

<b>PCN Number:</b>	20210416001.2	<b>PCN Date:</b>	April 19, 2021
<b>Title:</b>	AMC1302-Q1 Design Change and Datasheet Update		
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Oct 19, 2021	<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 type="checkbox"/> Assembly Materials	
<input checked="" type="checkbox"/> Design	<input checked="" type="checkbox"/> Electrical Specification	<input type="checkbox"/> Mechanical Specification	
<input type="checkbox"/> Test Site	<input type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	
<input type="checkbox"/> Wafer Bump Site	<input type="checkbox"/> Wafer Bump Material	<input type="checkbox"/> Wafer Bump Process	
<input type="checkbox"/> Wafer Fab Site	<input type="checkbox"/> Wafer Fab Materials	<input type="checkbox"/> Wafer Fab Process	
	<input type="checkbox"/> Part number change		

### PCN Details

#### Description of Change:

This notification is to inform of a design change to the AMC1302-Q1 device. Affected devices are listed in the Product Affected section of this document.

The design change was implemented to improve EMI, tighten the POR specification and increase the CMTI capabilities.

The datasheet number will be changing:

	Current	New
Product Family	Datasheet Number	Datasheet Number
AMC1302-Q1	SBAS920	<a href="#">SBAS920A</a>

The product datasheet(s) is being updated as summarized below:



AMC1302-Q1  
SBAS920A – OCTOBER 2018 – REVISED APRIL 2021

## AMC1302-Q1 Precision, ±50-mV Input, Reinforced Isolated Amplifier

### 4 Revision History

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

Changes from Revision * (October 2018) to Revision A (April 2021)	Page
• Updated the numbering format for tables, figures, and cross-references throughout the document .....	1
• Changed VDE certificate in <i>Safety-related certifications</i> Features bullet from DIN V VDE V 0884-11 (VDE V 0884-11) to DIN VDE V 0884-11 .....	1
• Changed CMTI specification from 140 kV/μs (typ), 70 kV/μs (min) to 100 kV/μs (min) in Features section.....	1
• Changed C <sub>IO</sub> from ~1 pF to ~1.5 pF .....	6
• Changed V <sub>OS</sub> from -100 μV / ±10 μV / 100 μV to -50 μV / ±2.5 μV / 50 μV (min / typ / max).....	8
• Changed E <sub>G</sub> from -0.3% / ±0.05% / 0.3% to -0.2% / ±0.04% / 0.2% (min / typ / max) .....	8
• Changed TCE <sub>G</sub> from -50 ppm/°C / ±15 ppm/°C / 50 ppm/°C to -35 ppm/°C / ±3 ppm/°C / 35 ppm/°C (min / typ / max) .....	8
• Changed V <sub>Fail-safe</sub> from -2.6 V / -2.5 V (typ / max) to -2.63 V / -2.57 V / -2.53 V (min / typ / max).....	8
• Changed CMTI from 55 kV/μs / 80 kV/μs to 100 kV/μs, 150 kV/μs (min / typ) .....	8
• Changed VDD1 <sub>POR</sub> from 1.75 V / 2.15 V / 2.7 V to 2.4 V / 2.6 V / 2.8 V (min / typ / max) .....	8
• Changed <i>Timing Diagram</i> .....	9
• Changed <i>Power-Supply Rejection Ratio vs Ripple Frequency</i> figure .....	11

This product change notification is considered the final datasheet notification. The product datasheet revision A will be available after expiration of this PCN. Although the datasheet is not yet published on the TI website for review, the document is available. If customers require a preview datasheet prior to PCN expiration or have additional questions regarding the datasheet change, please contact [r-bucksch@ti.com](mailto:r-bucksch@ti.com).

