



12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20150624002
Qualify New Assembly Material set for Selected Device(s)
Change Notification / Sample Request

Date: 7/6/2015
To: MOUSER PCN

Dear Customer:

This is an announcement of change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

Texas Instruments requires acknowledgement of receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. The proposed first ship date is indicated on page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

If samples or additional data are required, requests must be received within 30 days of acknowledgement as samples are not built ahead of the change. You may contact the PCN Manager or your local Field Sales Representative to acknowledge this PCN and request samples or additional data.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice, contact your local Field Sales Representative or the PCN Manager (PCN_ww_admin_team@list.ti.com).

Sincerely,

PCN Team
SC Business Services

20150624002
Final Change Notification
Attachments

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
LM211QDG4	null
LM211QDR	null
LM211QDRG4	null
LM211QDRG4Q1	null
LM211QDRQ1	null
LM239AQDRG4Q1	null
LM239AQDRQ1	null
LM2901AVQDRG4Q1	null
LM2901AVQDRQ1	null
LM2901QDRQ1	null
LM2901VQDR	null
LM2901VQDRG4	null
LM2901VQDRG4Q1	null
LM2902KAVQDR	null
LM2902KAVQDRG4	null
LM2902KAVQDRQ1	null
LM2902KVQDRQ1	null
LM2902QDRG4Q1	null
LM2903AVQDR	null
LM2903AVQDRG4	null
LM2903AVQDRG4Q1	null
LM2903AVQDRQ1	null
LM2903QDRG4Q1	null
LM2903QDRQ1	null
LM2903VQDR	null
LM2903VQDRQ1	null
LM2904AVQDR	null
LM2904AVQDRG4	null
LM2904AVQDRG4Q1	null
LM2904AVQDRQ1	null
LM2904QDRG4Q1	null
LM2904QDRQ1	null
LM2904VQDR	null
LM2904VQDRG4Q1	null
LM2904VQDRQ1	null
LP2901IDRG4Q1	null
LP2901IDRQ1	null
MC33063AQDRQ1	null
RC4580QDRQ1	null
TL1431QDR	null
TL1431QDRQ1	null
TPS76801QPWPRQ1	null
TPS76818QPWPRQ1	null
TPS76833QPWPRQ1	null
TPS76850QPWPRQ1	null
TPS77601QPWPRQ1	null
ULQ2003AD	null
ULQ2003ADR	null
ULQ2003AQDRQ1	null
ULQ2003ATDQ1	null
ULQ2003ATDRG4Q1	null

