PCN Number:	20180622000A	**PCN Date:**	Aug. 22, 2018
Title:	TI Chengdu A/T Automotive qualification		
Customer Contact:	PCN Manager	**Dept:**	Quality Services
Proposed 1st Ship Date:	Dec. 29, 2018	**Estimated Sample Availability:**	Date provided at sample request
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 Incorporated is announcing the qualification of device TPS2546QRTERQ1 at TI Chengdu A/T site. Mold Compound is also changing.

Description	Current	New
Mold Compound	SUMITOMO EME-G770HCD	SUMITOMO EME-G700LTD

Reason for Change:

Continuity of supply.

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

None.

Changes to product identification resulting from this PCN:

Current

Assembly Site	Assy Site Origin (22L)	Assy Site Country Code (23L)	Assembly City
TI CLARK A/T	QAB	PHL	Angeles City

New

Assembly Site	Assy Site Origin (22L)	Assy Site Country Code (23L)	Assembly City
TI Chengdu	**CDA**	**CHN**	**Chengdu**

Sample product shipping label (not actual product label)

Product Affected:

TPS2546QRTERQ1

TI Information
Selective Disclosure

Automotive New Product Qualification Summary

(As per AEC-Q100 and JEDEC Guidelines)

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Chengdu WQFN (3x3) Automotive Qualification Cu bond/G700LTD Grade1 Q100H/Q006

Approved 19-Oct-2016

Updated 10/20/2016-Added QBS Data

Product Attributes

Attributes	Qual Device: TPS2546QRTERQ1	QBS Process Reference: TPS2543QRTE
Operating Temp Range	-40 to +125 C	-40 to +125 C
Automotive Grade Level	Grade 1	Grade 1
Product Function	Power Management	-
Wafer Fab Supplier	RFAB	RFAB
Die Revision	Rev-A/PG1.2	Rev-A (PG1.0)
Assembly Site	CHENGDU A/T	CLARK-AT
Package Type	QFN 3.0 X 3.0 (MM)	TQFN
Package Designator	RTE	RTE
Ball/Lead Count	16	16

- QBS: Qual By Similarity
- Qual Device TPS2546QRTERQ1 is qualified at LEVEL2-260CG

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: TPS2546QRTERQ1	QBS Process Reference: TPS2543QRTE
	Qual ID							**20140715-106611**	**20120330-55281**
Test Group A – Accelerated Environment Stress Tests									
	PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 2-260C	3/960/0	3/765/0
	PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Convection Reflow	Level 3-260C	-	3/200/0
	HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST 130C/85%RH	96 Hours	3/231/0	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-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp. Cycle Bond Pull	500 Cycles	-	1/5/0
	-			-	-	Post Temp. Cycle Bond Shear	Wires	-	1/5/0
	PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle, -40/125C	1000 Cycles	-	1/50/0
	HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 Hours	3/135/0	-
	HTSL	A6	JEDEC JESD22-A103	1	45	High Temp. Storage Bake, 175C	500 Hours	-	3/149/0

