

PCN Number:	20180423002	PCN Date:	May 9, 2018												
Title:	Qualify New Assembly Material set for Selected Device(s)														
Customer Contact:	PCN Manager	Dept:	Quality Services												
Proposed 1st Ship Date:	Aug. 9, 2018	Estimated Sample Availability:	Date provided at sample request												
Change Type:															
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design												
<input checked="" type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet												
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change												
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site												
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process												
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Site												
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Material												
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Process												
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Site												
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Materials												
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process												
PCN Details															
Description of Change:															
Texas Instruments is pleased to announce the qualification of new assembly material set for devices listed in "Product affected" section below. Devices will remain in current assembly facility and piece part changes as follows:															
<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Material</th> <th>Current</th> <th>Proposed</th> </tr> </thead> <tbody> <tr> <td>Mount Compound</td> <td>4042504, 4206201</td> <td>4208458</td> </tr> <tr> <td>Mold Compound</td> <td>4205443</td> <td>4211649</td> </tr> <tr> <td>Lead finish</td> <td>Standard NiPdAu</td> <td>Roughened NiPdAu (Single side)</td> </tr> </tbody> </table>				Material	Current	Proposed	Mount Compound	4042504, 4206201	4208458	Mold Compound	4205443	4211649	Lead finish	Standard NiPdAu	Roughened NiPdAu (Single side)
Material	Current	Proposed													
Mount Compound	4042504, 4206201	4208458													
Mold Compound	4205443	4211649													
Lead finish	Standard NiPdAu	Roughened NiPdAu (Single side)													
Reason for Change:															
Continuity of supply.															
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):															
None.															
Anticipated impact on Material Declaration															
<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" 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 TI Eco-Info website . There is no impact to the material meeting current regulatory compliance requirements with this PCN change.												
Changes to product identification resulting from this PCN:															
None.															
Product Affected:															
DRV401AIDWP	OPA569AIDWPG4	THS6012CDWPR	TPA6120A2DWP												
DRV401AIDWPG4	OPA569AIDWPR	THS6012IDWP	TPA6120A2DWPG4												
DRV401AIDWPR	SN0301043DWP	THS6012IDWPR	TPA6120A2DWPR												
DRV401AIDWPRG4	SN0301043DWPR	THS6032CDWP	TPA6120A2DWPRG4												
HPA00892DWPR	THS6002CDWP	THS6032IDWP	TPPM0110DWP												
OPA564AIDWD	THS6002CDWPG4	THS6032IDWPR	TPPM0110DWPR												
OPA564AIDWDR	THS6002IDWP	TPA1517DWP	TPPM0111DWP												
OPA564AIDWP	THS6002IDWPR	TPA1517DWPG4													
OPA564AIDWPR	THS6012CDWP	TPA1517DWPR													
OPA569AIDWP	THS6012CDWPG4	TPA1517DWPRG4													

Qualification Report

HSOIC G700LB + FS849 Enterprise Qualification in TITL

Approve Date 11-Apr-2018

Product Attributes

Attributes	Qual Device: <u>DRV401AIDWPR</u>	QBS Package Reference: <u>TPS653853QDCARQ1</u>
Assembly Site	TAI	TAI
Package Family	HSOIC	HTSSOP
Flammability Rating	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	DMO5S	RFAB/DMOS6 (MFF)
Wafer Fab Process	50HPA07	LBC8

- QBS: Qual By Similarity
- Qual Device DRV401AIDWPR is qualified at LEVEL2-260C

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>DRV401AIDWPR</u>	QBS Package Reference: <u>TPS653853QDCARQ1</u>
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0
CDM	ESD - CDM - Q100	1000 V corner pins only	-	1/3/0
CDM	ESD - CDM - Q100	750 V (all pins)	-	1/3/0
ED	Auto Electrical Distributions	Cpk>1.67 Room, hot, and cold test	-	1/90/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	3/2400/0
ELFR	Early Life Failure Rate, 150C	48 Hours	-	1/805/0
HAST	Biased HAST, 130C/85%RH	192 Hours (for information)	-	3/231/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0
HBM	ESD - HBM - Q100	2000 V	-	1/3/0
HTOL	Life Test, 125C	1000 Hours	-	3/231/0
HTSL	High Temp Storage Bake 150C	1000 Hours	-	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0	-
LI	Lead Integrity	Leads	3/135/0	-
LI	Lead Pull	Leads	3/135/0	-
LU	Latch-up	(per JESD78)	-	1/6/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass	-
MQ	Manufacturability (Auto Assembly)	(per automotive requirements)	-	Pass
PD	Physical Dimension	-	3/90/0	-
PTC	Power Temperature Cycle, -40/125C	1000 cycles	-	1/47/0
SD	Surface Mount Solderability	>95% Lead Coverage	3/66/0	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0
TC	Temperature Cycle, -65/150C	1000 Cycles	-	3/231/0
WBP	Post Temp. Cycle Bond Pull	500 Cycles	-	3/15/0
WBP	Bond Pull	Wires	3/228/0	-
WBS	Ball Bond Shear	Wires	3/228/0	-

- 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

THIS INFORMATION RELATING TO QUALITY AND RELIABILITY IS PROVIDED "AS IS." Product information detailed in this report may not accurately reflect TI's current product materials, processes and testing used in the construction of the TI products. Customers are solely responsible to conduct sufficient engineering and additional qualification testing to determine whether a device is suitable for use in their applications. Using TI products outside limits stated in TI's datasheet may void TI's warranty. See TI's Terms of Sale at "<http://www.ti.com/lscds/ti/legal/termssofsale.page>"

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