

PCN Number:	20130905001		PCN Date:	09/06/2013						
Title:	TAS5414 copper wire – CMS C1309042									
Customer Contact:	PCN_ww_admin_team@list.ti.com		Phone:	+1(214)480-6037						
Dept:	Quality Services									
Proposed 1st Ship Date:	03/06/2014		Estimated Sample Availability:	Upon request						
Change Type:										
<input type="checkbox"/>	Assembly Site		<input type="checkbox"/>	Assembly Process						
<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	Assembly Materials						
<input type="checkbox"/>	Design		<input type="checkbox"/>	Electrical Specification						
<input type="checkbox"/>			<input type="checkbox"/>	Mechanical Specification						
<input type="checkbox"/>	Test Site		<input type="checkbox"/>	Packing/Shipping/Labeling						
<input type="checkbox"/>			<input type="checkbox"/>	Test Process						
<input type="checkbox"/>	Wafer Bump Site		<input type="checkbox"/>	Wafer Bump Material						
<input type="checkbox"/>			<input type="checkbox"/>	Wafer Bump Process						
<input type="checkbox"/>	Wafer Fab Site		<input type="checkbox"/>	Wafer Fab Materials						
<input type="checkbox"/>			<input type="checkbox"/>	Wafer Fab Process						
PCN Details										
Description of Change:										
Change the TAS5414 device from gold to copper bond wire.										
Reason for Change:										
Texas Instruments plans to convert devices from gold to copper bond wire where possible.										
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:										
<table border="1"> <tr><td>TAS5414ATPHDMQ1</td></tr> <tr><td>TAS5414ATPHDQ1</td></tr> <tr><td>TAS5414ATPHDRMQ1</td></tr> <tr><td>TAS5414ATPHDRPA</td></tr> <tr><td>TAS5414ATPHDMQ1</td></tr> </table>						TAS5414ATPHDMQ1	TAS5414ATPHDQ1	TAS5414ATPHDRMQ1	TAS5414ATPHDRPA	TAS5414ATPHDMQ1
TAS5414ATPHDMQ1										
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TAS5414ATPHDRMQ1										
TAS5414ATPHDRPA										
TAS5414ATPHDMQ1										

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

See Qualification Data on the following pages

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

Supplier Name:	Texas Instruments Inc.	Supplier Wafer Fabrication Site:	Dallas, Texas, USA (TI DMOS5)
Supplier Code:		Supplier Die Rev:	D2
Supplier Part Number:	TAS5414BTPHDRQ1	Supplier Assembly/Test Site:	TI Taiwan (TAI), Taipei ,Taiwan
Customer Name:	Catalog	Supplier Package/Pin:	PHD / 64
Customer Part Number:	TAS5414BTPHDRQ1	Pb Free Lead Frame (Y/N):	Y
Device Description:	FOUR-CHANNEL AUTOMOTIVE DIGITAL AMPLIFIERS	“Green” Mold Compound (Y/N):	Y
MSL Rating:	3	Operating Temp Range:	TA= --40°C to +105°C
Peak Solder Reflow Temp:	260°C	Automotive Grade Level (1):	Level 2
Prepared by Signature:	Alfredo Martinez	Date:	1/18/2012

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
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TEST GROUP A – ACCELERATED ENVIRONMENT STRESS TESTS (3)

PC	A1	JESD22 A113 J-STD-020	Preconditioning; SMD only; Moisture Preconditioning for THB/HAST, AC/UHST, TC, HTSL	Performed on ALL SMD devices, Prior to THB, AC, TC, PTC, HTSL					
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	3	77	231	3/231/1	QTS 337904-1 (EOS)	
AC or UHST	A3	JESD22 A102 or JESD22 A118	Autoclave: 121C / 96 hours Unbiased Highly Accelerated Stress Test:	3	77	231	3/231/0		
TC	A4	JESD22 A104	Temperature Cycle: -65°C/+150°C/ 500 cycles Post Temp Cycle Bond Pull 3 grams minimum (30 bonds Total)	3	77	231	3/231/1	QTS 338008-1 (EOS)	
PTC	A5	JESD22-A105	Power Temperature Cycle: -40°C to +105°C for 1000 cycles	1	45	45	1/45/0		
HTSL	A6	JESD22 A103	High Temperature Storage Life: 150°C/1000 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	3	77	231	3/231/0		
ELFR	B2	AEC-Q100-008	Early Life Failure Rate: 125°C/ 1000hours	3	800	2400	4/2400/0		
NVM Endurance, Data Retention, and Operational Life	B3	AEC Q100-005	NVM Endurance, Data Retention, and Operational Life	3	77	231		N/A	

TEST GROUP C – PACKAGE ASSEMBLY INTEGRITY TESTS (3)

WBS	C1	AEC-Q100-001	Wire Bond Shear Test: (Ppk > 1.67 and Cpk > 1.33)	30 bonds	5 parts Min.	30 bonds	1/80/0		
WBP	C2	Mil-Std-883 Method 2011	Wire Bond Pull: Each bonder used (Ppk > 1.67 and Cpk > 1.33)	30 bonds	5 parts Min.	30 bonds	1/80/0		
SD	C3	JESD22 B102	Solderability: (>95% coverage) 8 hr steam age	1	15	15	1/15/0		
PD	C4	JESD22 B100, JESD22 B108	Physical Dimensions: (Ppk > 1.67 and Cpk > 1.33)	3	10	30	3/30/0		
SBS	C5	AEC-Q100-010	Solder Ball Shear: (Ppk > 1.67 and Cpk > 1.33)	50 balls	3	50		N/A to non-solder ball surface mount devices	
LI	C6	JESD22 B105 Not Required for SMT parts	Lead Integrity: (No lead cracking or breaking)	50 leads	1	50		N/A to non-solder ball surface mount devices	

TEST GROUP D – DIE FABRICATION RELIABILITY TESTS

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
EM	D1	JESD61	Electromigration: (Only if de-rating required beyond design rules)	-	-	-	Passed		
TDDDB	D2	JESD35	Time Dependant Dielectric Breakdown:	-	-	-		N/A	
HCI	D3	JESD60 & 28	Hot Injection Carrier	-	-	-		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	1	3	3	500V 3/0 1000V 3/0 1500V 3/0 2000V 3/0 2500V 3/0 3000V 3/0	Passed 3000V	
MM	E2	AEC-Q100-003	Machine Model:	1	3	3	100V 3/0 200V 3/3	Passed 100V	
CDM	E3	AEC-Q100-011	Electrostatic Discharge, Charged Device Model; (750V corner leads, 500V for all other leads)	1	3	3	All pins except CP and CP_Top 600V 3/0 CP and CP_Top pins 400V 3/0 Corner pins excluding SCL 750V 3/0	Passed 600V excluding CP and CP_Top pins Passed 400V Passed 750V excluding SCL pin	ESD CDM < 500V for CP and CP_Top pins ESD CDM < 750V for SCL pin.
LU	E4	AEC-Q100-004	Latch-Up:	1	6	6	1/6/0		
ED	E5	AEC-Q100-009	Electrical Distributions: (Test across recommended operating temperature range) (Cpk > 1.67 , Ppk > 1.67)	3	90	90	3/90/0 25°C, 105°C, -40°C		

- (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.

Quality and Reliability Data Disclaimer

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Reliability data shows characteristic failure mechanisms of the specific environmental stress as documented in the industry standards for each stress condition.