

<b>PCN Number:</b>	20140926000		<b>PCN Date:</b>	10/01/2014	
<b>Title:</b>	Qualification of 4211649 Mold Compound for Selected PowerPad QFP Device(s)				
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Phone:</b>	+1(214)480-6037	<b>Dept:</b> Quality Services	
<b>Proposed 1<sup>st</sup> Ship Date:</b>	04/01/2015	<b>Estimated Sample Availability:</b>	Date provided at sample request		
<b>Change Type:</b>					
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material
<input checked="" 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
<b>PCN Details</b>					
<b>Description of Change:</b>					
Texas Instruments is pleased to announce the qualification of 4211649 Mold Compound for Selected PowerPad QFP devices listed in "Product affected" section below. Devices will remain in current assembly facility and there will be no other piece part changes.					
	<b>From</b>	<b>To</b>			
Mold Compound	4205443	4211649			
<b>Reason for Change:</b>					
Continuity of supply.					
<b>Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):</b>					
None.					
<b>Changes to product identification resulting from this PCN:</b>					
None.					
<b>Product Affected:</b>					
ADS1258IPHPREP	DAC5687MPZPEP	TSB41BA3BTPFPEP	V62/06669-01XE		
ADS1258MPHPTEP	DP83848MPHPEP	TSB81BA3IPFPEP	V62/07607-01XE		
ADS1278MPAPTEP	DP83848MPHPREP	V62/03608-03XE	V62/09624-01YE		
ADS5292MPFPEP	SM320F28335PTPMEP	V62/03612-01XE	V62/09626-01YE		
ADS5294MPFPEP	TFP401AMPZPEP	V62/04612-01XE	V62/09626-02XE		
ADS5440MPFPEP	TFP410MPAPREP	V62/05613-01XE	V62/09626-02YE		
ADS5444MPFPEP	TFP410MPAPREPG4	V62/05613-02XE	V62/09627-01XE		
ADS5463MPFPEP	THS1408MPHPEP	V62/05619-01XE	V62/10604-01XE		
ADS5500MPAPEP	THS8200IPFPEP	V62/05619-02XE	V62/12600-01EX		
ADS5500MPAPREP	TSB41AB3IPFPEP	V62/06650-01XE	V62/12615-01XE		
DAC5675MPHPEP	TSB41AB3MPFPEP	V62/06653-01XE	V62/12615-01XE-R		
DAC5675MPHPREP	TSB41BA3ATPFPEP	V62/06668-01XE	XSM320F28335PTPS		

## Qualification Report

### G700LB mold compound enterprise qualification for PowerPad QFP packages in TAI and PHI sites

Approved 05/13/2014

#### Product Attributes

Attributes	Qual Device: 6964BDC0PAPG4	Qual Device: ADS58C20IPFP	Qual Device: D610A3BPYP225	Qual Device: DRV593VFP_MSL1	Qual Device: DRV593VFP_MSL2	Qual Device: SLK2511CPZP
Assembly Site	TAI	PHI	TAI	TAI	TAI	TAI
Package Family	HTQFP	HTQFP	HTQFP	HLQFP	HLQFP	HTQFP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Site	MIH08	DMOS5	DMOS 5	HJI	HJI	ANAM
Wafer Fab Process	LBC7	1833C05	1233C035.A6C	LBC3S	LBC3S	25C10
Die Revision	BD	B	A	A	A	C
Passivation	SION	Oxide/Nitride	Oxide/Nitride	Nitride	Nitride	Oxide/Nitride
Package Attributes	Qual Device: 6964BDC0PAPG4	Qual Device: ADS58C20IPFP	Qual Device: D610A3BPYP225	Qual Device: DRV593VFP_MSL1	Qual Device: DRV593VFP_MSL2	Qual Device: SLK2511CPZP
Assembly Site	TAI	PHI	TAI	TAI	TAI	TAI
Package Family	HTQFP	HTQFP	HTQFP	HLQFP	HLQFP	HTQFP
Package Designator	PAP	PFP	PYP	VFP	VFP	PZP
Package Size (mils)	393.7 X 393.7	472.44 X 472.44	1102.36 X 1102.36	275.59 X 275.59	275.59 X 275.59	393.7 X 393.7
Body Thickness (mils)	39.37	39.37	55.12	55.12	55.12	39.37
Pin Count	64	80	208	32	32	100
Lead Frame Material	Cu	Cu Roughened	Cu	Cu	Cu	Cu and Cu Roughened
Lead Finish	NiPdAu	NiPdAu	NiPdAu	NiPdAu	NiPdAu	NiPdAu
Lead Pitch (mils)	19.68	19.68	19.68	31.5	31.5	19.68
Mount Compound	4208458	4208458	4042504	4206201	4206201	4042504
Mold Compound	4211649	4211649	4211649	4211649	4211649	4211649
Bond Wire Composition	Cu	Au	Au	Cu	Cu	Cu, PCC
Bond Wire Diameter (mils)	0.96	0.96	0.96	0.96	0.96	0.96, 1.0
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0

