

PCN Number:	20200622001.2		PCN Date:	June 23, 2020
Title:	AD3421-Q1 Die Revision Change, Marking Change, and Datasheet Updates			
Customer Contact:	PCN Manager		Dept:	Quality Services
Proposed 1st Ship Date:	Dec 23, 2020	Estimated Sample Availability:	Date provided at sample request.	
Change Type:				
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification	<input type="checkbox"/>
<input type="checkbox"/>	Test Site	<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>
<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:

This notification is to inform of a design change to the AD3421-Q1 device family. This is a minor metal spin to remove the requirement to keep SEN at low state while applying Hardware reset.

The Die Revision and the datasheet number will be changing:

Current

New

Die Revision	Datasheet Number	Die Revision	Datasheet Number
A0	SBAS958	A1	SBAS958A

The product datasheet(s) is updated as seen in the change revision history below:



ADC3421-Q1

SBAS958A – DECEMBER 2019 – REVISED JUNE 2020

ADC3421-Q1 Automotive, Quad-Channel, 12-Bit, 25-MSPS Analog-to-Digital Converter

4 Revision History

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

Changes from Original (December 2019) to Revision A	Page
• Changed the <i>Register Initialization</i> section	27
• Changed Figure 50	29

These changes may be reviewed at the datasheet links provided:

<http://www.ti.com/lit/ds/symlink/adc3421-q1.pdf>

Reason for Change:

Improved product performance in certain applications

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

None

Changes to product identification resulting from this PCN:

Topside Symbolization for the affected devices will be as shown below:

QFN8x8:

Current

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+-----+
! 0      !      TI = TI LETTERS
!  AZ3421Q !      YM = YEAR MONTH DATE CODE
!  A0     !      G = PRIMARY CODE FOR SCSAT
!  TI YMG  !      M = SECONDARY CODE FOR SCSAT
!  MLLL G4 !      LLL = ASSY LOT CODE
+-----+
O - PIN 1(MARKED)      10 CHARACTERS MAX LINES 1 & 2
    
```

New

```

+-----+
! 0      !      TI = TI LETTERS
!  AZ3421Q !      YM = YEAR MONTH DATE CODE
!         !      G = PRIMARY CODE FOR SCSAT
!  TI YMG  !      M = SECONDARY CODE FOR SCSAT
!  MLLL G4 !      LLL = ASSY LOT CODE
+-----+
O - PIN 1(MARKED)      10 CHARACTERS MAX LINES 1 & 2
    
```

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

Current	New
Die Rev [2P]	Die Rev [2P]
A0	A1

Sample product shipping label (not actual product label)

Product Affected:

AD3421QRWERQ1	AD3421QRWETQ1
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Automotive New Product Qualification Summary
(As per AEC-Q100 and JEDEC Guidelines)
Approved 18-Jun-2020

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: <u>ADC3421QRWER01</u>	QBS Product Reference: <u>ADC3421QRWER01</u>
Test Group A – Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning Level 3	Level 3-260C	-	3/770/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	-	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0
TC-WBP	A4	MIL-STD883 Method 2011	1	30	Auto Post TC Bond Pull	wires	-	1/30/0
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 150C	1000 Hours	-	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
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	-	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull (Cpk>1.67)	Wires	-	3/90/0
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb	-	1/15/0
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Free	-	1/15/0
PD	C4	JEDEC JESD22-B100 and B108	3	10	Auto Physical Dimensions	Cpk>1.67	-	3/30/0
Test Group D – Die Fabrication Reliability Tests								
EM	D1	JESD61	-	-	Electromigration	-	Completed Per Process Technology Requirements	-
TDDDB	D2	JESD35	-	-	Time Dependant Dielectric Breakdown	-	Completed Per Process Technology Requirements	-
HCI	D3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	-
NBTI	D4	-	-	-	Negative Bias	-	Completed Per	-

Type	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: ADC3421QRWERO1	QBS Product Reference: ADC3421QRWERO1
					Temperature Instability		Process Technology Requirements	
SM	D5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements	-
Test Group E – Electrical Verification Tests								
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	2500 V	-	1/3/0
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	3000 V	1/3/0	-
CDM	E3	AEC Q100-011	1	3	ESD - CDM - Q100	1500 V	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
ED	E5	AEC Q100-009	3	30	Auto Electrical Distributions	Cpk>1.67	3/90/0	3/90/0
Additional Tests								
MSL			-	-	Automotive L3 Powerpad Moisture Sensitivity	Level 3-260C	-	1/12/0

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

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