



Diodes Incorporated Discrete and Analog Semiconductors

Qualification Report - PCN-2196

Manufacturer No.: Additional Qualified (FAB) Wafer Fabrication / (AT) Assembly

Test Sites on selected devices

Revision: 0

Date: July 12, 2016

Qualified By: Diodes Incorporated

Also Applicable To: The part numbers listed in the associated PCN are Qualified by

Similarity (QBS) to the devices included in this report.

Please go to www.diodes.com for current data sheets on

associated devices

Prepared By: Diodes US Document Control Date July 12, 2016

Approved By: Diodes US QRA Department Date July 12, 2016

Europe



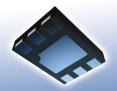


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DIODES INCORPORATED

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DATE: 12th July, 2016

PCN #: 2196

PCN Title: Additional Qualified (FAB) Wafer Fabrication / (AT) Assembly Test Sites

on selected devices

Dear Customer:

This is an announcement of change(s) to products that are currently being offered by Diodes Incorporated.

We request that you acknowledge receipt of this notification within 30 days of the date of this PCN. If you require samples for evaluation purposes, please make a request within 30 days as well. Otherwise, samples may not be built prior to this change. Please refer to the implementation date of this change as it is stated in the attached PCN form. Please contact your local Diodes sales representative to acknowledge receipt of this PCN and for any sample requests.

The changes announced in this PCN will not be implemented earlier than 90 days from the notification date stated in the attached PCN form.

Previously agreed upon customer specific change process requirements or device specific requirements will be addressed separately.

For questions or clarification regarding this PCN, please contact your local Diodes sales representative.

Sincerely,

Diodes Incorporated PCN Team



PRODUCT CHANGE NOTICE

PCN-2196 REV 00

Notification Date:	Implementation Date:	Product Family:	Change Type:	PCN #:
12 th July, 2016	10 th Oct, 2016	Analog Semiconductors	Additional FAB/AT Sites	2196

TITLE

Additional Qualified (FAB) Wafer Fabrication / (AT) Assembly Test Sites on selected devices

DESCRIPTION OF CHANGE

This PCN is being issued to notify customers that in order to assure continuity of supply, Diodes has qualified additional FAB/AT Sites on selected devices. Full electrical characterization and high reliability testing has been completed on representative part numbers to ensure there is no change to device functionality or electrical specifications in the datasheet.

IMPACT

Continuity of Supply. No change in data sheet parameters and product performance.

PRODUCTS AFFECTED

Please see the parts list below in the following Tables:

- Table 1 Qualify Additional AT Source (HuaDa) Nantong Huada Microelectronics Co., Ltd. Jiangsu, China
- Table 2 Qualify Additional Fab Source (SFAB2) Diodes Shanghai SIM-BCD Semiconductor Manufacturing Co., Shanghai, China and AT Source (SAT) Diodes Incorporated / Shanghai, China
- Table 3 Qualify Additional AT Source (SAT) Diodes Incorporated / Shanghai, China
- Table 4 Qualify Additional AT Source (CAT) Diodes Incorporated / Chengdu, China
- Table 5 Qualify Additional AT Source (UNISEM) UNISEM Chengdu Co., Ltd. Chengdu, China

WEB LINKS					
Manufacturer's Notice:	http://www.diodes.com/quality/pcns				
For More Information Contact:	http://www.diodes.com/contacts				
Data Sheet:	http://www.diodes.com/products				
	DISCLAIMER				

Unless a Diodes Incorporated Sales representative is contacted in writing within 30 days of the posting of this notice, all changes described in this announcement are considered approved.



	Та	able 1 - Qualify Addition	al AT Source (HuaDa)	
AH276Q-PG-B-A	AH276Q-PG-B-B	AH276Q-PG-B-C	AH2984-PG-B	

	Table 2 - Qu	alify Additional Fab Sou	rce (SFAB2) / AT Sourc	e (SAT)	
AP3586AMPTR-G1	AP3586BMPTR-G1	AP3586CMPTR-G1	AP3586AMTR-G1	AP3586BMTR-G1	AP3586CMTR-G1

Table 3 - Qualify Additional AT Source (SAT)							
LM4041CFTA	LM4041DFTA	LM4041DADJFTA					

Table 4 - Qualify Additional AT Source (CAT)								
AL9910AS-13	AL9910A-5S-13	AL9910ASP-13	AL9910A-5SP-13	74LVC1G10W6-7	74LVC1G11W6-7			
74LVC1G57W6-7	74LVC1G58W6-7	74LVC1G97W6-7	74LVC1G98W6-7					

