

<b>PCN Number:</b>	20200304003.1 <b>A</b>	<b>PCN Date:</b>	<b>Mar 25, 2020</b>
<b>Title:</b>	ISO7041 Family Design Change and Datasheet Updates		
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	June 5, 2020 <b>June 25, 2020</b>	<b>Estimated Sample Availability:</b>	Date provided at sample request.
<b>Change Type:</b>			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials
<input type="checkbox"/>		<input type="checkbox"/>	Part number change

### PCN Details

**Description of Change:**

**The purpose of this Revision A is to make a correction to the ambient temperature range that was in error on the original PCN notification. In addition, the revision history of the datasheet is included. These changes are highlighted and bolded. The expected first shipment date will be 90 days from this notice (June 25, 2020).**

This notification is to inform of a design change to ISO7041DBQ and ISO7041FDBQ devices. Affected devices are listed in the Product Affected section of this document.

The design change is to enable 1.8V operation across the ambient temperature range of -40C **-55C** to 105C.

The datasheet number will be changing:

	<b>Current</b>	<b>New</b>
<b>Device Family</b>	<b>Datasheet Number</b>	<b>Datasheet Number</b>
ISO7041	SLLSF54C	SLLSF54D

The product datasheet revision D will be available after expiration of this PCN. Although the datasheet will not be published on the TI website for review, the document is available. This product change notification is considered the final datasheet notification. If customers require a preview datasheet before this time or have additional questions regarding the design or datasheet change, please contact [luke.trowbridge@ti.com](mailto:luke.trowbridge@ti.com).

**The product datasheet is updated as seen in the change revision history below:**

## ISO7041 Ultra-Low Power Four-Channel Digital Isolator

### 4 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

Changes from Revision C (January 2020) to Revision D	Page
• Increased supply range to support 1.71 V to 1.89V .....	1
• Increased 3.6 V to 5.5 V support temperature range to 125°C and added -55°C to 105°C temperature range for 1.71 V to 1.89 V support .....	1
• Increased max signaling rate to 4 Mbps .....	1
• Increased maximum data rate to 4 Mbps .....	4
• Added 1.8 V support to Recommended Operating Conditions .....	6
• Changed data rate maximum to 4 Mbps in Recommended Operating Conditions.....	7
• Added temperature range for 1.71 V to 1.89 V supply range .....	7
• Added up to 5.5 V support across entire temperature range .....	7
• Added 1.8 V support in Safety Limiting Values .....	10
• Added 1.8 V Electrical Characteristics .....	16
• Added 1.8 V supply current characteristics .....	16
• Added 1.8 V support to Switching Characteristics .....	17
• Changed minimum pulse width to 250 ns in Switching Characteristics .....	17
• Updated all datasheet plots and curves to support 1.8 V .....	18
• Added 1.8 V support to Functional Table .....	23
• Added 1.8 V support to the Application Information .....	25
• Extended power supply range to support 1.71 V to 1.89 V in Design Requirements .....	28
• Added eye diagrams for full voltage range support and 4 Mbps .....	29

#### Reason for Change:

The current die is limited to a VCC Spec of 2.25V to 5V across temperature. The new die will enable 1.8V VCC across the ambient temperature range of -40°C **-55C** to 105C.

#### Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

Die Rev designator will change as shown in the table and sample label below:

Current	New
Die Rev [2P] <b>B</b>	Die Rev [2P] <b>D</b>

Sample product shipping label (not actual product label)



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

MSL 2 /260C/1 YEAR	SEAL DT
MSL 1 /235C/UNLIM	03/29/04

OPT:  
ITEM: 39  
**LBL: 5A (L)T0:1750**



G4



(1P) **SN74LS07NSR**  
(Q) **2000** (D) **0336**  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483SI2  
(P)  
(2P) REV: (V) 0033317  
(20L) CSO: SHE (21L) CCO:USA  
(22L) ASO: MLA (23L) ACO: MYS

#### Product Affected: Design Change and datasheet updates

ISO7041DBQ	ISO7041DBQR	ISO7041FDBQ	ISO7041FDBQR
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# Qualification Report

Approve Date 23-Feb-2020

## Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: ISO7041ADBQ	QBS Process Reference: UCC21220AD	QBS Package Reference: ISO1050DW	QBS Package Reference: ISO7731FD BQ	QBS Package Reference: ISO7741DBQ	QBS Package Reference: ISO7741FDBQ	QBS Package Reference: ISO7841DW
AC	Autoclave 121C	96 Hours	-	3/231/0	3/231/0	1/77/0	1/77/0	1/77/0	-
CDM	ESD - CDM	1500 V	1/3/0	-	-	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	-	-	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	1/77/0	-	-	-	3/231/0
HBM	ESD - HBM	6000 V	1/3/0	-	-	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	3/230/0	-	-	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	3/231/0	-	-	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	2/154/0	1/77/0	1/77/0	1/77/0	-
HTSL	High Temp Storage Bake 175C	500 Hours	-	3/231/0	-	-	-	-	-
LU	Latch-up	( Per JESD78 ), at Room	1/6/0	-	-	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	2/154/0	1/77/0	1/77/0	1/77/0	3/231/0
TS	Thermal Shock -65/150C	500 Cycles	-	-	3/231/0	-	-	-	-
WBP	Bond Pull	Wires	1/76/0	-	3/228/0	1/76/0	1/76/0	1/76/0	-
WBS	Ball Bond Shear	Wires	1/76/0	-	3/228/0	1/76/0	1/76/0	1/76/0	-

- QBS: Qual By Similarity
- Qual Device ISO7041ADBQ is qualified at LEVEL2-260C
- Device ISO7041ADBQ contains multiple dies.

- 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/>

### Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

## Approve Date 09-Dec-2019

### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: <u>ISO7041FADBQ</u>	QBS Process/ Package Reference: <u>UCC21220AD</u>	QBS Package Reference: <u>ISO7731FDBQ</u>	QBS Package Reference: <u>ISO7741DBQ</u>	QBS Package Reference: <u>ISO7741FDBQ</u>
AC	Autoclave 121C	96 Hours	-	3/231/0	1/77/0	1/77/0	1/77/0
CDM	ESD - CDM	1500 V	1/3/0	-	-	-	-
ED	Electrical Characterization	Per Datasheet Parameters	Pass	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	-	-	-
HBM	ESD - HBM	6000 V	1/3/0	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	3/230/0	-	-	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	1/77/0	1/77/0	1/77/0
HTSL	High Temp Storage Bake 175C	500 Hours	-	3/231/0	-	-	-
LU	Latch-up	(Per JESD78)	1/6/0	-	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	1/77/0	1/77/0	1/77/0
WBP	Bond Pull	Wires	1/76/0	-	1/76/0	1/76/0	1/76/0
WBS	Ball Bond Shear	Wires	1/76/0	-	1/76/0	1/76/0	1/76/0

- QBS: Qual By Similarity

- Qual Device ISO7041FADBQ is qualified at LEVEL2-260C

- Device ISO7041FADBQ contains multiple dies.

- 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/>

**Green/Pb-free Status:**

Qualified Pb-Free(SMT) and Green

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