ULQ2003ATDRQ1
ULQ2004AD
ULQ2004ADR
ULQ2004ATDRQ1

null
null
null
null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20150624002		PCN Date:	07/06/2015																																		
Title:	Qualify New Assembly Material set for Selected Device(s)																																					
Customer Contact:	PCN Manager		Dept:	Quality Services																																		
Proposed 1st Ship Date:	01/06/2016		Estimated Sample Availability:	Date provided at sample request																																		
Change Type:																																						
☐	Assembly Site	☐	Design	☐	Wafer Bump Site																																	
☒	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material																																	
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process																																	
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Site																																	
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials																																	
				☐	Wafer Fab Process																																	
PCN Details																																						
Description of Change:																																						
Texas Instruments is pleased to announce the qualification of new assembly material set to add Cu as an additional bond wire option for devices listed in "Product affected" section below. Devices will remain in current assembly facility and piece part changes as follows: Group 1 Devices: <table border="1"> <thead> <tr> <th>Material</th> <th>Current</th> <th>Additional Material</th> </tr> </thead> <tbody> <tr> <td>Wire (mil)</td> <td>0.96 Au</td> <td>1.0 Cu</td> </tr> <tr> <td>Mount compound</td> <td>4042504</td> <td>4208458</td> </tr> <tr> <td>Mold compound</td> <td>4205443</td> <td>4211649</td> </tr> </tbody> </table> Group 2 Devices: <table border="1"> <thead> <tr> <th>Material</th> <th>Current</th> <th>Additional Material</th> </tr> </thead> <tbody> <tr> <td>Wire (mil)</td> <td>0.96 Au</td> <td>1.0 Cu</td> </tr> <tr> <td>Mold compound</td> <td>4205443</td> <td>4211649</td> </tr> </tbody> </table> Group 3 Devices: <table border="1"> <thead> <tr> <th>Material</th> <th>Current</th> <th>Additional Material</th> </tr> </thead> <tbody> <tr> <td>Wire (mil)</td> <td>0.8, 0.96, 1.15 Au</td> <td>1.0 Cu</td> </tr> <tr> <td>Mold compound</td> <td>4205694</td> <td>4211880</td> </tr> <tr> <td>Leadframe surface</td> <td>Standard NiPdAu</td> <td>Roughened NiPdAu</td> </tr> </tbody> </table>						Material	Current	Additional Material	Wire (mil)	0.96 Au	1.0 Cu	Mount compound	4042504	4208458	Mold compound	4205443	4211649	Material	Current	Additional Material	Wire (mil)	0.96 Au	1.0 Cu	Mold compound	4205443	4211649	Material	Current	Additional Material	Wire (mil)	0.8, 0.96, 1.15 Au	1.0 Cu	Mold compound	4205694	4211880	Leadframe surface	Standard NiPdAu	Roughened NiPdAu
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Reason for Change:																																						
Continuity of supply. 1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties 2) Maximize flexibility within our Assembly/Test production sites. 3) Cu is easier to obtain and stock																																						
Anticipated impact on Material Declaration																																						
☐	No Impact to the Material Declaration	☒	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.																																			

Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):

None.

Changes to product identification resulting from this PCN:

None.

Product Affected Group 1 Device:

MLA00346PWPR	TPS76801QPWPRG4CT	TPS77601QPWPRG4CT
TLC084QPWPRQ1	TPS76801QPWPRMO	

Product Affected Group 2 Device:

MLA00418PWPR	TPS76801QPWPRQ1	TPS76850QPWPRQ1	TPS77601QPWPRG4Q1
TPS76733QPWPRQ1	TPS76818QPWPRQ1	TPS77501QPWPRQ1	TPS77601QPWPRQ1
TPS76750QPWPRQ1	TPS76825QPWPRQ1	TPS77533QPWPRCT	TPS77618QPWPRQ1
TPS76801QPWPRG4Q1	TPS76833QPWPRQ1	TPS77533QPWPRQ1	TPS77633QPWPRQ1

Product Affected Group 3 Device:

LM111QDRG4CT	LM2902KAVQDR	LM2904DRCT	SN103325DRG4
LM111QDRG4DL	LM2902KAVQDRCT	LM2904DRG4CT	SN103442DR
LM124AQDRDL	LM2902KAVQDRDL	LM2904QDRDL	SN103442DRG4
LM124AQDRG4DL	LM2902KAVQDRG4	LM2904QDRG4-M	SN103660DRG4
LM124DRG4	LM2902KAVQDRG4CT	LM2904QDRG4DL	SN104549DRG4
LM124QDRG4RB	LM2902KAVQDRG4DL	LM2904QDRG4Q1	SN104569DR
LM158AQDRDL	LM2902KAVQDRG4HL	LM2904QDRG4SV	SN104569DRG4
LM158AQDRG4DL	LM2902KAVQDRG4RB	LM2904QDRQ1	SN104611DR
LM158MDRG4TY	LM2902KAVQDRHL	LM2904QDRSV	SN104611DRG4
LM193MDRG4TY	LM2902KAVQDRQ1	LM2904VQDR	SN104613DR
LM211QD	LM2902KAVQDRRB	LM2904VQDRCT2	SN104613DRG4
LM211QDG4	LM2902KVQDR	LM2904VQDRG4	SN104630DR
LM211QDR	LM2902KVQDRDL2	LM2904VQDRG4HL	SN104630DRG4
LM211QDRG4	LM2902KVQDRG4	LM2904VQDRG4Q1	SN104633DR
LM211QDRG4HT	LM2902KVQDRQ1	LM2904VQDRHL	SN104633DRG4
LM211QDRG4Q1	LM2902KVQDRVS	LM2904VQDRQ1	SN301152DR
LM211QDRG4RB	LM2902QDRG4-M	LM324IDRG4GT	SN301152DRG4
LM211QDRG4VS	LM2902QDRG4Q1	LM324QDRG4SV	SN75469DRG4SV
LM211QDRQ1	LM2902QDRG4SV	LM339IDRG4MO	SN75469DRSV
LM211QDRRB	LM2902QDRG4VS	LM339QDRG4MO	TL1431QDR
LM218IDRG4Q1	LM2902QDRQ1	LM358MDRG4VS	TL1431QDRG4Q1
LM239AQDRG4Q1	LM2902QDRSV	LP2901IDRG4Q1	TL1431QDRG4VS
LM239AQDRQ1	LM2902QDRVS	LP2901IDRQ1	TL1431QDRQ1
LM285IDRMO-1-2	LM2902VQDRQ1	LP2901TDRG4MO	TL7705AIDRG4CT
LM285QDR-1-2-M	LM2903AVQDR	MC33063AQDRQ1	ULN2003IDRG4SV
LM285QDRG4Q1-1-2	LM2903AVQDRDL	MC34063AQDRG4Q1	ULN2003TDRG4SV
LM285QDRQ1-1-2	LM2903AVQDRG4	MC34063AQDRQ1	ULQ2003AD
LM2901AVQDR	LM2903AVQDRG4Q1	MLA00014DR	ULQ2003ADG4
LM2901AVQDRCM	LM2903AVQDRQ1	MLA00103DR	ULQ2003ADR

LM2901AVQDRDL	LM2903DRCT	MLA00171DR	ULQ2003ADRG4
LM2901AVQDRG4	LM2903DRG4CT	MLA00269DR	ULQ2003AQDRQ1
LM2901AVQDRG4Q1	LM2903DRG4SV	MLA00282DR	ULQ2003ATDG4Q1
LM2901AVQDRQ1	LM2903DRSV	MLA00301DR	ULQ2003ATDQ1
LM2901DRCT	LM2903IDRDL	MLA00310DR	ULQ2003ATDRCT
LM2901DRG4CT	LM2903IDRG4DL	MLA00314DR	ULQ2003ATDRG4AS
LM2901QDG4Q1	LM2903IDRG4MO	MLA00332DR	ULQ2003ATDRG4CT
LM2901QDRDL	LM2903QDRG4CM	MLA00338DR	ULQ2003ATDRG4Q1
LM2901QDRG4DL	LM2903QDRG4Q1	MLA00338DRG4	ULQ2003ATDRG4YZ
LM2901QDRG4HL	LM2903QDRMO	MLA00339DR	ULQ2003ATDRQ1
LM2901QDRG4Q1	LM2903QDRQ1	MLA00339DRG4	ULQ2003ATDRRB
LM2901QDRG4SV	LM2903VQDR	MLA00356DR	ULQ2003ATDRYZ
LM2901QDRHL	LM2903VQDRG4	MLA00407DR	ULQ2003IDRG4SV
LM2901QDRQ1	LM2903VQDRG4Q1	MPL2670DR	ULQ2003TDRG4SV
LM2901QDRSV	LM2903VQDRQ1	RC4580QDRQ1	ULQ2004AD
LM2901VQDR	LM2904AVQDR	SA555IDRG4VS	ULQ2004ADG4
LM2901VQDRG4	LM2904AVQDRG4	SN101967DR	ULQ2004ADR
LM2901VQDRG4Q1	LM2904AVQDRG4Q1	SN101967DRG4	ULQ2004ADRG4
LM2901VQDRQ1	LM2904AVQDRG4RB	SN102157DR	ULQ2004ATDRG4Q1
LM2902DRCT	LM2904AVQDRG4VS	SN102157DRG4	ULQ2004ATDRQ1
LM2902DRG4CT	LM2904AVQDRQ1	SN102755DR	
LM2902IDRG4SV	LM2904AVQDRRB	SN102755DRG4	
LM2902IDRSV	LM2904AVQDRVS	SN103325DR	