	Та	ble 5 - Qualify Additiona	I AT Source (Unisem)	
AP91350MN1-DT8-7				

Rel Date: 2/10/2016



Description: 74LVC1GXXW6 (XX indicates 10, 11, 57, 58, 97 and 98) Qualification

				Qual Device 1		QBS Device 1	
	Part Number			74LVC1GXXW6		74LVC1GXXW6	
	rait Nullibei			(XX indicates 10, 11, 57, 58, 97 and 98)		(XX indicates 10, 11, 57, 58, 97 and 98)	
	Package			SOT-26		SOT-26	
	Package Size			3.0*2.8*1.15		3.0*2.8*1.15	
	Die Name(s)			A0266A0		A0266A0	
	Wafer FAB		1	Nuvoton		Nuvoton	
	Wafer Diameter		1 1	150 mm		150 mm	
	Bond Type (at Die)		1 1	Ball		Ball	
	Bond Type (at LF)		1 1	Wedge bond		Wedge bond	
	No. of bond over active area		1	6		6	
	Glass Transistion Temp		1 1	110°C		130°C	
	Lead Material Manufacture		1	Pure Tin		ND	
	Header plating (Die Land Area)		1 1	NA(bare copper)		Ag	
	Max Junction Temp		1 1	150°C degree C		150°C degree C	
	Max Thermal resistance Junc (case)		1 1	52°C/W		NA	
	Max Thermal resistance Junc (amibent)		1 1	204°C/W		NA	
	Front Metal Type		1 1	Ti/Al/Si/Cu/TiN		Ti/Al/Si/Cu/TiN	
	Die passivation thickness range		1 1	Oxide 3kA SiN 5kA		Oxide 3kA SiN 5kA	
	No of masks Steps		1 1	13		13	
	Die Size (W/L/Thickness)		1 1	614*373*205um		614*373*205um	
	Die Process / Technology		1 1	CMOS 0.5u 5V LVT 1P3M		CMOS 0.5u 5V LVT 1P3M	
	Die Quantity (eg. Die per package)		1 1	1		1	
	DB Epoxy/Solder Type		1 1	84-1LMISR4		84-1LMISR4	
	Die Attach Material			EPOXY		EPOXY	
	Wire Bond Material (Au, Cu, Al)		1 1	Cu		Au	
	Wire Diameter		1 1	0.8mil		0.7mil	
	Front Metal Thickness		1 1	AlCu 20kA		AlCu 20kA	
	Leadframe Type		1 1	TSOT23-6L R		SOT-26A	
	Leadframe Material		1 1	CDA194		EFTEC-64T	
	Molding Compound Type		1 1	CEL-1700-D3		EME-G700	
	Green Compound (Yes/No)			YES		YES	
	Lead-Free (Yes/No)		1 1	YES		YES	
	Assembly Site		1 1	CAT		SAT	
	FT Test Site		1 1	CAT		SAT	
	DataSheet		1 1	74LVC1G		74LVC1G	
							_
	Realibility Testing						
Test		Duration / Limits	Fail/SS	X = Test Needed	Results	QBS Test Completed	
	Realibility Testing Test Conditions				Pass/Fail	QBS Test Completed	Pass/
	Realibility Testing Test Conditions Bake 125C	24 Hrs	0/154	X	Pass/Fail Pass	X	Pass/
	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH	24 Hrs 168Hrs	0/154 0/154	X X	Pass/Fail Pass Pass	X X	Pass/ Pas Pas
SL1 Pre-cond	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles	0/154 0/154 0/154	X X X	Pass/Fail Pass	X X X	Pass/ Pas Pas
	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH	24 Hrs 168Hrs 3 cycles 168 Hrs	0/154 0/154 0/154 0/77	X X X QBS to Device 1	Pass/Fail Pass Pass	X X X X	Pass/ Pass/ Pass/ Pass/ Pass/ Pass/ Pass/
SL1 Pre-cond	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs	0/154 0/154 0/154 0/77 0/77	X X X QBS to Device 1 QBS to Device 1	Pass/Fail Pass Pass	X X X X	Pass/ Pass/ Pass/ Pass/ Pass/ Pass/ Pass/
SL1 Pre-cond HTOL	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 QBS to Device 1	Pass/Fail Pass Pass Pass	X X X X X X	Pass/ Pass/ Pass Pass Pass Pass Pass Pas
SL1 Pre-cond	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles	0/154 0/154 0/154 0/177 0/77 0/77 0/77	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X	Pass/Fail Pass Pass Pass Pass	X X X X X X	Pass/
SL1 Pre-cond HTOL TC	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X	Pass/Fail Pass Pass Pass Pass Pass Pass	X X X X X X X	Pass/ Pass/ Pass Pass Pass Pass Pass Pas
HTOL TC HAST	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs	0/154 0/154 0/154 0/177 0/77 0/77 0/77 0/77 0/77	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X	Pass/ Pass/ Pass/ Pass Pass Pass Pass Pa
SL1 Pre-cond HTOL TC	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X	Pass/
HTOL TC HAST	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X	Pass/ Pais Pai
HTOL TC HAST HTSL	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Pass/ Pass/ Pass/ Pass Pass Pass Pass Pa
HTOL TC HAST HTSL Latch-up	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C JESD78	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Pass/ Pass/ Pass/ Pass/ Pass/ Pass Pass
HTOL TC HAST HTSL	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C JESD78 HBM (AEC-Q100-002)	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Pass/
HTOL TC HAST HTSL Latch-up ESD	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003)	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X QBS to Device 1	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Pass/Pass/Pass/Pass/Pass/Pass/Pass/Pass
HTOL TC HAST HTSL Latch-up ESD Die Shear	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD-750 (2017)	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Pass/
HTOL TC HAST HTSL Latch-up ESD Die Shear WBP	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD-750 (2017) MIL-STD83-2011	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 500 Cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66 Cpk>1.66	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Pass/ Pass/ Pass/ Pass/ Pass Pass Pass P
HTOL TC HAST HTSL Latch-up ESD Die Shear WBP WBS	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD-750 (2017) MIL-STD883-2011 JESD22-B116B	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66 Cpk>1.66 Cpk>1.66	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Pass/ Pass/ Pass/ Pass/ Pass Pass Pass P
HTOL TC HAST HTSL Latch-up ESD Die Shear WBP WBS PD	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD-750 (2017) MIL-STD883-2011 JESD22-B116B JESD22-B100B	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66 Cpk>1.66 Cpk>1.66 Package Outline	0/154 0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Pass/ Pass/ Pass/ Pass/ Pass Pass Pass P
HTOL TC HAST HTSL Latch-up ESD Die Shear WBP WBS	Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 100% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD-750 (2017) MIL-STD883-2011 JESD22-B116B	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66 Cpk>1.66 Cpk>1.66	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	X X X X QBS to Device 1 QBS to Device 1 QBS to Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X X X X X X X X X X X X X	Resu Pass/ Pass Pass Pass Pass Pass Pass Pas