- QBS: Qual By Similarity
- Qual Device qualified at LEVEL4-260CG: D610A3BPYP225
- Qual Devices qualified at LEVEL3-260CG: 6964BDC0PAPG4, ADS58C20IPFP, SLK2511CPZP, TLK2201BIRCP, TUSB9260PVP, TVP70025IPZPR, TAS5707PHP, TVP5145PFP, TAS5631PHDR
- Qual Device qualified at LEVEL2-260CG: DRV593VFP
- Devices contain multiple dies: TAS5707PHP, TVP5145PFP

Attributes	Qual Device: TAS5631PHDR	Qual Device: TLK2201BIRCP	Qual Device: TUSB9260PVP	Qual Device: TVP70025IPZPR	Qual Device: TAS5707PHP	Qual Device: TVP5145PFP
Assembly Site	TAI	TAI	PHI	TAI	PHI	TAI
Package Family	HTQFP	HVQFP	HTQFP	HTQFP	HTQFP	HTQFP
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Site	DMOS5	ANAM	DMOS6	DMOS5	RFAB	MIHO6
					DMOS5	ANAM
Wafer Fab Process	LBC5	25C10X4	C021	1833C05	1833C05	33A12
					LBC5X	33C10.34L
Die Revision	C	F	D	B	-	C
					A0	F
Passivation	Oxide/Nitride	Oxide/Nitride	Oxide/Nitride	Oxide/Nitride	Oxide/Nitride	Nitride
					Oxide/Nitride	Oxide/Nitride
Package Attributes	Qual Device: TAS5631PHDR	Qual Device: TLK2201BIRCP	Qual Device: TUSB9260PVP	Qual Device: TVP70025IPZPR	Qual Device: TAS5707PHP	Qual Device: TVP5145PFP
Assembly Site	TAI	TAI	PHI	TAI	PHI	TAI
Package Family	HTQFP	HVQFP	HTQFP	HTQFP	HTQFP	HTQFP
Package Designator	PHD	RCP	PVP	PZP	PHP	PFP
Package Size (mils)	472.44 X 472.44	393.7 X 393.7	275.59 X 275.59	551.18 X 551.18	275.59 X 275.59	472.44 X 472.44
Body Thickness (mils)	39.37	31.5	39.37	39.37	39.37	39.37
Pin Count	64	64	64	100	48	80
Lead Frame Material	Cu	Cu	Cu Roughened	Cu Roughened	Cu	Cu
Lead Finish	NiPdAu	NiPdAu	NiPdAu	NiPdAu	NiPdAu	NiPdAu
Lead Pitch (mils)	31.5	19.68	15.75	19.68	19.68	19.68
Mount Compound	4206201	4042504	4208458	4042504	4208458	4042504
Mold Compound	4211649	4211649	4211649	4211649	4211649	4211649
Bond Wire Composition	Cu	Cu	Au	Cu	Cu	Au
Bond Wire Diameter (mils)	1.98	0.96	0.8	0.8	0.8; 1.98	0.96
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0

- QBS: Qual By Similarity
- Qual Device qualified at LEVEL4-260CG: D610A3BPYP225
- Qual Devices qualified at LEVEL3-260CG: 6964BDC0PAPG4, ADS58C20IPFP, SLK2511CPZP, TLK2201BIRCP, TUSB9260PVP, TVP70025IPZPR, TAS5707PHP, TVP5145PFP, TAS5631PHDR
- Qual Device qualified at LEVEL2-260CG:DRV593VFP
- Devices contain multiple dies: TAS5707PHP, TVP5145PFP

## Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: 6964BDC0PAPG4	Qual Device: ADS58C20IPFP	Qual Device: D610A3BPYP225	Qual Device: DRV593VFP_MSL1	Qual Device: DRV593VFP_MSL2	Qual Device: SLK2511CPZP
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-	-
THB	Biased Temperature and Humidity, 85C/85%RH	1000 Hours	-	-	1/71/0	-	-	-
AC	Autoclave 121C	96 Hours	3/231/0	6/600/0	3/231/0	1/77/0	2/154/0	12/924/0
TC	Temperature Cycle, -65/+150C	500 Cycles	3/231/0	6/600/0	3/231/0	1/77/0	2/154/0	12/924/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	6/600/0	3/231/0	1/77/0	2/154/0	12/924/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	-	-	-	-
MQ	Manufacturability	(per mfg Site specification)	Pass	Pass	Pass	-	Pass	Pass

Type	Test Name / Condition	Duration	Qual Device: TAS5631PHDR	Qual Device: TLK2201BIRCP	Qual Device: TUSB9260PVP	Qual Device: TVP70025IPZPR	Qual Device: TAS5707PHP	Qual Device: TVP5145PFP
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	3/231/0	-
THB	Biased Temperature and Humidity, 85C/85%RH	1000 Hours	-	-	-	-	-	-
AC	Autoclave 121C	96 Hours	-	3/231/0	3/300/0	3/231/0	3/300/0	3/231/0
TC	Temperature Cycle, -65/+150C	500 Cycles	-	3/243/0	3/300/0	3/240/0	3/300/0	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	-	3/231/0	3/245/0	-	-	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	-	Pass	-	-	-
MQ	Manufacturability	(per mfg Site specification)	Pass	Pass	Pass	Pass	Pass	Pass

- 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: 20120920-67421

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	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
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