

PCN Number:	20140408000A	PCN Date:	07/11/2014
Title:	Design and Datasheet change: TPS57114QRTERQ1/TPS54388QRTERQ1/TPS57112QRTERQ1		
Customer Contact:	PCN_ww_admin_team@list.ti.com	Phone:	+1(214)480-6037
Dept:	Quality Services		
Proposed 1st Ship Date:	01/11/2015	Estimated Sample Availability:	Date provided at sample request
Change Type:			
<input type="checkbox"/> Assembly Site	<input checked="" type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Site	
<input type="checkbox"/> Assembly Process	<input checked="" type="checkbox"/> Data Sheet	<input type="checkbox"/> Wafer Bump Material	
<input type="checkbox"/> Assembly Materials	<input type="checkbox"/> Part number change	<input type="checkbox"/> Wafer Bump Process	
<input type="checkbox"/> Mechanical Specification	<input type="checkbox"/> Test Site	<input type="checkbox"/> Wafer Fab Site	
<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	<input type="checkbox"/> Wafer Fab Materials	
		<input type="checkbox"/> Wafer Fab Process	
PCN Details			
Description of Change:			
Texas Instruments Incorporated is announcing a change to device design and an update to datasheets.			
Design update includes:			
<ul style="list-style-type: none"> - Input voltage range of EN pin increased to 7V specified in the datasheet. - Input voltage range of RT/CLK pin increased to 7V specified in the datasheet. - NBTI issue of SENSE pin - BOAC spacing widen from 10um to 18um - All metal levels & BOAC must be changed (MTL1/VIA1/MTL2/VIA2/MTL3/POR/METTOP) 			
The product datasheet(s) is also being updated, to update switching frequency.			
The following change history provides further details. These changes may be reviewed at the datasheet links provided:			
Device Family	Change From:	Change To:	
TPS54388-Q1	SLVSAF1B	SLVSAF1C	
TPS57112-Q1	SLVSAL8	SLVSAL8A	
TPS57114-Q1	SLVSAH5B	SLVSAH5C	
The updated datasheet(s) can be accessed by the following link(s):			
http://www.ti.com/product/tps54388-q1			
http://www.ti.com/product/tps57112-q1			
http://www.ti.com/product/tps57114-q1			
Reason for Change:			
Change device design to meet datasheet and to more accurately reflect device datasheet			
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):			
Positive - Device performs per datasheet Electrical specification performance changes as indicated above.			

Changes to product identification resulting from this PCN:

Chip/Die revision (2P) on shipping labels.
Example product shipping label (not actual product label)



Product Affected:

TPS54388QRTERQ1
TPS57112QRTERQ1
TPS57114QRTERQ1

Qualification Data:

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.



TI Information
Selective Disclosure

Automotive New Product Qualification Summary (As per AEC-Q100 and JEDEC Guidelines) TPS57114QRTERDN qual Approved 04/08/2014

Product Attributes

Attributes	Qual Device: TPS57114QRTERDN
Operating Temp Range	-40°C to +125°C
Automotive Grade Level	Grade 1
Wafer Fab Site	MIHO 8
Die Revision	A3
Assembly Site	TIM
Package Type	QFN/SON
Package Designator	RTE
Ball/Lead Count	16

- QBS: Qual By Similarity

- Qual Device TPS57114QRTERDN is qualified at LEVEL3-260C

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

Typ e	#	Test Name / Condition	Duration	Qual Device: TPS57114QRTERDN
Test Group A - Accelerated Environment Stress Test				
PC	A1	Automotive Preconditioning Level 3	260C peak	3/880/0
HAST	A2	Biased HAST, 130C/85%RH	130°C/85% 96 hours	3/240/0
AC	A3	Autoclave 121C	121C / 96 hours	3/240/0
TC	A4	Temperature Cycle, -65/150C	-65°C/+150°C/ 500 cycles	3/240/0
			post-Temp Cycle 500 cycles	3/15/0
PTC	A5	Power Temperature Cycle, -40/125C	-40°C to +125°C for 1000 cycles	1/50/0
HTSL	A6	High Temp Storage Bake 150C	175°C/500 hours	1/50/0
Test Group B - Accelerated Lifetime Simulation Test				
HTOL	B1	Life Test, 125C	125°C/1000 hours	3/240/0
Test Group C - Package Assembly Integrity Tests				
Test Group E - Electrical Verification				
HBM	E2	ESD - HBM	2000 V	1/12/0
CDM	E3	ESD - CDM	750 V	1/3/0
LU	E4	Latch-up	RT and 125C	1/6/0
ED	E5	Auto Electrical Distributions	Cpk>1.67 Room, hot, and cold test	3/90/0
Additional Tests				
MQ		Manufacturability (Auto Assembly)	(per automotive requirements)	All pass
MSL		Automotive L3 Powerpad Moisture Sensitivity	260C peak	3/36/0

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST & TC 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
Grade 4 (or C): -40°C to +70°C

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

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

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

TI Qualification ID: 20130709-89741

Quality and Reliability Data Disclaimer

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customer should provide adequate design and operating safeguards. Quality and reliability data provided by Texas Instruments is intended to be an estimate of product performance based upon history only. It does not imply that any performance levels reflected in such data can be met if the product is operated outside the conditions expressly stated in the latest published data sheet or agreed-to customer specification for a device.

Reliability data shows characteristic failure mechanisms of the specific environmental stress as documented in the industry standards for each stress condition.

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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