

<b>PCN Number:</b>	20231109003.2		<b>PCN Date:</b>	November 09, 2023																			
<b>Title:</b>	Qualification of MIHO8 as an additional Fab site option for select LB8LV devices																						
<b>Customer Contact:</b>	Change Management team		<b>Dept:</b>	Quality Services																			
<b>Proposed 1<sup>st</sup> Ship Date:</b>	May 9, 2024		<b>Sample requests accepted until:</b>	Dec 9, 2023*																			
<b>*Sample requests received after December 9, 2023 will not be supported.</b>																							
<b>Change Type:</b>																							
<input type="checkbox"/> Assembly Site	<input type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Material																					
<input type="checkbox"/> Assembly Process	<input type="checkbox"/> Data Sheet	<input type="checkbox"/> Wafer Bump Process																					
<input type="checkbox"/> Assembly Materials	<input type="checkbox"/> Part number change	<input checked="" type="checkbox"/> Wafer Fab Site																					
<input type="checkbox"/> Mechanical Specification	<input type="checkbox"/> Test Site	<input type="checkbox"/> Wafer Fab Material																					
<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	<input type="checkbox"/> Wafer Fab Process																					
<b>PCN Details</b>																							
<b>Description of Change:</b>																							
Texas Instruments is pleased to announce the qualification of MIHO8 as an additional fab site for selected devices as listed below in the product affected section.																							
<table border="1"> <thead> <tr> <th colspan="3">Current Fab Site</th> <th colspan="3">Additional Fab Site</th> </tr> <tr> <th>Current Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> <th>Additional Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> </tr> </thead> <tbody> <tr> <td>DMOS5</td> <td>LBC8LV</td> <td>200 mm</td> <td>MIHO8</td> <td>LBC8LV</td> <td>200 mm</td> </tr> </tbody> </table>			Current Fab Site			Additional Fab Site			Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter	DMOS5	LBC8LV	200 mm	MIHO8	LBC8LV	200 mm			
Current Fab Site			Additional Fab Site																				
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter																		
DMOS5	LBC8LV	200 mm	MIHO8	LBC8LV	200 mm																		
Qual details are provided in the Qual Data Section.																							
<b>Reason for Change:</b>																							
Continuity of Supply																							
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>																							
None																							
<b>Changes to product identification resulting from this PCN:</b>																							
<b>Fab Site Information:</b>																							
Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City																				
DMOS5	DM5	USA	Dallas																				
<b>MIHO8</b>	<b>MH8</b>	<b>JPN</b>	<b>Ibaraki</b>																				
Sample product shipping label (not actual product label)																							
<b>Product Affected:</b>																							
UCC21520QDWRQ1																							

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

### 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: UCC21320QDWKRQ1	QBS Product Reference: UCC21520AQDWRQ	QBS Product Reference: UCC21520QDWRQ1	QBS Process Reference: ISO7741FQDWRQ1
<b>Test Group A – Accelerated Environment Stress Tests</b>										
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	-	1/77/0	3/231/0	-
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	-	1/77/0	3/231/0	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, - 65/150C	500 Cycles	-	1/77/0	3/231/1 <sup>Note1</sup>	-
TC-BP	A4	MIL-STD883 Method 2011	1	30	Post Temp Cycle Bond Pull	Wires	-	1/30/0	3/90/0	-
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	-	1/45/0	1/45/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 Hours	-	1/45/0	1/45/0	-
<b>Test Group B – Accelerated Lifetime Simulation Tests</b>										
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 Hours	-	1/77/1 <sup>Note2</sup>	3/231/1 <sup>Note1</sup>	3/231/0
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate, 125C	48 Hours	-	-	-	3/2400/0
<b>Test Group C – Package Assembly Integrity Tests</b>										
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear (Cpk>1.67)	Wires	-	1/30/0	3/90/0	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Bond Pull (Cpk>1.67)	Wires	-	1/30/0	3/90/0	3/90/0
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability >95% Lead Coverage	-	-	-	-	1/15/0
PD	C4	JEDEC JESD22-	3	10	Physical Dimensions (Cpk>1.67)	-	-	-	-	1/30/0

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: UCC21320QDWKRQ1	QBS Product Reference: UCC21520AQDWRQ	QBS Product Reference: UCC21520QDWRQ1	QBS Process Reference: ISO7741FQDWRQ1
		B100 and B108								
<b>Test Group D – Die Fabrication Reliability Tests</b>										
EM	D1	JESD81	-	-	Electromigration	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TDOB	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	JESD90 & 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
<b>Test Group E – Electrical Verification Tests</b>										
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	4000 V	-	1/3/0	1/3/0	-
CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	1500 V	1/3/0	1/3/0	1/3/0	1/3/0
LU	E4	AEC Q100-004	1	6	Auto Latch-up	Ta(max)	-	1/6/0	1/6/0	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67	1/30/0	3/90/0	3/90/0	3/90/0

- QBS: Qual By Similarity  
- Qual Device UCC21320QDWKRQ1 is qualified at LEVEL3-260C  
- Device UCC21320QDWKRQ1 contains multiple dies

**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

**NOTES:**

- 1 unit failed AC and 1 unit failed HTOL due to an electrical over stress event. Contact TI Quality group for full 8D report.
- 1 unit failed HTOL due handling. Contact TI Quality group for full 8D report.

For questions regarding this notice, e-mails can be sent to Change Management team or your local Field Sales Representative.

### **IMPORTANT NOTICE AND DISCLAIMER**

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disdains responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale ([www.ti.com/legal/termsofsale.html](http://www.ti.com/legal/termsofsale.html)) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.