

PCN Number:	20160606003		PCN Date:	06/21/2016																
Title:	Qualify New Assembly Material set for Selected Device(s)																			
Customer Contact:	PCN Manager	Dept:	Quality Services																	
Proposed 1st Ship Date:	09/21/2016	Estimated Sample Availability:	Date provided at sample request																	
Change Type:																				
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site															
<input checked="" 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																	
PCN Details																				
Description of Change:																				
<p>Texas Instruments is pleased to announce the qualification of new assembly material for devices listed in "Product affected" section below. Devices will remain in current assembly facility and piece part changes as follows:</p> <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>Wire (mils)</td> <td>0.80, 0.96, 1.15mils Au</td> <td>0.96mils Cu</td> </tr> <tr> <td>Lead frame thickness</td> <td>10 mils</td> <td>10mils, 6mils</td> </tr> <tr> <td>Mount compound</td> <td>4042500</td> <td>4147858</td> </tr> <tr> <td>Mold compound</td> <td>4205694</td> <td>4211880</td> </tr> </tbody> </table>						Material	Current	Proposed	Wire (mils)	0.80, 0.96, 1.15mils Au	0.96mils Cu	Lead frame thickness	10 mils	10mils, 6mils	Mount compound	4042500	4147858	Mold compound	4205694	4211880
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Mount compound	4042500	4147858																		
Mold compound	4205694	4211880																		
Reason for Change:																				
<p>Continuity of supply.</p> <p>1) To align with world technology trends and use assembly materials with enhanced mechanical and electrical properties</p> <p>2) Maximize flexibility within our Assembly/Test production sites.</p>																				
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 website .																	
Changes to product identification resulting from this PCN:																				
None.																				
Product Affected:																				
Please see page two of this document for your list of PCN affected devices.																				

Qualification Report

**Universal BOM Mold 4211880 and Die Attach 4147858
for SOIC DW Packages in TITL and MLA
Approve Date 12-May-2016**

Product Attributes

Attributes	Qual Device: ADS1213U	Qual Device: ADS820U	Qual Device: ADS8504IBDW	Qual Device: MSP430F123IDWR	Qual Device: SN65LBC170DW
Assembly Site	TAI	TAI	TAI	TAI	MLA
Package Family	SOIC	SOIC	SOIC	SOIC	SOIC
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	OKI	TSMC WF2	DAMOS5	TSMC	DFAB
Wafer Fab Process	OKIDALSATFAB_BICMOS	0.60UM-TSMC	50HPA07	0.35UM-TSMC	LBC3S

Attributes	Qual Device: SN65LBC170DW_SSTN	Qual Device: SN74LVC541ADW	Qual Device: SN74LVC541ADW_SSTN	QBS Package Reference: TL494IDR	QBS Package Reference: ULQ2003AQDRQ1
Assembly Site	MLA	MLA	MLA	FMX	FMX
Package Family	SOIC	SOIC	SOIC	SOIC	SOIC
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V0	UL 94 V-0
Wafer Fab Supplier	DFAB	FFAB	FFAB	SFAB	SFAB
Wafer Fab Process	LBC3S	ASLC10	ASLC10	J11	J11-SLM

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260C: SN65LBC170DW, SN74LVC541ADW, MSP430F123IDWR, TL494IDR, ULQ200AQDRQ1
- Qual Devices qualified at LEVEL2-260C: ADS1213U, ADS8504IBDW, ADS820U

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: ADS1213U	Qual Device: ADS820U	Qual Device: ADS8504IBDW	Qual Device: MSP430F123IDWR	Qual Device: SN65LBC170DW
AC	Autoclave 121C	96 Hours	1/77/0	-	1/77/0	1/77/0	1/77/0
ED	Electrical Characterization, side by side	Per datasheet parameters	Pass	Pass	Pass	-	Pass
HAST	Biased HAST, 130C/85%RH	192 Hours	-	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	1/77/0	-	1/77/0	1/77/0	1/77/0
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	Pass	Pass
TC	Temperature Cycle, -65/150C	500 Cycles	1/77/0	3/231/0	1/77/0	1/77/0	1/77/0

Type	Test Name / Condition	Duration	Qual Device: SN65LBC170 DW_ SSTN	Qual Device: SN74LVC541A DW	Qual Device: SN74LVC541A DW_ SSTN	QBS Package Reference: TL494IDR	QBS Package Reference: ULQ2003AQDR Q1_STDLF
AC	Autoclave 121C	96 Hours	3/231/0	3/231/0	3/231/0	-	3/231/0
ED	Electrical Characterization, side by side	Per datasheet parameters	Pass	Pass	Pass	-	-
HAST	Biased HAST, 130C/85%RH	192 Hours	-	-	-	3/231/0	3/217/0
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	3/231/0	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0	3/231/0	3/231/0	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	3/231/0	-	3/231/0

- 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

Qualification Report

SOIC-DW 6 mil thick, 2X12 HD, TIM Leadframe Qualification Approve Date 12-May-2016

Product Attributes

Attributes	Qual Device: SN65LBC170DW_SSROUGH	Qual Device: SN65LBC170DW_STD_AU	Qual Device: SN74LVC541ADW_SSROUGH	Qual Device: SN74LVC541ADW_STD_AU
Assembly Site	TIM	TIM	TIM	TIM
Package Family	SOIC	SOIC	SOIC	SOIC
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	DFAB	DFAB	FFAB	FFAB
Wafer Fab Process	LBC3S	LBC3S	A3C10TLM	A3C10TLM

- QBS: Qual By Similarity

- Qual Devices qualified at LEVEL1-260CG: SN65LBC170DW, SN74LVC541ADW

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: SN65LBC170DW_ SSROUGH	Qual Device: SN65LBC170DW_ STD_AU	Qual Device: SN74LVC541ADW_ SSROUGH	Qual Device: SN74LVC541ADW_ STD_AU
AC	Autoclave 121C	96 Hours	3/231/0	1/77/0	3/231/0	3/231/0
HTSL	High Temp Storage Bake 170C	420 Hours	3/231/0	1/77/0	3/231/0	3/231/0
LI	Lead Fatigue	Leads	3/66/0	-	-	-
LI	Lead Pull	Leads	3/66/0	-	-	-
MQ	Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	Pass
PD	Physical Dimensions	(per mechanical drawing)	3/15/0	-	-	-
SD	Solderability	8 Hours Steam Age, Pb free	3/66/0	-	-	-
TC	Temperature Cycle, - 65/150C	500 Cycles	3/231/0	1/77/0	3/231/0	3/231/0

- 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

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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
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