evaluation Period begins on the date the customer receives samples from TI.

If the customer approved the change TI can proceed with implementation of the change. The proposed first ship date is shown on page 3.

If the customer does not approve the PCN or the approval response is not provided within the Sample Evaluation Period, TI can implement the change, but the customer may elect to place an order for unchanged product by the Last Time Buy Date for delivery by the Last Time Ship Date. TI cannot guarantee that shipments to the customer after any last time order is delivered will not include the changed material. If the customer places an order with delivery after the Last Time Shipment Date, the order may be fulfilled with changed material or any material processed to TI specifications at that future time.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact your field sales representative.

Sincerely,
PCN Team
SC Business Services

20191101000.1
Change Notification / Sample Request
Attachments

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
SN74AVC8T245RHLR	36020428
TPS63000DRCR	39140521
TPS63000DRCR	39140521/
TPS63000DRCT	39140521/
TPS63000DRCR	39140521/TPS63000DRCR
TPS63000DRCT	39140521/TPS63000DRCT
TPS63000DRCR	99012BEH
TPS62172DSGT	99053MQR
TPS74801DRCR	HUW3H-MP-00004395-000

Technical details of this Product Change follow on the next page(s).

PCN Number:	20191101000.1	**PCN Date:**	Jan 29 2020
Title:	Qualification of CDAT as an additional assembly site for select QFN devices		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Apr 28 2020	**Sample Eval Period:**	90 days
Last Time Buy Date:	Jun 28 2020	**Last Time Ship Date:**	Sept 28 2020

Change Type:

☒ Assembly Site	☐ Design	☐ Wafer Bump Site
☐ Assembly Process	☐ Data Sheet	☐ Wafer Bump Material
☒ Assembly Materials	☐ Part number change	☐ Wafer Bump Process
☐ Mechanical Specification	☐ Test Site	☐ Wafer Fab Site
☐ Packing/Shipping/Labeling	☐ Test Process	☐ Wafer Fab Materials
		☐ Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of CDAT as an additional assembly site for the list of QFN devices shown below. Current assembly sites and Material differences are as follows:

Group 1 BOM comparison:

	MLA	CDAT
Mold Compound	4208625	4222198
Mount Compound	4205846	4207123

Group 2 BOM comparison:

	MLA	Clark	CDAT
Mold Compound	4208625	4208625	4222198
Mount Compound	4205846	4207768	4207123

Group 3 BOM comparison:

	MLA	CDAT
Mold Compound	4208625	4222198
Mount Compound	4212088	4207123

Reason for Change:

Continuity of Supply

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

None

Anticipated impact on Material Declaration

☐	No Impact to the Material Declaration	☒	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 at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp

Changes to product identification resulting from this PCN:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
MLA	MLA	MYS	Kuala Lumpur
CLARK	QAB	PHL	Angeles City, Pampanga
CDAT	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)

TEXAS INSTRUMENTS
G4
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)TO:1750

(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:

Group 1 Device List (Current MLA Assembly, add CDAT):