Qualification Report: Group 1 & 2 Devices

Automotive New Product Qualification Summary (As per AEC-Q100 and JEDEC Guidelines)

TITL: 1.0mil PCC Wire Qualification for Analog Automotive Device – TPS76801QPWPRG4Q1

Product Attributes

Attributes	Qual Device: TPS76801QPWPRG4Q1
Operating Temp Range	-40°C to +125°C
Automotive Grade Level	Grade 1
Wafer Fab Supplier	DFAB
Die Revision	A
Assembly Site	TAI / TITL
Package Type	TSSOP
Package Designator	PWP
Ball/Lead Count	20

- QBS: Qual By Similarity

- Qual Device TPS76801QPWPRG4Q1 is qualified at LEVEL3-260C

Qualification Results

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

Type	#	Test Name / Condition	Duration	Qual Device: TPS76801QPWPRG4Q1
Test Group A - Accelerated Environment Stress Test				
PC	A1	Auto Preconditioning Level 3	Level 3-260C	3/1095/0
HAST	A2	Biased HAST, 130C/85%RH	96 Hours	3/231/0
AC	A3	Autoclave 121C	192 Hours	3/231/0
TC-BP	A4	Post Temp. Cycle Bond Pull	Wires	1/5/0
TC	A4	Temperature Cycle, -65/150C	1000 Cycles	3/231/0
HTSL	A6	High Temp Storage Bake 175C	500 Hours	3/231/0
Test Group C - Package Assembly Integrity Tests				
WBS	C1	Bond Shear (Ppk > 1.67 and Cpk > 1.33)	Wires	3/240/0
WBP	C2	Bond Pull (Ppk > 1.67 and Cpk > 1.33)	Wires	3/240/0
Test Group E - Electrical Verification				
ED	E5	Electrical Distributions Cpk > 1.67	--	3/90/0

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

Qualification Report: Group 3 Device

Automotive New Product Qualification Summary (As per AEC-Q100 and JEDEC Guidelines)

Automotive SOIC PCC Wire Al pad Qualification JI-1 Technology at TMEX – ULQ2003AQDRQ1

Product Attributes

Attributes	Qual Device: ULQ2003AQDRQ1 (Roughened LF)	Qual Device: ULQ2003AQDRQ1 (Standard LF)
Automotive Grade Level	Grade 1	Grade 1
Operating Temp Range	-40°C to +125°C	-40°C to +125°C
Die Revision	C	C
Assembly Site	FMX	FMX
Package Type	SOIC	SOIC
Package Designator	D	D
Ball/Lead Count	16	16

- QBS: Qual By Similarity

- Qual Devices qualified at LEVEL1-260C: ULQ2003AQDRQ1_RLF, ULQ2003AQDRQ1_STDLF

Qualification Results (ULQ2003AQDRQ1_ Roughened LF)

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

Type	#	Test Spec	Min Lot Qty	SS/ Lot	Test Name / Condition	Duration	Qual Device: ULQ2003AQDRQ1 (Roughened LF)
Test Group A – Accelerated Environment Stress Tests							
PC	A1	JEDEC J-STD-020 JESD22-A113	3	0	Automotive Preconditioning	Level 1-260C	3/735/0
HAST	A2	JEDEC JESD22-A110	3	12	Biased HAST, 130C/85%RH	96 Hours	(Refer to table below)
HAST	A2	JEDEC JESD22-A110	3	12	Post CSAM/TSAM, Biased HAST, 130C/85%RH	96 Hours	(Refer to table below)
AC	A3	JEDEC JESD22-A102	3	12	Autoclave 121C	96 Hours	3/231/0
AC	A3	JEDEC JESD22-A102	3	12	Post CSAM/TSAM, Autoclave 121C	96 Hours	3/36/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	10	Temperature Cycle, -65/150C	500 Cycles	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	10	Post CSAM/TSAM, Temperature Cycle, -65/150C	500 Cycles	3/36/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	10	Post VQR, Temperature Cycle, -65/150C	500 Cycle	3/6/0
TC-BP	A4	MIL-STD883 Method 2011			Post Temp. Cycle Bond Pull	Wires	1/30/0
PTC	A5	JEDEC JESD22-A105	1		Power Temperature Cycle	1000 Cycles	N/A
HTSL	A6	JEDEC JESD22-A103	1	22	High Temp. Storage Bake, 150C	1000 Hours	1/45/0
HTSL	A6	JEDEC JESD22-A103	1	22	Post CSAM/TSAM, High Temp. Storage Bake, 150C	1000 Hours	1/22/0

Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 150C	408 Hours	(Refer to table below)
EDR	B3	AEC Q100-005	3		NVM Endurance, Data Retention, and Operational Life	-	N/A
Test Group C – Package Assembly Integrity Tests							
WBS	C1	AEC Q100-001			Bond Shear (Cpk>1.67)	Wires	3/90/0
WBP	C2	MIL-STD883 Method 2011			Bond Pull (Cpk>1.67)	Wires	3/90/0
SD	C3	JEDEC JESD22-B102	1	30	Solderability	Pb Free	1/15/0
SD	C3	JEDEC JESD22-B102	1	30	Surface Mount Solderability	Pb	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	--	3/30/0
Test Group E – Electrical Verification Tests							
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67	(Refer to table below)

Qualification Results (ULQ2003AQDRQ1_ Standard LF)

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

Type	#	Test Spec	Min Lot Qty	SS/ Lot	Test Name / Condition	Duration	Qual Device: ULQ2003AQDRQ1 (Standard LF)
Test Group A – Accelerated Environment Stress Tests							
PC	A1	JEDEC J-STD-020 JESD22-A113	3	0	Automotive Preconditioning	Level 1-260C	3/735/0
HAST	A2	JEDEC JESD22-A110	3	12	Biased HAST, 130C/85%RH	96 Hours	3/231/0
HAST	A2	JEDEC JESD22-A110	3	12	Post CSAM/TSAM, Biased HAST, 130C/85%RH	96 Hours	1/12/0
AC	A3	JEDEC JESD22-A102	3	12	Autoclave 121C	96 Hours	3/231/0
AC	A3	JEDEC JESD22-A102	3	12	Post CSAM/TSAM, Autoclave 121C	96 Hours	3/36/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	10	Temperature Cycle, -65/150C	500 Cycles	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	10	Post CSAM/TSAM, Temperature Cycle, -65/150C	500 Cycles	3/36/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	10	Post VQR, Temperature Cycle, -65/150C	500 Cycle	3/6/0
TC-BP	A4	MIL-STD883 Method 2011			Post Temp. Cycle Bond Pull	Wires	1/30/0
PTC	A5	JEDEC JESD22-A105	1		Power Temperature Cycle	1000 Cycles	N/A
HTSL	A6	JEDEC JESD22-A103	1	22	High Temp. Storage Bake, 150C	1000 Hours	1/45/0
HTSL	A6	JEDEC JESD22-A103	1	22	Post CSAM/TSAM, High Temp. Storage Bake, 150C	1000 Hours	1/22/0
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 150C	408 Hours	3/231/0

EDR	B3	AEC Q100-005	3		NVM Endurance, Data Retention, and Operational Life	-	N/A
Test Group C – Package Assembly Integrity Tests							
WBS	C1	AEC Q100-001			Bond Shear (Cpk>1.67)	Wires	3/90/0
WBP	C2	MIL-STD883 Method 2011			Bond Pull (Cpk>1.67)	Wires	3/90/0
SD	C3	JEDEC JESD22-B102	1	30	Solderability	Pb Free	1/15/0
SD	C3	JEDEC JESD22-B102	1	30	Surface Mount Solderability	Pb	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	--	3/30/0
Test Group E – Electrical Verification Tests							
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67	3/90/0

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST & TC samples, as applicable.

Junction 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

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

Room/Hot/Cold : HTOL, ED

Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU

Room : AC/uHAST

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
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com