

PCN Number:	20211123000.2			PCN Date:	December 28, 2021												
Title:	Qualification of a new BOM for select devices in the SOIC package																
Customer Contact:	PCN Manager	Dept:	Quality Services														
Proposed 1st Ship Date:	June 28 2022	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"/>	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												
PCN Details																	
Description of Change:																	
This PCN is to inform of the qualification of a new BOM for the devices in the product affected section as follows:																	
<table border="1"> <thead> <tr> <th>What</th> <th>Current</th> <th>New</th> </tr> </thead> <tbody> <tr> <td>Mount Compound</td> <td>4042500</td> <td>4147858</td> </tr> <tr> <td>Mold Compound</td> <td>4205694</td> <td>4211880</td> </tr> <tr> <td>Leadframe Prep</td> <td>Non-Roughened</td> <td>Roughened</td> </tr> </tbody> </table>						What	Current	New	Mount Compound	4042500	4147858	Mold Compound	4205694	4211880	Leadframe Prep	Non-Roughened	Roughened
What	Current	New															
Mount Compound	4042500	4147858															
Mold Compound	4205694	4211880															
Leadframe Prep	Non-Roughened	Roughened															
Reason for Change:																	
Continuity of supply																	
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):																	
None																	
Impact on Environmental Ratings																	
Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.																	
<table border="1"> <thead> <tr> <th>RoHS</th> <th>REACH</th> <th>Green Status</th> <th>IEC 62474</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> </tr> </tbody> </table>						RoHS	REACH	Green Status	IEC 62474	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change				
RoHS	REACH	Green Status	IEC 62474														
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change														
Changes to product identification resulting from this PCN:																	
None																	
Product Affected:																	
MLA00149DR	SN65HVD1040AQDRQ1	SN65HVD1050AQDRQ1	SN65HVDA1040AQDRQ1														
MLA00312DR	SN65HVD1040QDRQ1	SN65HVD1050QDRQ1	SN65HVDA1050AQDRQ1														

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

**SOIC/SOP/SSOP Automotive UBOM Enterprise Qualification in TITL
Approved 03-Dec-2018**

Product Attributes

Attributes	Qual Device: LT1014DMDW	Qual Device: SN0302035DWRG4	Qual Device: TPIC6A595DWR
Automotive Grade Level	-	Grade 1	Grade 1
Operating Temp Range	-55 to +125 C	-40 to +125 C	-40 to +125 C
Product Function	Signal Chain	Signal Chain	Power Management
Wafer Fab Supplier	SFAB	DFAB	DFAB
Die Revision	J	C	C
Assembly Site	TAI	TAI	TAI
Package Type	SOIC	SOIC	SOIC
Package Designator	DW	DW	DW
Ball/Lead Count	16	20	24

- QBS: Qual By Similarity
- Qual Devices qualified at LEVEL1-260CG: LT1014DMDW and TPIC6A595DWR
- Qual Device qualified at LEVEL3-260CG: SN0302035DWRG4
- Device LT1014DMDW contains multiple dies.

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: LT1014DMDW	Qual Device: SN0302035DWRG4	Qual Device: TPIC6A595DWR
Test Group A – Accelerated Environment Stress Tests									
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 1-260C	No Fails	-	No Fails
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 3-260C	-	No Fails	-
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	2/154/0	3/231/0	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -55/125C	1000 Cycles	2/153/0 (1)	-	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -55/150C	1000 Cycles	-	3/228/0 (2)	3/231/0
TC- BP	A4	MIL-STD883 Method 2011	1	30	Post TC Bond Pull	Wires	2/60/0	3/90/0	3/90/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A	N/A	N/A
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 Hours	2/90/0	-	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 175C	500 Hours	-	3/135/0	3/135/0
Test Group B – Accelerated Lifetime Simulation Tests									
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	N/A	N/A	N/A
Test Group C – Package Assembly Integrity Tests									
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	Wires	2/60/0	3/90/0	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	Wires	2/60/0	3/90/0	3/90/0
SD	C3	JEDEC JESD22-B102	1	15	Solderability	>95% Lead Coverage	2/30/0	3/45/0	3/45/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	-	2/20/0	3/30/0	3/30/0
LI	C6	JEDEC JESD22-B105	1	50	Lead Integrity	-	-	-	-

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
TDDB	D2	JESD35	-	-	Time Dependant Dielectric Breakdown	-	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
NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	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

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST, TC & PTC 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:

Qualified Pb-Free(SMT) and Green

Note (1): 1 unit was missing/lost before test.

Note (2): 3 units were missing/lost before test.