SN74AVC8T245RHLR	TPS63000DRCR	TPS63000DRCT

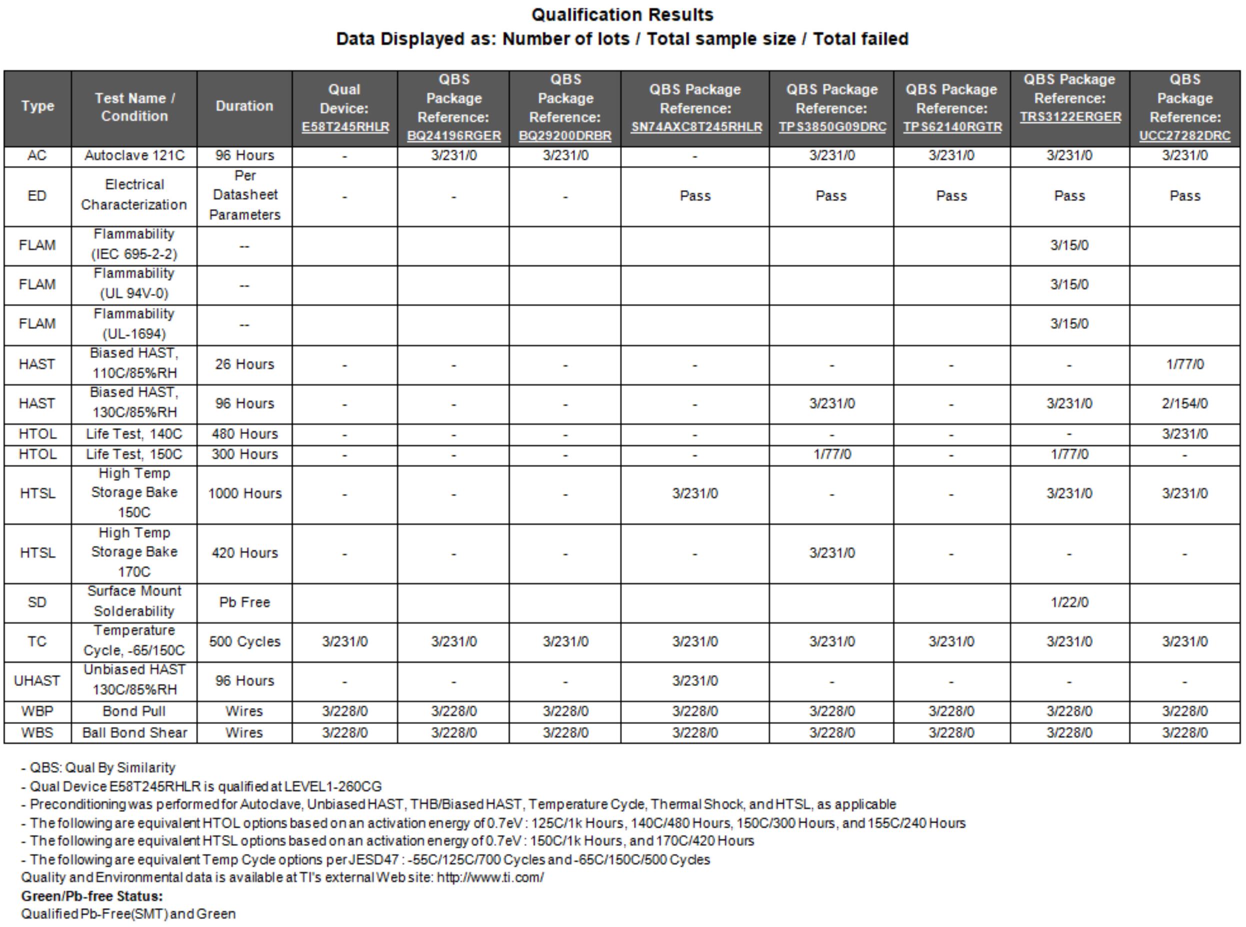
Group 2 Device List (Current MLA Assembly & Clark, add CDAT):

TPS74801DRCR

Group 3 Device List (Current MLA Assembly, add CDAT):

TPS62172DSGT

Group 1 Qual Memo:



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

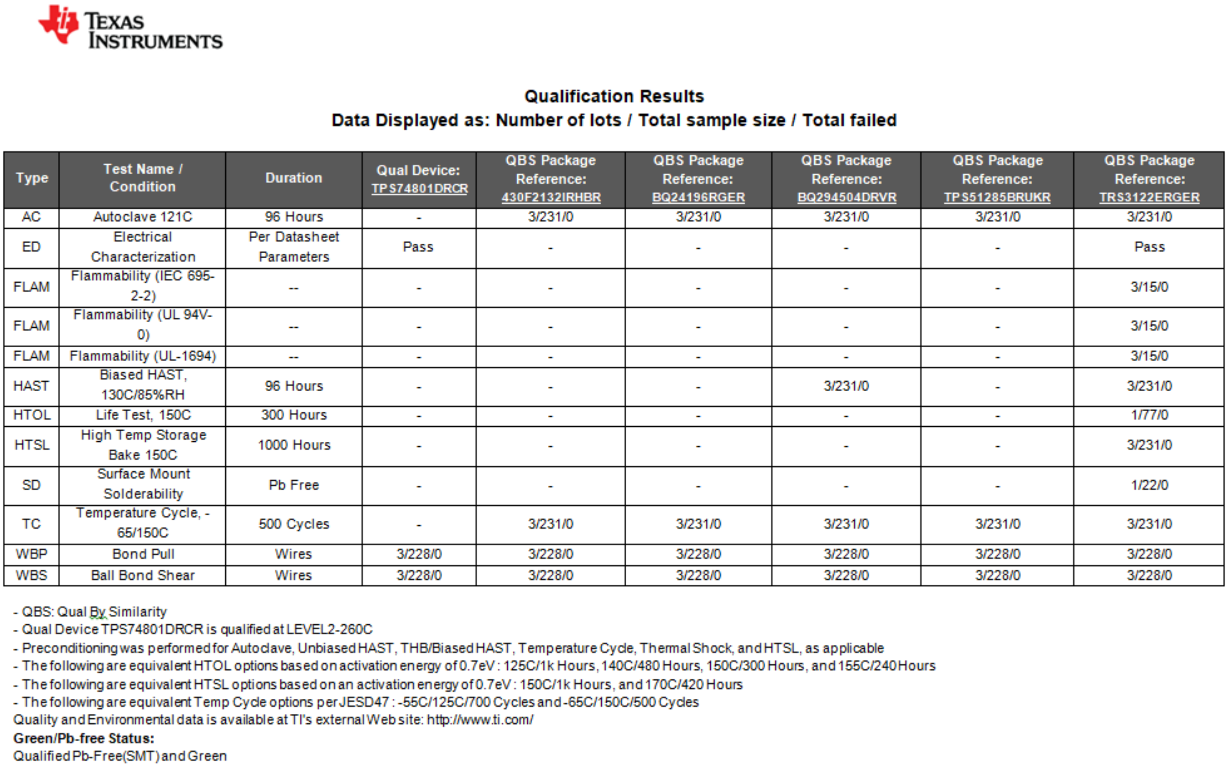
Type	Test Name / Condition	Duration	Qual Device: E58T245RHLR	QBS Package Reference: BQ24196RGER	QBS Package Reference: BQ29200DRBR	QBS Package Reference: SN74AXC8T245RHLR	QBS Package Reference: TPS3850G09DRC	QBS Package Reference: TPS62140RGTR	QBS Package Reference: TRS3122ERGER	QBS Package Reference: UCC27282DRC
AC	Autoclave 121C	96 Hours	-	3/231/0	3/231/0	-	3/231/0	3/231/0	3/231/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	-	Pass	Pass	Pass	Pass	Pass
FLAM	Flammability (IEC 695-2-2)	--							3/15/0	
FLAM	Flammability (UL 94V-0)	--							3/15/0	
FLAM	Flammability (UL-1694)	--							3/15/0	
HAST	Biased HAST, 110C/85%RH	26 Hours	-	-	-	-	-	-	-	1/77/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0	-	3/231/0	2/154/0
HTOL	Life Test, 140C	480 Hours	-	-	-	-	-	-	-	3/231/0
HTOL	Life Test, 150C	300 Hours	-	-	-	-	1/77/0	-	1/77/0	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	3/231/0	-	-	3/231/0	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	3/231/0	-	-	-
SD	Surface Mount Solderability	Pb Free							1/22/0	
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	-	3/231/0	-	-	-	-
WBP	Bond Pull	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0

- QBS: Qual By Similarity
- Qual Device E58T245RHLR is qualified at LEVEL1-260CG
- 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

Group 2 Qual Memo:



Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS74801DRCR	QBS Package Reference: 430F2132IRHBR	QBS Package Reference: BQ24196RGER	QBS Package Reference: BQ294504DRVR	QBS Package Reference: TPS51285BRUKR	QBS Package Reference: TRS3122ERGER
AC	Autoclave 121C	96 Hours	-	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	Pass	-	-	-	-	Pass
FLAM	Flammability (IEC 695-2-2)	--	-	-	-	-	-	3/15/0
FLAM	Flammability (UL 94V-0)	--	-	-	-	-	-	3/15/0
FLAM	Flammability (UL-1694)	--	-	-	-	-	-	3/15/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	-	3/231/0
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	1/77/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	-	3/231/0
SD	Surface Mount Solderability	Pb Free	-	-	-	-	-	1/22/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
WBP	Bond Pull	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0	3/228/0

