PCN Number:	20131209001	**PCN Date:**	01/17/2014
Title:	TLE4275QKTTRQ1 and TL720M05QKTTRQ1 copper wire - CMS C1308075		

Customer Contact:	PCN_ww_admin_team@list.ti.com	**Phone:**	+1(214)480-6037	**Dept:**	Quality Services

Proposed 1st Ship Date:	06/17/2014	**Estimated Sample Availability:**	Upon request

Change Type:

☐	Assembly Site	☐	Assembly Process	☒	Assembly Materials
☐	Design	☐	Electrical Specification	☐	Design
☐	Test Site	☐	Packing/Shipping/Labeling	☐	Test Site
☐	Wafer Bump Site	☐	Wafer Bump Material	☐	Wafer Bump Site
☐	Wafer Fab Site	☐	Wafer Fab Materials	☐	Wafer Fab Site
		☐	Part number change		

PCN Details

Description of Change:

Change devices from gold to copper bond wire.

Reason for Change:

Cost containment. The gold market continually increases the cost of gold bond wire.

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

No anticipated impact.

Changes to product identification resulting from this PCN:

None

Product Affected:

TLE4275QKTTRQ1
TL720M05QKTTRQ1

Qualification Data:

Automotive New Product Qualification Plan/Summary

(As per AEC-Q100 and JEDEC Guidelines)

Supplier Name:	Texas Instruments Inc.	**Supplier Wafer Fabrication Site:**	TI Sherman fab - SFAb
Supplier Code:		**Supplier Die Rev**	D
Supplier Part Number:	TLE4275QKTTRQ1	**Supplier Assembly/Test Site:**	NFME
Customer Name:		**Supplier Package/Pin:**	KTT/5
Customer Part Number:	TLE4275QKTTRQ1	**Pb-Free Lead Frame (Y/N):**	Y
Device Description:	LDO	**"Green" Mold Compound (Y/N):**	Y
MSL Rating:	LEVEL3	**Operating Temp Range:**	-40 to 125C
Peak Solder Reflow Temp:	245C	**Automotive Grade Level (1):**	3 (Q)
Prepared by Signature:	Mandy Xu	**Date:**	11/25/2013

Test	#	Reference	Test Conditions	Min Lots (2)	SS / lot (2)	Min Total (2)	Results Lot/pass /fail	Comments: (N/A =Not Applicable)	Exceptions to AEC - Q100
TEST GROUP A – ACCELERATED ENVIRONMENT STRESS TESTS (3)									
PC	A1	JESD22-113 J-STD-020	Preconditioning: SMD only; Moisture Preconditioning for THB/HAST, AC/UHST, TC, HTSL, and HTOL	Performed on ALL SMD devices prior to THB/HAST, AC/UHST, TC and PTC					
THB or HAST	A2	JESD22-A101 JESD22-A110	Temperature Humidity Bias: 85°C/85%/1000 hours Highly Accelerated Stress Test: 130°C/85%/96 hours or 110°C/85%/264 hours	3	77	231	3/231/0		
AC or UHST	A3	JESD22-A102 JESD22-A118	Autoclave: 121°C/15 psig/96 hours Unbiased Highly Accelerated Stress Test: 130°C/85%/96 hours or 110°C/85%/264 hours	3	77	231	3/231/0		
TC	A4	JESD22-A104	Temperature Cycle: -65°C/+150°C/500 cycles	3	77	231	3/231/0		
PTC	A5	JESD22-A105	Power Temperature Cycling: -40°C/+125°C/1000 cycles	1	45	45	1/45/0	QBS to TLE4275KTTRQ1 (Au wire version)	
HTSL	A6	JESD22-A103	High Temperature Storage Life: 150°C/1000 hours or 175°C/500 hours	1	45	45	1/45/0		
TEST GROUP B – ACCELERATED LIFETIME SIMULATION TESTS (3)									
HTOL	B1	JESD22-A108	High Temp Operating Life: 125°C/1000 hours 150°C/408 hours	3	77	231	3/231/0	QBS to TLE4275KTTRQ1 (Au wire version)	
ELFR	B2	AEC-Q100-008	Early Life Failure Rate:	3	800	2400	3/800/2400	QBS to TL1431CDRG4	
TEST GROUP C – PACKAGE ASSEMBLY INTEGRITY TESTS (3)									
WBS	C1	AEC-Q100-001	Wire Bond Shear Test: (Cpk > 1.67)	30 bonds	5 parts min.	30 bonds	1/30/0		
WBP	C2	Mil-Std-883 Method 2011	Wire Bond Pull: Each bonder used (Cpk > 1.67)	30 bonds	5 parts min.	30 bonds	1/30/0		
SD	C3	JESD22-B102	Solderability: (>95% coverage) 8 hr steam age (1 hour for Au-plated leads)	1	22	22	1/22/0		
PD	C4	JESD22-B100 JESD22-B108	Physical Dimensions: (Cpk > 1.67)	3	10	30	3/10/30		
SBS	C5	AEC-Q100-010	Solder Ball Shear: (Cpk > 1.67)	5 balls	10 parts min.	50		N/A to non-solder ball surface mount devices	
LI	C6	JESD22-B105	Lead Integrity:	10 leads	5 parts min.	50		N/A	
TEST GROUP D – DIE FABRICATION RELIABILITY TESTS									
EM	D1	JESD61	Electromigration:	-	-	-		N/A	
TDDB	D2	JESD35	Time Dependant Dielectric Breakdown:	-	-	-		N/A	
HCI	D3	JESD60 & 28	Hot Injection Carrier:	-	-	-		N/A	
NBTI	D4	-	Negative Bias Temperature Instability:	-	-	-		N/A	
SM	D5	-	Stress Migration:	-	-	-		N/A	

