

PCN Number:	20231004003.1A			PCN Date:	December 07, 2023								
Title:	Qualification of alternate lead finish material for select devices												
Customer Contact:	Change Management team		Dept:	Quality Services									
Proposed 1st Ship Date:	Jan 3, 2024		Sample Requests accepted until:	Dec 30, 2023*									
*Sample requests received after Dec 30, 2023 will not be supported. (Rev A Devices only)													
Change Type:													
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Material								
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Process								
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Fab Site								
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Material								
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Process								
PCN Details													
Description of Change:													
<p>Revision A is to announce the <u>addition</u> of new devices that were not included on the original PCN notification. These new devices are highlighted and bolded in the device list below. The expected first shipment date for these new devices will be 90 days from this notice for the newly added devices only.</p> <p>This PCN is to inform of an alternate lead finish material set for the list of devices in the product affected sections below.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>What</th> <th>Current</th> <th>Additional</th> </tr> </thead> <tbody> <tr> <td>Lead finish</td> <td>NiPdAu</td> <td>Matte Sn</td> </tr> </tbody> </table> <p>Qualification results are shown below</p>						What	Current	Additional	Lead finish	NiPdAu	Matte Sn		
What	Current	Additional											
Lead finish	NiPdAu	Matte Sn											
Reason for Change:													
Standardization													
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):													
None													
Impact on Environmental Ratings													
<p>Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>RoHS</th> <th>REACH</th> <th>Green Status</th> <th>IEC 62474</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> </tr> </tbody> </table>						RoHS	REACH	Green Status	IEC 62474	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change
RoHS	REACH	Green Status	IEC 62474										
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change										
Changes to product identification resulting from this PCN:													
None													
Product Affected:													
SN611781BRQER	TPS259461LRPWR	TPS259851RQPR	TPS25990ARQPR										



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

Type	Test Name / Condition	Duration	Qual Device: TPS53831RWZR	Qual Device: TPS543620RPYR	Qual Device: TPS62903RPJR	QBS Package Reference: SN62825DMQR	QBS Package Reference: TPS62085RLTR
AC	Autoclave 121C	96 Hours	3/231/0	-	3/231/0	-	3/231/0
CDM	ESD - CDM	1500V	-	-	-	2/6/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	2/154/0	-	-	3/231/0	3/231/0
HBM	ESD - HBM	3000V	-	-	-	1/3/0	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	-	3/2310
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0	3/231/0	3/231/0	3/231/0	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	Pass	Pass
MSL	Thermal Integrity Sequence	Level 2-260C	3/36/0	3/36/0	3/36/0	-	3/36/0
PD	Physical Dimensions	(per mechanical drawing)	3/15/0	3/15/0	3/15/0	-	3/15/0
SD	Solderability	Pb Free	3/66/0	3/66/0	3/66/0	2/44/0	3/66/0
TC	Temperature Cycle, -55/125C	700 Cycles	3/231/0	3/231/0	-	-	3/231/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	3/231/0	3/231/0	-
UHAST	Unbiased HAST 130C/85%RH	96 Hours	-	3/231/0	-	3/231/0	-
VM	Visual Quality Reliability Inspection	Post Temp Cycle	3/6/0	3/6/0	3/6/0	-	3/6/0

- QBS: Qual By Similarity
- Qual Device TPS53831RWZR, TPS543620RPYR, TPS62903RPJR are 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 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 Qualification ID: 20210118-137850

Rev A Device qual memo

Qualification Report

CDAT Hotrod Bare Cu LF + Post mold plating qualification + G700LTD-S(CF)
Approve Date 26-October-2023

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: SN611781BRQER	Qual Device: TPS259461LRPWR
UHA	A3	Unbiased HAST	130C/85%RH	96 Hours	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	3/231/0	3/231/0
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	3/66/0	3/66/0
PD	C4	Physical Dimensions	(per mechanical drawing)	-	3/15/0	3/15/0

- QBS: Qual By Similarity
- Qual Device SN611781BRQER is qualified at MSL2 260C
- Qual Device TPS259461LRPWR is qualified at MSL2 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
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TI Qualification ID: R-CHG-2210-013

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.

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