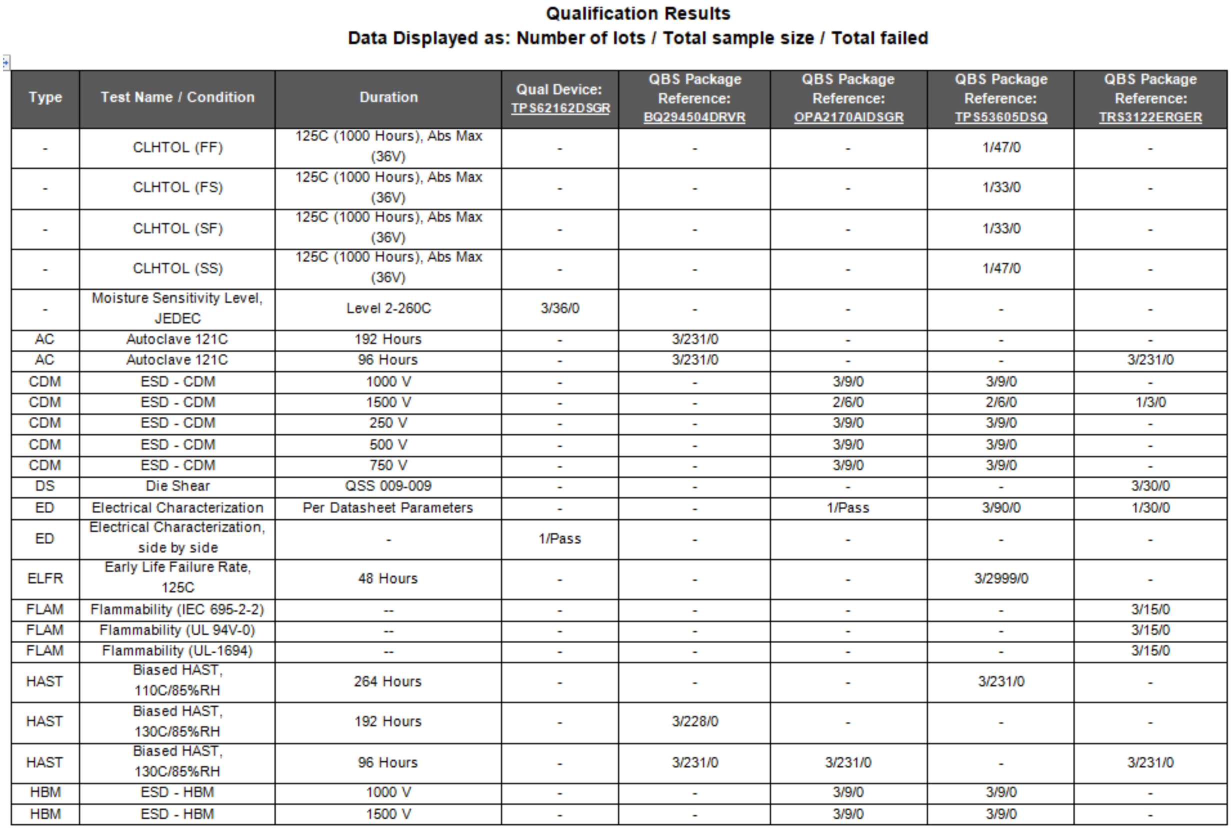
- QBS: Qual By Similarity
- Qual Device TPS74801DRCR is qualified at LEVEL2-260C
- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- The following are equivalent HTOL options based on activation energy of 0.7eV : 125C/1k 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

Group 3 Qual Memo:



Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: TPS62162DSGR	QBS Package Reference: BQ294504DRVR	QBS Package Reference: OPA2170AIDSGR	QBS Package Reference: TPS53605DSQ	QBS Package Reference: TRS3122ERGER
-	CLHTOL (FF)	125C (1000 Hours), Abs Max (36V)	-	-	-	1/47/0	-
-	CLHTOL (FS)	125C (1000 Hours), Abs Max (36V)	-	-	-	1/33/0	-
-	CLHTOL (SF)	125C (1000 Hours), Abs Max (36V)	-	-	-	1/33/0	-
-	CLHTOL (SS)	125C (1000 Hours), Abs Max (36V)	-	-	-	1/47/0	-
-	Moisture Sensitivity Level, JEDEC	Level 2-260C	3/36/0	-	-	-	-
AC	Autoclave 121C	192 Hours	-	3/231/0	-	-	-
AC	Autoclave 121C	96 Hours	-	3/231/0	-	-	3/231/0
CDM	ESD - CDM	1000 V	-	-	3/9/0	3/9/0	-
CDM	ESD - CDM	1500 V	-	-	2/6/0	2/6/0	1/3/0
CDM	ESD - CDM	250 V	-	-	3/9/0	3/9/0	-
CDM	ESD - CDM	500 V	-	-	3/9/0	3/9/0	-
CDM	ESD - CDM	750 V	-	-	3/9/0	3/9/0	-
DS	Die Shear	QSS 009-009	-	-	-	-	3/30/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	1/Pass	3/90/0	1/30/0
ED	Electrical Characterization, side by side	-	1/Pass	-	-	-	-
ELFR	Early Life Failure Rate, 125C	48 Hours	-	-	-	3/2999/0	-
FLAM	Flammability (IEC 695-2-2)	--	-	-	-	-	3/15/0
FLAM	Flammability (UL 94V-0)	--	-	-	-	-	3/15/0
FLAM	Flammability (UL-1694)	--	-	-	-	-	3/15/0
HAST	Biased HAST, 110C/85%RH	264 Hours	-	-	-	3/231/0	-
HAST	Biased HAST, 130C/85%RH	192 Hours	-	3/228/0	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	3/231/0	-	3/231/0
HBM	ESD - HBM	1000 V	-	-	3/9/0	3/9/0	-
HBM	ESD - HBM	1500 V	-	-	3/9/0	3/9/0	-

