PCN Number:	20140206000	PCN Date:	02/18/2014
Title:	TLC6C598QPWRQ1 BOM		

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

Proposed 1st Ship Date:	08/18/2014	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 Incorporated is announcing the qualification for TLC6C598QPWRQ1 copper wire and universal BOM

Die rev	B0	B1
Mold Compound	4206193	4211471
Bond Wire	Au	CU

Reason for Change:

Improved adhesion and reliability

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:

TLC6C598QPWRQ1

Automotive New Product Qualification Plan/Summary

(As per AEC-Q100 and JEDEC Guidelines)

Supplier Name:	Texas Instruments Inc.	**Supplier Wafer Fabrication Site:**	DMOS5,Dallas, USA
Supplier Code:		**Supplier Die Rev:**	B1
Supplier Part Number:	TLC6C598QPWRQ1	**Supplier Assembly/Test Site:**	TITL, Taiwan
Customer Name:		**Supplier Package/Pin:**	PW/16
Customer Part Number:		**Pb-Free Lead Frame (Y/N):**	Y
Device Description:	8-BIT SHIFT REGISTER LED DRIVER	**"Green" Mold Compound (Y/N):**	Y
MSL Rating:	LEVEL3	**Operating Temp Range:**	-40C to 125C
Peak Solder Reflow Temp:	260C	**Automotive Grade Level (1):**	1 (Q)
Date:	Qi Gao	**Date:**	1/27/2014

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	JESD22-113 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	3	77	231	3/231/0	3 lots QBS to current BOM	
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	3	77	231	3/231/0	3 lots QBS to current BOM	
TC	A4	JESD22-A104	Temperature Cycle: -65°C/+150°C/500 cycles Post Temperature Cycle Bond Pull: 3 grams minimum	1 1	77 5	77 5	1/77/0 1/5/0	Passed	
PTC	A5	JESD22-A105	Power Temperature Cycling: -40°C/+125°C/1000 cycles	1	45	45	1/45/0	1 lot QBS to current BO	
HTSL	A6	JESD22-A103	High Temperature Storage Life: 150°C/1000 hours or 175°C/500 hours	1	45	45	1/45/0	1 lot QBS to current BO	
TEST GROUP B – ACCELERATED LIFETIME SIMULATION TESTS (3)									
HTOL	B1	JESD22-A108	High Temp Operating Life: 150°C/408 hours	3	77	231	3/231/0	TIDREL.12.MSA-APD.06004 (TLC6C598) QBS to MSPREL.12.TPS65300.01001 (TPS65300) MSPREL.12.TPS65300.01002 (TPS65300)	
ELFR	B2	AEC-Q100-008	Early Life Failure Rate: **125°C / 48 hours** 150°C / 24 hours	3	800	2400	3/2400/0	QBS to MSPREL.12.TPS65300.01001 (TPS65300) MSPREL.12.TPS65300.01002 (TPS65300) MSPREL.12.TPS65300.01003 (TPS65300)	

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	Manufacturing Qualification Data	
WBP	C2	Mil-Std-883 Method 2011	Wire Bond Pull: Each bonder used (Ppk > 1.67 and Cpk > 1.33 or 0 Fails after TC)	30 bonds	5 parts min.	30 bonds	1/30/0	Manufacturing Qualification Data	
SD	C3	JESD22-B102	Solderability: (>95% coverage) 8 hr steam age	1	22	22	1/22/0	Manufacturing Qualification Data	
PD	C4	JESD22-B100 JESD22-B108	Physical Dimensions: (Ppk > 1.67 and Cpk > 1.33)	1	10	10	1/10/0	Manufacturing Qualification Data	

TEST GROUP D – DIE FABRICATION RELIABILITY TESTS

EM	D1	JESD61	Electromigration:	-	-	-		Passed	
TDDB	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: (2kV - H2 or better)	1	3	3	500V 3/0 1000V 3/0 1500V 3/0 2000V 3/0	1 lot QBS to current BOM	
CDM	E3	AEC-Q100-101	Electrostatic Discharge, Charged Device Model: (750V corner leads, 500V for all other pins)	1	3	3	250V 3/0 500V 3/0 750 V 3/0	1 lot QBS to current BOM	
LU	E4	AEC-Q100-004	Latch-Up:	1	6	6	1/6/0	1 lot QBS to current BOM	
ED	E5	AEC-Q100-009	Electrical Distributions: (Test across recommended operating temperature range) (Cpk > 1.67, Ppk > 1.67)	1	30	30	125C 30/0 25C 30/0 -40C 30/0	Data available	

ADDITIONAL INFORMATION

(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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