TI Qualification ID: 20180507-125733



TI Information
Selective Disclosure

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

**Enterprise Qualification (Automotive) - SOIC Gen 2 Hyde D with Consolidated Leadframe
Approved 13-Sep-2021**

Product Attributes

Attributes	Qual Device: CD4093BQM96Q1	Qual Device: K3HVD1781QDRQ1	Qual Device: SE555DR	Qual Device: SN103592DR	Qual Device: SN74HCS08QDRQ1	Qual Device: TCAN1043GDRQ1	Qual Device: TCAN1044VDRQ1	Qual Device: TLC5916QDRQ1	Qual Device: TMS3705DDRQ1
Automotive Grade Level	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 3
Operating Temp Range	-40 to +125 C	-40 to +125 C	-55 to +125 C	-40 to +125 C	-40 to +125 C	-55 to +125 C	-40 to +125 C	-40 to +125 C	-40 to +85 C
Product Function	Signal Chain	Signal Chain	Signal Chain	Power Management	Signal Chain	Signal Chain	Signal Chain	Power Management	Logic
Wafer Fab Supplier	SH-BIP-1	DP1DM5	SH-BIP-1	SH-BIP-1	RFAB	MH8	RFAB	MH8	DL-LIN
Die Revision	-	-	B	C	B0	C	PG2.0	-	C
Assembly Site	FMX	MLA	TAI	TAI	MLA	FMX	MLA	FMX	TAI
Package Type	SOIC	SOIC	SOIC	SOIC	SOIC	SOIC	SOIC	SOIC	SOIC
Package Designator	D	D	D	D	D	D	D	D	D
Ball/Lead Count	14	8	8	8	14	14	8	16	16

- QBS: Qual By Similarity

- Qual Devices CD4093BQM96Q1, K3HVD1781QDRQ1, SE555DR, SN103592DR, SN74HCS08QDRQ1, TCAN1043GDRQ1, TCAN1044VDRQ1, TLC5916QDRQ1 are qualified at LEVEL1-260CG

- Qual Device TMS3705DDRQ1 is qualified at LEVEL3-260CG

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: CD4093BQ M96Q1	Qual Device: K3HVD1781Q DRQ1	Qual Device: SE656DR	Qual Device: SN103592 DR	Qual Device: SN74HCS08Q DRQ1	Qual Device: TCAN1043G DRQ1	Qual Device: TCAN1044V DRQ1	Qual Device: TLC5916Q DRQ1	Qual Device: TMS3705D DRQ1
Test Group A – Accelerated Environment Stress Tests														
AC	A3	JEDEC JESD 22-A102	3	77	Autoclave 121C	96 Hours	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
TC	A4	JEDEC JESD 22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
PTC	A5	JEDEC JESD 22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Test Group B – Accelerated Lifetime Simulation Tests														
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Test Group C – Package Assembly Integrity Tests														
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	-	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0
WBP	C2	MIL-STD883 Method	1	30	Wire Bond Pull (Cpk>1.67)	-	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0	3/90/0

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: CD4093BQ M96Q1	Qual Device: K3HVD1781Q DRQ1	Qual Device: SE555DR	Qual Device: SM103592 DR	Qual Device: SN74HCS08Q DRQ1	Qual Device: TCAN1043G DRQ1	Qual Device: TCAN1044V DRQ1	Qual Device: TLC5916Q DRQ1	Qual Device: TMS3705D DRQ1
		d 2011													
SD	C3	JEDEC JESD 22-B102	1	15	Surface Mount Solderability >95% Lead Coverage	PB-Free Solder	3/45/0	3/45/0	3/45/0	3/45/0	3/45/0	3/45/0	3/45/0	3/45/0	3/45/0
PD	C4	JEDEC JESD 22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	-	3/30/0	3/30/0	3/30/0	3/30/0	3/30/0	3/30/0	3/30/0	3/30/0	3/30/0
SB S	C5	AEC Q100-010	3	50	Solder Ball Shear (Cpk>1.67)	Solder Balls	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LI	C6	JEDEC JESD 22-B105	1	50	Lead Fatigue	Leads	3/66/0	3/66/0	3/66/0	3/66/0	3/66/0	3/66/0	3/66/0	3/66/0	3/66/0
LI	C6	JEDEC JESD 22-B105	1	50	Lead Pull	Leads	3/72/0	3/72/0	3/72/0	3/72/0	3/72/0	3/72/0	3/72/0	3/72/0	3/72/0
Test Group D – Die Fabrication Reliability Tests															
EM	D1	JESD 61	-	-	Electromigration	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TD DB	D2	JESD 35	-	-	Time Dependant Dielectric Breakdown	-	Completed Per Process Technology	Completed Per Process Technology Requirements	Completed Per Process Technology	Completed Per Process Technology Requirements	Completed Per Process Technology	Completed Per Process Technology	Completed Per Process Technology	Completed Per Process Technology	Completed Per Process Technology

Type #	Test Spec	Min Lot Qty	SSLot	Test Name / Condition	Duration	Qual Device: CD4093BQM96Q1	Qual Device: K3HVD1781QDRQ1	Qual Device: SE655DR	Qual Device: SM103592DR	Qual Device: SN74HCS089DRQ1	Qual Device: TCAN1043GDRQ1	Qual Device: TCAN1044VDRQ1	Qual Device: TLC59169DRQ1	Qual Device: TMS3705DRQ1
						Requirements		Requirements	Requirements		Requirements	Requirements	Requirements	Requirements
HCI	D3	JESD 60 & 28	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	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	Completed Per Process Technology Requirements	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	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements

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

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

TI Qualification ID: 20201023-136790

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

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