**Reason for Change:**

EMI Improvement

**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]	Die Rev [2P]
A	B

Sample product shipping label (not actual product label)

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

AMC1302QDWVQ1	AMC1302QDWVRQ1
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**Qualification Report**  
(As per AEC-Q100 and JEDEC Guidelines)

**Approved 29-Mar-2021**

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

Type	#	Test Spec	Min Lot Qty	S/Lot	Test Name / Condition	Duration	Qual Device: <u>AMC1302QDWVRO1</u>	QBS Product Reference: <u>AMC1336QDWVRO1</u>	QBS Process Reference: <u>INA215AQDCKRO1</u>	QBS Process Reference: <u>ISO7741FODWO1</u>	QBS Package Reference: <u>AMC1302QDWVRO1</u>	QBS Package Reference: <u>AMC1311BODWVO1</u>
<b>Test Group A – Accelerated Environment Stress Tests</b>												
PC	A1	JED EC J-STD-020 JES D22 -	3	77	Automotive Preconditioning Level 2	Level 2-260C	-	-	3/948/0	3/1304/0	-	-

Type	#	Test Spec	Min Lot Qty	S/Lot	Test Name / Condition	Duration	Qual Device: <u>AMC1302QD</u> <u>WVRO1</u>	QBS Product Reference: <u>AMC1336</u> <u>QDVVRO</u> <u>1</u>	QBS Process Reference: <u>INA215AQ</u> <u>DCKRO1</u>	QBS Process Reference: <u>ISO7741FQ</u> <u>DWO1</u>	QBS Package Reference: : <u>AMC1302OD</u> <u>WVRO1</u>	QBS Package Reference: <u>AMC1311BOD</u> <u>WVO1</u>
		A113										
PC	A1	JED EC J- STD -020 JES D22 - A11 3	3	77	Automotive Preconditioning Level 3	Level 3-260C	-	3/826/0	-	-	1/276/0	3/898/0
HAST	A2	JED EC JES D22 - A11 0	3	77	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	3/231/0	3/231/0	1/77/0	3/231/0
AC	A3	JED EC JES D22 - A10 2	3	77	Autoclave 121C	96 Hours	-	3/231/0	3/231/0	3/231/0	1/77/0	3/231/0
TC	A4	JED EC JES D22 - A10 4 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	3/231/0	3/231/1 (1)	1/77/0	3/231/0
TC - BP	A4	MIL - STD 883 Method 2011	1	30	Post TC Bond Pull	Wires	-	1/30/0	1/30/0	1/30/0	1/30/0	1/30/0
PTC	A5	JED EC JES D22 - A10 5	1	45	Power Temperature Cycle	1000 Cycles	N/A	-	-	-	-	-

Type	#	Test Spec	Min Lot Qty	S/Lot	Test Name / Condition	Duration	Qual Device: <u>AMC1302QD</u> <u>WVRO1</u>	QBS Product Reference: <u>AMC1336</u> <u>QDWVRO</u> <u>1</u>	QBS Process Reference: <u>INA215AQ</u> <u>DCKRO1</u>	QBS Process Reference: <u>ISO7741FQ</u> <u>DWO1</u>	QBS Package Reference: : <u>AMC1302OD</u> <u>WVRO1</u>	QBS Package Reference: <u>AMC1311BOD</u> <u>WVO1</u>
HTSL	A6	JED EC JES D22 - A10 3	1	45	High Temp Storage Bake 175C	500 Hours	-	1/45/0	1/45/0	3/231/0	1/45/0	3/135/0
<b>Test Group B – Accelerated Lifetime Simulation Tests</b>												
HTOL	B1	JED EC JES D22 - A10 8	3	77	Life Test, 125C	1000 Hours	-	-	3/231/0	3/231/0	-	-
HTOL	B1	JED EC JES D22 - A10 8	3	77	Life Test, 150C	408 Hours	-	3/231/0	-	-	1/77/0	3/231/0
ELFR	B2	AE C Q10 0- 008	3	800	Early Life Failure Rate, 125C	48 Hours	-	-	3/2400/0	3/2400/0	-	-
EDR	B3	AE C Q10 0- 005	3	77	NVM Endurance, Data Retention, and Operational Life	-	N/A	-	-	-	-	-
<b>Test Group C – Package Assembly Integrity Tests</b>												
WBS	C1	AE C Q10 0- 001	1	30	Wire Bond Shear (Cpk>1.67)	Wires	-	3/90/0	1/30/0	3/228/0	1/30/0	1/30/0
WBP	C2	MIL - STD 883 Met hod 201 1	1	30	Wire Bond Pull (Cpk>1.67)	Wires	-	3/90/0	1/30/0	3/228/0	1/30/0	1/30/0
SD	C	JED	1	15	Surface	PB	-	1/15/0	-	-	-	-