Type	Test Name / Condition	Duration	Qual Device: TPS62162DSGR	QBS Package Reference: BQ294504DRVR	QBS Package Reference: OPA2170AIDSGR	QBS Package Reference: TPS53605DSQ	QBS Package Reference: TRS3122ERGER
HBM	ESD - HBM	2000 V	-	-	3/9/0	3/9/0	-
HBM	ESD - HBM	2500 V	-	-	-	3/9/0	-
HBM	ESD - HBM	3000 V	-	-	3/9/0	-	-
HBM	ESD - HBM	4000 V	-	-	3/9/0	-	1/3/0
HBM	ESD - HBM	500 V	-	-	3/9/0	2/6/0	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	3/231/0	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	1/77/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	3/231/0	2/90/0	-
LU	Latch-up	(per JESD78)	-	-	-	-	1/6/0
LU	Latch-up	Latchup/125C	-	-	-	3/18/0	-
LU	Latch-up	Latchup/25c	-	-	1/6/0	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	3/Pass	3/Pass	-	3/Pass	3/Pass
MQ	Manufacturability (Assembly)	(per mfg. Site specification) Request crater check	-	-	3/Pass	-	-
MQ	Manufacturability (Testability - TQ)	(per mfg. Site specification)	-	-	-	-	1/Pass
MSL	Thermal Path Integrity	Level 1-260C	-	3/36/0	-	-	-
MSL	Thermal Path Integrity	Level 2-260C	-	-	-	-	3/36/0
MSL	Thermal Path Integrity, JEDEC, L2	Elec-2/25C	-	-	1/12/0	-	-
MSL	Thermal Path Integrity, JEDEC, L2	Level 2	-	-	2/24/0	-	-
PC	PreCon Level 2	Elec/25C	-	-	3/1249/0	11/815/0	-
PC	PreCon Level 2	Level 2-260C	-	-	-	-	3/1005/0
PD	Physical Dimensions	(per mechanical drawing)	-	-	1/5/0	3/90/0	3/30/0
SD	Pb Free Solderability	Pb Free/Solderability	-	-	-	3/15/0	-
SD	Surface Mount Solderability	Pb Free	-	-	-	-	1/22/0
TC	Temperature Cycle, -65/150C	1000 Cycles	-	3/231/0	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	3/231/0
TC	Temperature Cycle, -65/150C	750 Cycles	-	3/231/0	3/231/0	-	-
UHAST	Unbiased HAST 110C/85%RH	264 Hours	-	-	-	3/231/0	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	-	3/231/0	-	-
VM	Visual / Mechanical	(per mfg. Site specification)	-	-	-	-	3/984/0
VM	Visual Quality Reliability Inspection	Post 1000 Cycles Temp Cycle	-	3/6/0	-	-	-
VM	Visual Quality Reliability Inspection	Post 192 Hours HAST	-	3/6/0	-	-	-
VM	Visual Quality Reliability Inspection	Post 96 Hours HAST	-	3/6/0	-	-	-
VM	Visual Quality Reliability Inspection	Post Autoclave	-	-	-	-	3/Pass
VM	Visual Quality Reliability Inspection	Post Temp Cycle	-	-	-	-	3/Pass
WBP	Bond Pull	36 leads, 5 units/lot	-	-	-	3/228/0	-
WBP	Bond Pull	76 Wire, 3 units min	-	-	-	-	3/228/0
WBP	Bond Pull	Wires	3/228/0	3/228/0	-	-	-
WBS	Ball Bond Shear	36 leads, 5 units/lot	-	-	-	3/228/0	-
WBS	Ball Bond Shear	76 balls, 3 units min	-	-	-	-	3/228/0
WBS	Ball Bond Shear	Wires	3/228/0	3/228/0	-	-	-
XRAY	X-ray	(top side only)	-	-	-	-	3/15/0

- QBS: Qual By Similarity
- Qual Device TPS62162DSGR is qualified at LEVEL2-260CG
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- 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

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

Location	**E-Mail**
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Asia Pacific	PCNAsiaContact@list.ti.com
WW PCN Team	PCN_ww_admin_team@list.ti.com

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