

PCN Number:		20150121000		PCN Date:		01/26/2015													
Title:		TLC6C5912QPWRQ1 BOM																	
Customer Contact:		PCN_ww_admin_team@list.ti.com		PCN Type:		180 Days													
Dept:		Quality Services		Proposed 1st Ship Date:		07/26/2015													
Estimated Sample Availability:		Date provided at sample request																	
Change Type:																			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>													
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>													
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process	<input type="checkbox"/>													
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>													
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Materials	<input type="checkbox"/>													
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process	<input type="checkbox"/>													
PCN Details																			
Description of Change:																			
Texas Instruments Incorporated is announcing a change to device TLC6C5912QPWRQ1 bill of material to convert to copper bond wire and mold compound.																			
<table border="1"> <thead> <tr> <th></th> <th>From:</th> <th>To:</th> </tr> </thead> <tbody> <tr> <td>Die rev</td> <td>B0</td> <td>B1</td> </tr> <tr> <td>Mold Compound</td> <td>4206193</td> <td>4211471</td> </tr> <tr> <td>Bond Wire</td> <td>Au</td> <td>Cu</td> </tr> </tbody> </table>									From:	To:	Die rev	B0	B1	Mold Compound	4206193	4211471	Bond Wire	Au	Cu
	From:	To:																	
Die rev	B0	B1																	
Mold Compound	4206193	4211471																	
Bond Wire	Au	Cu																	
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) Copper wire is easier to obtain and stock.																			
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):																			
None																			
Changes to product identification resulting from this PCN:																			
None																			
Product Affected:																			
TLC6C5912QPWRQ1																			

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 Dallas DMOS5
Supplier Code:		Supplier Die Rev.	B1
Supplier Part Number:	TLC6C5912QPWRQ1	Supplier Assembly/Test Site:	TI Taiwan
Customer Name:	All customers	Supplier Package/Pin:	20/PW
Customer Part Number:	N/A	Pb-Free Lead Frame (Y/N):	Y
Device Description:	Automotive Power Logic 12-Bit Shift Register LED Driver	"Green" Mold Compound (Y/N):	Y
MSL Rating:	Level3@260C	Operating Temp Range:	-40C to +125C
Peak Solder Reflow Temp:	260C	Automotive Grade Level (1):	1
Prepared by:	Larry Ting	Date:	9/23/2014

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
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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	QBS to TLC6C598QPWQ1	
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 TLC6C598QPWQ1	
TC	A4	JESD22-A104	Temperature Cycle: -65°C/+150°C/500 cycles	3	77	231	3/231/0	QBS to TLC6C598QPWQ1	
PTC	A5	JESD22-A105	Power Temperature Cycling: -40°C/+125°C/1000 cycles	1	45	45	1/45/0	TLC6C5912QPWRQ 1	
HTSL	A6	JESD22-A103	High Temperature Storage Life: 150°C/1000 hours or 175°C/500 hours	1	45	45	1/45/0	QBS to TLC6C598QPWQ1	

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 TLC6C598QPWQ1	
ELFR	B2	AEC-Q100-008	Early Life Failure Rate:	3	800	2400	3/2400/0	QBS to TLC6C598QPWQ1	

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	Pass	TLC6C5912QPWRQ 1	
WBP	C2	Mil-Std-883 Method 2011	Wire Bond Pull: Each bonder used (Cpk > 1.67)	30 bonds	5 parts min.	30 bonds	Pass	TLC6C5912QPWRQ 1	
SD	C3	JESD22-B102	Solderability: (>95% coverage) 8 hr steam age (1 hour for Au-plated leads)	1	15	15	Pass	TLC6C5912QPWRQ 1	
PD	C4	JESD22-B100 JESD22-B108	Physical Dimensions: (Cpk > 1.67)	1	10	10	Pass	TLC6C5912QPWRQ 1	
SBS	C5	AEC-Q100-010	Solder Ball Shear: (Cpk > 1.67)	5 balls	10 parts min.	50	N/A	TLC6C5912QPWRQ 1	
LI	C6	JESD22-B105	Lead Integrity:	10 leads	5 parts min.	50	Pass	TLC6C5912QPWRQ 1	

TEST GROUP E- ELECTRICAL VERIFICATION

TEST	E1	User/Supplier Specification	Pre and Post Stress Electrical Test:	All	All	All	Pass	TLC6C5912QPWRQ 1	
HBM	E2	AEC-Q100-002	Electrostatic Discharge, Human Body Model: (2kV - H2 or better)	1	3	3	Pass	TLC6C5912QPWRQ 1	
MM	E2	AEC-Q100-003	Electrostatic Discharge, Machine Model: (200V – M3 or better)	1			N/A		
CDM	E3	AEC-Q100-101	Electrostatic Discharge, Charged Device Model: (750V corner leads, 500V for all other pins)	1	3	3	Pass	TLC6C5912QPWRQ 1	
LU	E4	AEC-Q100-004	Latch-Up:	1	6	6	Pass	TLC6C5912QPWRQ 1	
ED	E5	AEC-Q100-009	Electrical Distributions: (Cpk > 1.67)	3	30	90	Pass	TLC6C5912QPWRQ 1	

- (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.

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