PCN Number:	20141030001			**PCN Date:**	11/03/2014
Title:	TAS5424DKE new BOM				
Customer Contact:	PCN Manager	**Phone:**	+1(214)480-6037	**Dept:**	Quality Services
Proposed 1st Ship Date:	05/03/2014	**Estimated Sample Availability:**	8 weeks after 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 Incorporated is announcing the qualification for TAS5424xTDKERQ1 Cu wire, new L/F supplier and Mold Compound.

	From:	To:
Lead Frame	PSMC	Shinko
Mold Compound	Sumitomo EME-G600	Sumitomo G700LS
Bond Wire	Au	Cu

Reason for Change:

Continuity of supply.

1) Shinko ISO/TS leadframe supplier
2) To align with world technology trends and use wiring with enhanced mechanical and electrical properties.

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

Improved delamination performance with G700LS.

Changes to product identification resulting from this PCN:

No change to the product identification of the actual device or shipping labels.

Product Affected:

TAS5424BTDKERQ1

TAS5424CTDKERQ1

Qualification Plan:

Automotive New Product Qualification Plan

(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:	TAS5424BTDKEQ1 TAS5424CTDKERQ1	**Supplier Assembly/Test Site:**	Assembly: Amkor Philippines (AP1) Test: TI Taiwan, Taipei ,Taiwan (TAI)
Customer Name:		**Supplier Package/Pin:**	DKE / 44
Customer Part Number:	324836-0040	**Pb Free Lead Frame (Y/N):**	Y
Device Description:	FOUR-CHANNEL AUTOMOTIVE DIGITAL AMPLIFIERS	**"Green" Mold Compound (Y/N):**	Y
MSL Rating:	Level 3	**Operating Temp Range:**	TA= --40°C to +105°C
Peak Solder Reflow Temp:	245°C	**Automotive Grade Level (1):**	Level 2
Prepared by Signature:	Anita Bills / David McCain	**Date:**	10/29/2014

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 A113 J-STD-020	Preconditioning: SMD only; Moisture Preconditioning for THB/HAST, AC/UHST, TC, HTSL, PTC	Performed on ALL SMD devices, Prior to THB, AC, TC , PTC, HTSL				L3-245°C (Use Auto Reflow profile) (3 lots)	
THB or HAST	A2	JESD22 A101 JESD22 A110	Temperature Humidity Bias: 85°C/85%/1000 hours Highly Accelerated Stress Test: **130°C/85% RH/96 hours**	3	77	231			
AC or UHST or TH	A3	JESD22 A102 or JESD22 A118 or JESD22 A101	Autoclave: **121°C/2 atm/96 hours** Unbiased Highly Accelerated Stress Test **130°C/85% RH/96 hours** Temperature-Humidity (without bias) **85°C/85% RH/1000 hours**	3	77	231			
TC	A4	JESD22 A104 and Appendix 3	Temperature Cycle: **-65°C/+150°C/500 cycles** Post Temp Cycle Bond Pull 3 grams minimum (30 bonds total)	3 1	77 5	231 0			
PTC	A5	JESD22-A105	Power Temperature Cycle: **-40°C to +105°C for 1000 cycles**	1	45	45			
HTSL	A6	JESD22 A103	High Temperature Storage Life: **150°C/1000 hours**	1	45	45			
TEST GROUP B – ACCELERATED LIFETIME SIMULATION TESTS (3)									
HTOL	B1	JESD22 A108	High Temp Operating Life: **125°C/1000 hours/V_{DD} Max**	3	77	231			
ELFR	B2	AEC-Q100-008	Early Life Failure Rate: **125°C/24 hours/V_{DD} Max**	3	800	2400			
EDR	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 wires			
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 wires			
SD	C3	JESD22 B102	Solderability: (>95% coverage) 8 hr steam age	1	60	60			
PD	C4	JESD22 B100, JESD22 B108	Physical Dimensions: (Ppk > 1.67 and Cpk > 1.33)	3	10	30			
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	---	Not Required for SMT parts	

TEST GROUP D – DIE FABRICATION RELIABILITY TESTS

EM	D1	JESD61	Electromigration: (Only if de-rating required beyond design rules)	-	-	-			
TDDB	D2	JESD35	Time Dependent Dielectric Breakdown	-	-	-	---	N/A	
HCI	D3	JESD60 & 28	Hot Injection Carrier	-	-	-	---	N/A	

TEST GROUP E- ELECTRICAL VERIFICATION TESTS

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	-	-	-	---	N/A	
MM	E2	AEC-Q100-003	Electrostatic Discharge, Machine Model:	-	-	-	---	N/A	
CDM	E3	AEC-Q100-011	Electrostatic Discharge, Charged Device Model; (750V corner leads, 500V for all other leads)	-	-	-	---	N/A	
LU	E4	AEC-Q100-004	Latch-Up:	-	-	-	---	N/A	
ED	E5	AEC-Q100-009	Electrical Distributions: (Test across recommended operating temperature range) (Cpk > 1.67 , Ppk > 1.67)	3	30	90		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.

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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.

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

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