

<b>PCN Number:</b>	20230426001.1	<b>PCN Date:</b>	April 28, 2023
<b>Title:</b>	Qualification of new Fab site (MIHO8) using qualified Process Technology and TI Malaysia as additional Assembly site for select devices		
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	July 28, 2023	<b>Sample Requests accepted until:</b>	May 28, 2023*

\*Sample requests received after May 28, 2023 will not be supported.

**Change Type:**

<input checked="" type="checkbox"/>	Assembly Site	<input checked="" type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Assembly Materials
<input type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification
<input type="checkbox"/>	Test Site	<input checked="" 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 checked="" 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:**

Texas Instruments is pleased to announce the qualification of a new fab site (MH8) and TI Malaysia as additional Assembly Site for Select Devices listed in the "Product Affected" Section. Additionally, LBC8LVISO has been qualified as an additional process technology.



Material differences are as follows.

Current Fab Site			Additional Fab Site		
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter
DMOS5	HPA07	200 mm	Aizu	HPA07	200 mm
DMOS5	HPA07ISOS	200mm	MH8	LBC8LVISO	200mm

**Construction Differences are noted below:**

	TAI	MLA
Wire type	Au, 0.96 mil	1mil Cu (Die to LF) 0.96mil Au (Die to Die)

**Marking Differences:**

	Current Device Symbolization	New Device Symbolization
**ECAT	Include Value	Remove
TI Bug	Include	Replace with "TI" text
Example		

\*\* - Not all devices necessarily have ECAT information included in the symbolization, but for the ones that do, this information will be removed.



**Changes from March 14, 2023 to April 24, 2023 (from Revision F (April 2020) to Revision G (April 2023))**

	Page
• Changed document title.....	1
• Changed <i>Features</i> section: Changed, deleted, and reorganized bullets.....	1
• Changed isolation standard from DIN VDE V 0884-11 (VDE V 0884-10) to DIN EN IEC 60747-17 (VDE 0884-17) and updated the <i>Insulation Specifications</i> and <i>Safety-Related Certifications</i> tables accordingly.....	1
• Deleted last bullet from <i>Applications</i> section.....	1
• Changed <i>Description</i> section to include common-mode decoupling capacitors as a known best practice.....	1
• Changed pin names VINP to INP, VINN to INN, VOUTP to OUTP, and VOUTN to OUTN throughout document.....	4
• Changed <i>Description</i> column and added footnotes to <i>Pin Functions</i> table.....	4
• Changed CDM ESD standard from JESD22-C101 to JDEC JS-002 .....	5
• Changed PD from 81.4 mW to 99 mW.....	6
• Changed PD1 (VDD1 = 3.3 V) from 24.85 mW to 31 mW.....	6
• Changed PD1 (VDD1 = 5.5 V) from 45.65 mW to 54 mW.....	6
• Changed PD2 (VDD2 = 3.3 V) from 20.16 mW to 26 mW.....	6
• Changed PD2 (VDD2 = 5.5 V) from 35.75 mW to 45 mW.....	6
• Changed DTI from $\geq 0.027$ mm to $\geq 0.021$ mm in <i>Insulation Specifications</i> table.....	7
• Changed IDD1 ( $3.0\text{ V} \leq \text{VDD1} \leq 3.6\text{ V}$ ) from 5.0 mA (typ) / 6.9 mA (max) to 6.3 mA (typ) / 8.5 mA (max).....	9
• Changed IDD1 ( $4.5\text{ V} \leq \text{VDD1} \leq 5.5\text{ V}$ ) from 5.9 mA (typ) / 8.3 mA (max) to 7.2 mA (typ) / 9.8 mA (max).....	9
• Changed IDD2 ( $3.0\text{ V} \leq \text{VDD2} \leq 3.6\text{ V}$ ) from 4.4 mA (typ) / 5.6 mA (max) to 5.3 mA (typ) / 7.2 mA (max).....	9
• Changed IDD2 ( $4.5\text{ V} \leq \text{VDD2} \leq 5.5\text{ V}$ ) from 4.8 mA (typ) / 6.5 mA (max) to 5.9 mA (typ) / 8.1 mA (max).....	9
• Changed <i>Timing Diagram</i> section.....	10
• Changed <i>Overview</i> section.....	19
• Changed <i>Functional Block Diagram</i> image.....	19
• Changed the <i>Analog Input</i> section.....	19
• Added the <i>Isolation Channel Signal Transmission</i> section.....	20
• Added <i>Analog Output</i> section, deleted <i>Fail-Safe Output</i> section.....	21
• Changed <i>Device Functional Modes</i> section.....	21

The datasheet number will be changing.

Device Family	Change From:	Change To:	URL
AMC1301	SBAS667F	SBAS667G	<a href="http://www.ti.com/product/AMC1301">http://www.ti.com/product/AMC1301</a>

**Reason for Change:**

Continuity of supply.

- 1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties
- 2) Maximize flexibility within our Assembly/Test production sites.
- 3) Cu is easier to obtain and stock

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

None

**Impact on Environmental Ratings**

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.