TEST GROUP E- ELECTRICAL VERIFICATION

TEST	E1	User/Supplier Specification	Pre and Post Stress Electrical Test:	All	All	All		100% of qualification devices	
HBM	E2	AEC-Q100-002	Electrostatic Discharge, Human Body Model: (2kV - H2 or better)	1			500V 3/0 1000V 3/0 1500V 3/0 2000V 3/0	QBS to TLE4275KTTRQ1 (Au wire version)	
CDM	E3	AEC-Q100-101	Electrostatic Discharge, Charged Device Model: (750V corner leads, 500V for all other pins)	1			250V 3/0 500V 3/0 750V 3/0	QBS to TLE4275KTTRQ1 (Au wire version)	
LU	E4	AEC-Q100-004	Latch-Up:	1	6	6	1/6/0	QBS to TLE4275KTTRQ1 (Au wire version)	
ED	E5	AEC-Q100-009	Electrical Distributions: (Cpk > 1.67)	1	30	30	125C – 30/0 25C – 30/0 -40C – 30/0	QBS to TLE4275KTTRQ1 (Au wire version)	

(1) Grade 0 (or A): -40°C to +150°C ambient operating temperature range
Grade 1 (or Q): -40°C to +125°C ambient operating temperature range
Grade 2 (or T): -40°C to +105°C ambient operating temperature range
Grade 3 (or I): -40°C to +85°C ambient operating temperature range
Grade 4 (or C): -0°C to +150°C ambient operating temperature range
(2) These are recommended minimum lot/sample sizes. Lot/sample size may be reduced depending on available data.
(3) Generic data may be used.

Qualification Data:

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

Supplier Name:	Texas Instruments Inc.	**Supplier Wafer Fabrication Site:**	TI Sherman fab - SFAb
Supplier Code:		**Supplier Die Rev**	D
Supplier Part Number:	TL720M05QKTTRQ1	**Supplier Assembly/Test Site:**	NFME
Customer Name:		**Supplier Package/Pin:**	KTT/5
Customer Part Number:	TL720M05QKTTRQ1	**Pb-Free Lead Frame (Y/N):**	Y
Device Description:	LDO	**“Green” Mold Compound (Y/N):**	Y
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AC or UHST	A3	JESD22-A102 JESD22-A118	Autoclave: 121°C/15 psig/96 hours Unbiased Highly Accelerated Stress Test: 130°C/85%/96 hours or 110°C/85%/264 hours	3	77	231	3/231/0	QBS to TLE4275KTTRQ1 copper wire version	
TC	A4	JESD22-A104	Temperature Cycle: -65°C/+150°C/500 cycles	1	77	77	1/77/0		
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HCI	D3	JESD60 & 28	Hot Injection Carrier:	-	-	-		N/A	
NBTI	D4	-	Negative Bias Temperature Instability:	-	-	-		N/A	
SM	D5	-	Stress Migration:	-	-	-		N/A	

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