	HTSL	A6	JEDEC JESD22-A103	1	45	Post HTSL/Bond Pull	Wires	-	1/5/0
Test Group B – Accelerated Lifetime Simulation Tests									
	HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 150C	408 Hours	3/231/0	3/231/0
	ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 150C	24 Hours	2/2400/0	3/2640/0
	EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	N/A	-
Test Group C – Package Assembly Integrity Tests									
	WBS	C1	AEC Q100-001	1	30	Post HTSL/Bond Shear	Wires	-	1/5/0
	WBS	C1	AEC Q100-001	1	30	Bond Shear (Cpk>1.67)	Wires	3/90/0	-
	WBP	C2	MIL-STD883 Method 2011	1	30	Bond Pull (Cpk>1.67)	Wires	3/90/0	-
	SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Free	3/45/0	2/30/0
	SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb	3/45/0	-
	PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.33 Ppk>1.67)	--	3/90/0	3/90/0
	SBS	C5	AEC Q100-010	3	50	Solder Ball Shear (Cpk>1.67)	Post HTSL/Bump	-	-
	LI	C6	JEDEC JESD22-B105	1	50	Lead Integrity	Leads	-	-
Test Group D – Die Fabrication Reliability Tests									
	EM	D1	JESD61	-	-	Electromigration	-	Completed Per Process Technology Requirements	-
	TDDB	D2	JESD35	-	-	Time Dependant 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	-
Test Group E – Electrical Verification Tests									
	HBM	E2	AEC Q100-002	1	3	ESD - HBM	4000 V	3/9/0	
	CDM	E3	AEC Q100-011	1	3	ESD - CDM	1000 V	3/9/0	
	LU	E4	AEC Q100-004	1	6	Latch Up	25C, 125C	1/6/0	
	ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold test	3/90/0	3/90/0
Additional Tests									
	-			-	-	(Q006) Cross Section, Post Stress	(BHAST 130C) 96 Hours	3/9/0	-
	-			-	-	(Q006) Cross Section, Post Stress	(HTSL Grade 1) 1000 Hours	3/9/0	-
	-			-	-	(Q006) Cross Section, Post Stress	(T/C Grade 1) 500 Cycles	3/9/0	-
	-			-	-	(Q006) Cross Section, Post Stress	(BHAST 130C) 192 Hours	3/9/0	-
	-			-	-	(Q006) Cross Section, Post Stress	(HTSL Grade 1) 2000 Hours	3/9/0	-
	-			-	-	(Q006) Cross Section, Post Stress	(T/C Grade 1) 1000 Cycles	3/9/0	-
	-			-	-	Post HAST AEC-Q006	Ball Bond-1/Shear	3/9/0	-
	-			-	-	Post HAST AEC-Q006	Ball Bond-2/Shear	3/9/0	-

	-			-	-	Post HAST AEC-Q006	Over Ball-1/Bond Pull	3/9/0	-
	-			-	-	Post HAST AEC-Q006	Over Ball-2/Bond Pull	3/9/0	-
	-			-	-	Post HAST AEC-Q006	Over Stitch-1/Bond Pull	3/9/0	-
	-			-	-	Post HAST AEC-Q006	Over Stitch-2/Bond Pull	3/9/0	-
	-			-	-	Post HAST AEC-Q006	CSAM1/Post HAST	3/66/0	-
	-			-	-	Post HAST AEC-Q006	CSAM2/Post HAST	3/66/0	-
	-			-	-	Post HAST AEC-Q006	TSAM1/Post HAST	3/66/0	-
	-			-	-	Post HAST AEC-Q006	TSAM2/Post HAST	3/66/0	-
	-			-	-	Post TC AEC-Q006	Ball Bond-1/Shear	3/9/0	-
	-			-	-	Post TC AEC-Q006	Ball Bond-2/Shear	3/9/0	-
	-			-	-	Post TC AEC-Q006	CSAM1/Post TC	3/66/0	-
	-			-	-	Post TC AEC-Q006	CSAM2/Post TC	3/66/0	-
	-			-	-	Post TC AEC-Q006	Over Ball-1/Bond Pull	3/9/0	-
	-			-	-	Post TC AEC-Q006	Over Ball-2/Bond Pull	3/9/0	-
	-			-	-	Post TC AEC-Q006	Over Stitch-1/Bond Pull	3/9/0	-
	-			-	-	Post TC AEC-Q006	Over Stitch-2/Bond Pull	3/9/0	-
	-			-	-	Post TC AEC-Q006	TSAM1/Post TC	3/66/0	-
	-			-	-	Post TC AEC-Q006	TSAM2/Post TC	3/66/0	-

A1 (PC): Preconditioning:
Performed for THB, Biased HAST, AC, uHAST &TC samples, as applicable.
Junction 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 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