RoHS	REACH	Green Status	IEC 62474
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change

**Changes to product identification resulting from this PCN:**

**Fab Site Information:**

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
DMOS5	DM5	USA	Dallas
<b>MIHOS</b>	<b>MH8</b>	<b>JPN</b>	<b>Ibaraki</b>
<b>AIZU</b>	<b>CU2</b>	<b>JPN</b>	<b>Aizuwakamatsu-shi</b>

**Assembly Site Information:**

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
TAI	TAI	TWN	Chung Ho, New Taipei City
<b>MLA</b>	<b>MLA</b>	<b>MYS</b>	<b>Kuala Lumpur</b>

Sample product shipping label (not actual product label)

**Group 1 Product Affected: (Fab site, Data Sheet & MLA A/T)**

AMC1301DWVR	AMC1301SDWVR
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**Group 2 Product Affected: (Fab site, Data Sheet)**

AMC1301DWV	AMC1301SDWV
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**Automotive New Product Qualification Summary  
(As per AEC-Q100 and JEDEC Guidelines)**

Approved 06-April-2023

**Product Attributes**

Attributes	Qual Device:	Qual Device:	QBS Process Reference:	QBS Process Reference:	QBS Package Reference:	QBS Product Reference:	QBS Product Reference:	QBS Product Reference:	QBS Product Reference:
	AMC1301QDWVRQ1 (TAI)	AMC1301QDWVRQ1 (MLA)	INA215AQDCKRQ1	AMC1305M25QDWVRQ1	AMC1336DWV	AMC1300BQDWVRQ1	AMC1300BQDWVRQ1	AMC1300BQDWVRQ1	AMC1311CQDWVRQ1
Automotive Grade Level	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125	-40 to 125
Product Function	Signal Chain	Signal Chain	Signal Chain	Signal Chain	Signal Chain	Signal Chain	Signal Chain	Signal Chain	Signal Chain
Wafer Fab Supplier	AIZU, AIZU, MH8, MH8	AIZU, AIZU, MH8, MH8	AIZU	AIZU, MH8, MH8	AIZU, AIZU, MH8, MH8	DP1DM5, DP1DM5, AIZU	MH8, MH8, AIZU, AIZU	MH8, MH8, AIZU, AIZU	MH8, MH8, AIZU, AIZU
Assembly Site	TAI	MLA	TFME	TAI	TAI	TAI	TAI	MLA	MLA
Package Group	SOIC	SOIC	SOT	SOIC	SOIC	SOIC	SOIC	SOIC	SOIC
Package Designator	DWV	DWV	DCK	DWV	DWV	DW	DWV	DWV	DWV
Pin Count	8	8	6	8	8	16	8	8	8

QBS: Qual By Similarity

Qual Device AMC1301QDWVRQ1 is qualified at MSL3 260C

Qual Device AMC1301QDWVRQ1 is qualified at MSL3 260C

## 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:	Qual Device:	QBS Process Reference:	QBS Process Reference:	QBS Package Reference:	QBS Product Reference:	QBS Product Reference:
								AMC1301QDQWVRQ1 (TAJ)	AMC1301QDQWVRQ1 (MLA)	INA215AQDCKRQ1	AMC1305M25QDWRQ1	AMC1336DWV	AMC1300BQDQWVRQ1	AMC1300BQDQWVRQ1
<b>Test Group A - Accelerated Environment Stress Tests</b>														
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	1 Step	-	-	-	-	3/0/0	1/0/0	-
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	3/231/0	1/77/0	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	-	-	-	-	3/231/0	1/77/0	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	-	-	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	3/231/0	1/77/0	-
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	-	-	-	-	1/5/0	1/5/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	175C	500 Hours	-	-	-	-	1/45/0	1/45/0	-
<b>Test Group B - Accelerated Lifetime Simulation Tests</b>														
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	140C	480 Hours	-	-	-	-	-	1/77/0	-
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	150C	408 Hours	-	-	-	-	-	-	-
ELFR	B2	AEC Q100-008	1	77	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/0	-	-	-	-
ELFR	B2	AEC Q100-008	1	77	Early Life Failure Rate	150C	24 Hours	-	-	-	3/2400/0	-	-	-
<b>Test Group C - Package Assembly Integrity Tests</b>														
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	-	-	-	-	3/90/0	1/30/0	1/30/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	-	-	-	-	3/90/0	1/30/0	1/30/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	-	-	-	-	1/150 (1)	-	-
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	-	-	-	-	1/150 (1)	-	-
PD	C4	JEDEC JESD22-B100 and B108	1	10	Physical Dimensions	Cpk>1.67	-	-	-	-	-	3/100 (2)	-	-
<b>Test Group D - Die Fabrication Reliability Tests</b>														
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	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>														
ESD	E2	AEC Q100-002	1	3	ESD HBM	-	2000 Volts	-	-	-	-	-	-	1/3/0
ESD	E2	AEC Q100-002	1	3	ESD HBM	-	4000 Volts	-	-	-	-	-	1/3/0	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1500 Volts	-	-	-	-	-	1/3/0	-
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	750 Volts	-	-	-	-	-	-	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	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	-	-	3/90/0	1/30/0

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

**Ambient Operating Temperature by Automotive Grade Level:**

Grade 0 (or E): -40C to +150C

Grade 1 (or Q): -40C to +125C

Grade 2 (or T): -40C to +105C

Grade 3 (or I) : -40C to +85C

**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

Note (1): Pb & Pb-Free Solderability data from MSPREL.12.UCD8220.04001

Note (2): Physical Dimensions data from QID 20171030-123810

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

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

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