Type	#	Test Spec	Min Lot Qty	S/Lot	Test Name / Condition	Duration	Qual Device: <u>AMC1302QD</u> <u>WVRO1</u>	QBS Product Reference: <u>AMC1336</u> <u>QDWVRO</u> <u>1</u>	QBS Process Reference: <u>INA215AQ</u> <u>DCKRO1</u>	QBS Process Reference: <u>ISO7741FQ</u> <u>DWO1</u>	QBS Package Reference: : <u>AMC1302QD</u> <u>WVRO1</u>	QBS Package Reference: <u>AMC1311BOD</u> <u>WVO1</u>
	3	EC JES D22 - B10 2			Mount Solderability			(2)				
SD	C3	JED EC JES D22 - B10 2	1	15	Surface Mount Solderability	PB-free	-	1/15/0 (2)	-	-	-	-
PD	C4	JED EC JES D22 - B10 0 and B10 8	3	10	Auto Physical Dimensions	Cpk> 1.67	-	3/30/0 (3)	-	-	-	3/30/0
LI	C6	JED EC JES D22 - B10 5	1	24	Lead Pull to Destruction	Leads	-	1/24/0	-	-	-	1/24/0
<b>Test Group D – Die Fabrication Reliability Tests</b>												
EM	D1	JES D61	-	-	Electromigration	-	Completed Per Process Technology Requirements	-	-	-	-	-
TDDB	D2	JES D35	-	-	Time Dependent Dielectric Breakdown	-	Completed Per Process Technology Requirements	-	-	-	-	-
HCI	D3	JES D60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	-	-	-	-	-

Type	#	Test Spec	Min Lot Qty	S/Lot	Test Name / Condition	Duration	Qual Device: <u>AMC1302QD</u> <u>WVRO1</u>	QBS Product Reference: <u>AMC1336</u> <u>QDWVRO</u> <u>1</u>	QBS Process Reference: <u>INA215AQ</u> <u>DCKRO1</u>	QBS Process Reference: <u>ISO7741FQ</u> <u>DWO1</u>	QBS Package Reference: : <u>AMC1302QD</u> <u>WVRO1</u>	QBS Package Reference: <u>AMC1311BOD</u> <u>WVO1</u>
							nts					
NB TI	D4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements	-	-	-	-	-
SM	D5	-	-	-	Stress Migration	-	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	-	-	1/3/0	1/3/0
HBM	E2	AEC Q100-002	1	3	ESD - HBM - Q100	6000 V	-	-	-	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	1/3/0
LU	E4	AEC Q100-004	1	6	Latch-up	Per AEC-Q100-004	1/6/0	1/6/0	-	1/6/0	1/6/0	1/6/0
ED	E5	AEC Q100-009	3	30	Auto Electrical Distributions	Cpk > 1.67	1/30/0	3/90/0	-	3/90/0	3/90/0	3/90/0

**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

Note (1): One EOS fail discounted per QTS 487131-1.

Note (2): Pb & Pb-Free Solderability data from MSPREL.12.UCD8220.04001.

Note (3): Physical Dimensions data from QID 20171030-123810.

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

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