




<b>PCN Number:</b>	20240429002.1		<b>PCN Date:</b>	April 30, 2024																			
<b>Title:</b>	Qualification of RFAB using qualified Process Technology and Die Revision for select devices																						
<b>Customer Contact:</b>	Change Management Team		<b>Dept:</b>	Quality Services																			
<b>Proposed 1<sup>st</sup> Ship Date:</b>	July 29, 2024		<b>Sample requests accepted until:</b>	May 30, 2024*																			
<b>*Sample requests received after May 30, 2024 will not be supported.</b>																							
<b>Change Type:</b>																							
<input type="checkbox"/>	Assembly Site	<input checked="" 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 checked="" type="checkbox"/>	Wafer Fab Material																		
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input checked="" type="checkbox"/>	Wafer Fab Process																		
<b>PCN Details</b>																							
<b>Description of Change:</b>																							
Texas Instruments is pleased to announce the qualification of its RFAB fabrication facility as an additional Wafer Fab option for the devices listed below.																							
<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>SFAB</td> <td>JI1</td> <td>150 mm</td> <td>RFAB</td> <td>TIB</td> <td>300 mm</td> </tr> </tbody> </table>			Current Fab Site			Additional Fab Site			Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter	SFAB	JI1	150 mm	RFAB	TIB	300 mm			
Current Fab Site			Additional Fab Site																				
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter																		
SFAB	JI1	150 mm	RFAB	TIB	300 mm																		
The die was also changed as a result of the process change.																							
Qual details are provided in the Qual Data Section.																							
<b>Reason for Change:</b>																							
These changes are part of our multiyear plan to transition products from our 150-millimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.																							
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>																							
None																							
<b>Impact on Environmental Ratings:</b>																							
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.																							
<b>RoHS</b>		<b>REACH</b>		<b>Green Status</b>																			
<input checked="" type="checkbox"/> No Change		<input checked="" type="checkbox"/> No Change		<input checked="" type="checkbox"/> No Change																			
<input type="checkbox"/> No Change		<input type="checkbox"/> No Change		<input type="checkbox"/> No Change																			
<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																				
SH-BIP-1	SHE	USA	Sherman																				
<b>RFAB</b>	<b>RFB</b>	<b>USA</b>	<b>Richardson</b>																				
<b>Die Rev:</b>																							
<b>Current</b>		<b>New</b>																					
Die Rev [2P]	Die Rev [2P]																						
F	A																						
Sample product shipping label (not actual product label):																							


**TEXAS  
INSTRUMENTS**  
 MADE IN: Malaysia  
 2DC: 2Q:





(1P) SN74LS07NSR  
 (Q) 2000 (D) 0336  
 (31T) LOT: 3959047MLA  
 (4W) TKY (1T) 7523483SI2  
 (P)  
 (2P) REV: (V) 0033317  
 (20L) CS0: SHE (21L) CC0:USA  
 (22L) AS0: MLA (23L) AC0: MYS

MSL 2 / 260C / 1 YEAR SEAL DT  
 MSL 1 / 235C / UNLIM 03/29/04  
 OPT:  
 ITEM: 39  
 LBL: 5A (L)T0:1750

**Product Affected:**

ULN2003AINSR	ULN2003ANSR
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For alternate parts with similar or improved performance, please visit the product page on [TI.com](https://www.ti.com)

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: ULN2003ANSR	QBS Package Reference: SN74LV14ANSR	QBS Process Reference: MC33063ADR	QBS Process Reference: MC33063ADR	QBS Product Reference: ULN2003ADR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0	-
UHA	A3	Autoclave	121C/15psig	96 Hours	-	1/77/0	-	-	-
UHA	A3	Unbiased HAST	130C/85%RH	96 Hours	1/77/0	-	3/231/0	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	1/77/0	1/77/0	3/231/0	3/231/0	1/77/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	3/231/0	3/231/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	2/154/0	1/77/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	1/800/0	2/1600/0	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	-	1/76/0	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	-	1/76/0	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	1/3/0	1/3/0	-	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	-	1/3/0	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	-	1/3/0	-	1/3/0

Type	#	Test Name	Condition	Duration	Qual Device: ULN2003ANSR	QBS Package Reference: SN74LV14ANSR	QBS Process Reference: MC33063ADR	QBS Process Reference: MC33063ADR	QBS Product Reference: ULN2003ADR
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/5/0	1/30/0	1/30/0	1/30/0	1/30/0

- QBS: Qual By Similarity
  - Qual Device ULN2003ANSR is qualified at MSL1 260C
  - Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
  - The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
  - The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
  - The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles
- Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>
- TI Qualification ID: R-CHG-2305-089

## Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: <a href="#">ULN2003AINSR</a>	QBS Reference: <a href="#">MC33063ADR</a>	QBS Reference: <a href="#">MC33063ADR</a>	QBS Reference: <a href="#">ULQ2003AQDRQ1</a>	QBS Reference: <a href="#">ULN2003AINSR</a>
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	1/77/0	-
UHA	A3	Autoclave	121C/15psig	96 Hours	-	-	-	1/77/0	-
UHA	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	-	1/77/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	1/77/0	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	1/45/0	-
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	3/231/0	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	2/154/0	1/77/0	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	3/231/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	1/800/0	2/1600/0	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-

Type	#	Test Name	Condition	Duration	Qual Device: <a href="#">ULN2003AINSR</a>	QBS Reference: <a href="#">MC33063ADR</a>	QBS Reference: <a href="#">MC33063ADR</a>	QBS Reference: <a href="#">ULQ2003AQDRQ1</a>	QBS Reference: <a href="#">ULN2003AINSR</a>
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	1/15/0	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	1/10/0	-
ESD	E2	ESD CDM	-	250 Volts	-	1/3/0	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	-	-	1/3/0	-
ESD	E2	ESD HBM	-	1000 Volts	-	1/3/0	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0	-
LU	E4	Latch-Up	Per JESD78	-	-	1/3/0	-	1/6/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/5/0	1/30/0	1/30/0	-	1/5/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	3/90/0	-

- QBS: Qual By Similarity
- Qual Device ULN2003AINSR is qualified at MSL1 260C

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

TI Qualification ID: R-CHG-2311-050

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

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