

<b>PCN Number:</b>	20171201000	<b>PCN Date:</b>	Dec. 6 2017						
<b>Title:</b>	TXS0102QDCURQ1 convert to Roughened LF								
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services						
<b>Proposed 1<sup>st</sup> Ship Date:</b>	June 6, 2018	<b>Estimated Sample Availability:</b>	Date provided at sample request						
<b>Change Type:</b>									
<input type="checkbox"/> Assembly Site	<input type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Site							
<input type="checkbox"/> Assembly Process	<input type="checkbox"/> Data Sheet	<input type="checkbox"/> Wafer Bump Material							
<input checked="" type="checkbox"/> Assembly Materials	<input type="checkbox"/> Part number change	<input type="checkbox"/> Wafer Bump Process							
<input type="checkbox"/> Mechanical Specification	<input type="checkbox"/> Test Site	<input type="checkbox"/> Wafer Fab Site							
<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	<input type="checkbox"/> Wafer Fab Materials							
		<input type="checkbox"/> Wafer Fab Process							
<b>PCN Details</b>									
<b>Description of Change:</b>									
Texas Instruments Incorporated is announcing the qualification of a new Leadframe for TXS0102QDCURQ1. The change is from non-roughened Leadframe to single-side roughened leadframe.									
	<table border="1"> <thead> <tr> <th>Material</th> <th>Current</th> <th>New</th> </tr> </thead> <tbody> <tr> <td>Leadframe</td> <td>6470634-0001 non-roughened</td> <td>6603993 single-side roughened</td> </tr> </tbody> </table>			Material	Current	New	Leadframe	6470634-0001 non-roughened	6603993 single-side roughened
Material	Current	New							
Leadframe	6470634-0001 non-roughened	6603993 single-side roughened							
<b>Reason for Change:</b>									
Improvement of reliability.									
<b>Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):</b>									
None.									
<b>Changes to product identification resulting from this PCN:</b>									
None.									
<b>Product Affected:</b>									
TXS0102QDCURQ1									



## Automotive New Product Qualification Summary

(As per AEC-Q100 and JEDEC Guidelines)

### AEC Q100 qual for TXS0102QDCURQ1 8-pin VSSOP pkg – ROUGHENED LF Approved 26-Apr-2017

#### Product Attributes

Attributes	Qual Device: TXS0102QDCURQ1	QBS Product Reference: TXS0102QDCURQ1	QBS Process Reference: T3221AQRSERQ1	QBS Package Reference: SN74LVC2G66QDCURQ1
Operating Temp Range	-40 to +125 C	-40 to +125 C	-40 to +125 C	-40 to +125 C
Automotive Grade Level	Grade 1	Grade 1	Grade 1	Grade 1
Product Function	Logic	Logic	Logic	Logic
Wafer Fab Supplier	FFAB	FFAB	FFAB	FFAB
Die Revision	-	-	A	-
Assembly Site	HNT	HNT	HANA	HNT
Package Type	VSSOP	VSSOP	UQFN	VSSOP
Package Designator	DCU	DCU	RSE	DCU
Ball/Lead Count	8	8	10	8

- QBS: Qual By Similarity

- Qual Device TXS0102QDCURQ1 is qualified at LEVEL2-260C

#### Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: TXS0102QDCURQ1	QBS Product Reference: TXS0102QDCURQ1	QBS Process Reference: T3221AQRSERQ1	QBS Package Reference: SN74LVC2G66QDCURQ1
Test Group A – Accelerated Environment Stress Tests										
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 1-260C	-	-	-	3/all/0
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 2-260C	1/all/0	1/all/0	-	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	-	1/77/0	3/231/0	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	1/77/0	1/77/0	3/231/0	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	1/77/0	1/77/0	3/231/0	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp. Cycle Bond Pull	Wires	-	1/5/0	1/5/0	1/5/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A	-	-	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp. Storage Bake, 170C	420 Hours	-	-	-	1/45/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp. Storage Bake, 175C	500 Hours	-	1/45/0	1/45/0	-

Test Group B – Accelerated Lifetime Simulation Tests										
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 Hours	-	-	3/231/0	-
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 150C	408 Hours	-	1/77/0	-	1/77/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	-	-	3/2400/0	1/800/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	--	N/A	-	-	-
Test Group C – Package Assembly Integrity Tests										
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk >1.67)	Wires	1/30/0	1/30/0	1/30/0	1/77/0
WBP	C2	MIL-STD883 Method 2011	1	30	Bond Pull (Cpk >1.67)	Wires	1/30/0	1/30/0	1/10/0	1/77/0
SD	C3	JEDEC JESD22-B102	1	15	Solderability	>95% coverage	1/15/0	-	1/15/0	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk >1.67)	-	-	-	3/30/0	3/30/0
SBS	C5	AEC Q100-010	3	50	Solder Ball Shear (Cpk >1.67)	Post HTSL/Bump	NA	-	-	-
LI	C6	JEDEC JESD22-B105	1	50	Lead Integrity	Leads	NA	-	-	-
LI	C6	JEDEC JESD22-B105	1	50	Lead Pull to Destruction	Leads	1/24/0	-	-	-
Test Group D – Die Fabrication Reliability Tests										
EM	D1	JESD61	-	-	Electromigration	--	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TDDDB	D2	JESD35	-	-	Time Dependant Dielectric Breakdown	--	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	--	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
NBTI	D4	-	-	-	Negative Bias Temperature Instability	--	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	--	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
Test Group E – Electrical Verification Tests										
HBM	E2	AEC Q100-002	1	3	ESD - HBM	2000 V	-	1/3/0	1/3/0	-
CDM	E3	AEC Q100-011	1	3	ESD - CDM	500V (all pins) 750 V (corner pins)	-	1/3/0	1/3/0	-
LU	E4	AEC Q100-004	1	6	Latch-up	(Per AEC Q100-004)	-	1/6/0	1/6/0	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk >1.67 Room, hot, and cold test	-	3/90/0	3/90/0	3/90/0

**A1 (PC): Preconditioning:**

Performed for THB, Biased HAST, AC, uHAST & TC samples, as applicable.

**Ambient Operating Temperature by Automotive Grade Level:**

Grade 0 (or E): -40°C to +150°C

Grade 1 (or Q): -40°C to +125°C

Grade 2 (or T): -40°C to +105°C

Grade 3 (or I): -40°C to +85°C

**E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):**

Room/Hot/Cold : HTOL, ED

Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU

Room : AC/uHAST

**Green/Pb-free Status:**

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

<b>Location</b>	<b>E-Mail</b>
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>