Approved By: Hiwen Hu 2/12/15



Description: AP3585/AP3586A SOP8 Qualification

	Part Number			AP3585MTR-G1/AP3586AMTR-G1		AP3585MPTR-G1	1
	Package		1	SOP-8L		SOP-8-EP	
	Package Size		1	4.9*6.0*1.6		4.9*6.0*1.6	1
	Die Name(s)		1	BN013AA-2		BN013AA-2	1
	Wafer FAB		1	BCD FAB2			1
						BCD FAB2	-
	Wafer Diameter			6		6	
	Bond Type (at Die)			ball		ball	
	Bond Type (at LF)			wedge		wedge	
	No. of bond over active area			4		4	
	Glass Transistion Temp			130℃		130℃	
	Lead Material Manufacture			NBKQ		NBKQ	1
	Header plating (Die Land Area)			Ag		Ag	
	Max Junction Temp		1	150℃		150°C	1
	Max Thermal resistance Junc (case)		1	22 ℃/w		22℃/w	1
	Max Thermal resistance Junc (amibent)		1	70°C/w		70°C/w	1
	Front Metal Type			AL/CU		AL/CU	1
	Die passivation thickness range			1u		1u	
	No of masks Steps		1	14		14	
	Die Size (W/L/Thickness)		1	1840*1410*250		1840*1410*250	1
	Die Process / Technology		1	BCD 1.2U		BCD 1.2U	1
	Die Quantity (eg. Die per package)		1	1		1	1
	DB Epoxy/Solder Type		1	Ероху		Ероху	1
	Die Attach Material			84-1LMISR4		84-1LMISR4	1
	Wire Bond Material (Au, Cu, Al)			Cu		Cu	-
	Wire Diameter			1.0mil		1.0mil	1
	Front Metal Thickness			1.5um		1.5um	1
	Leadframe Type			SOIC-8(K)		SOIC8L-EP	1
	Leadframe Material			CDA194FH		CDA194FH	1
	Molding Compound Type			EME-G600		EME-G600	1
	Green Compound (Yes/No)			Yes		Yes	1
	Lead-Free (Yes/No)			Yes		Yes	-
	Assembly Site			SAT		SAT	
	Assembly Site Test Site			SAT SAT		SAT SAT	1
	Assembly Site Test Site DataSheet			SAT		SAT	
	Assembly Site Test Site			SAT SAT		SAT SAT	
Test	Assembly Site Test Site DataSheet	Duration / Limits	Fail/SS	SAT SAT	Results Pass/Fail	SAT SAT	Results Pass/Fai
	Assembly Site Test Site DataSheet Realibility Testing Test Conditions	Limits		SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed	-	SAT SAT AP3585D1.0 QBS Test Completed	
	Assembly Site Test Site DataSheet Realibility Testing	•	0/154	SAT SAT AP3585 D1.0/AP3586A D1.2	Results Pass/Fail	SAT SAT AP3585D1.0	Results Pass/Fai
MSL3 Pre-	Assembly Site Test Site DataSheet Realibility Testing Test Conditions	Limits 24 Hrs 168Hrs	0/154	SAT	-	SAT SAT AP3585D1.0 QBS Test Completed	
MSL3 Pre-	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C	Limits 24 Hrs	0/154	SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed	Pass	SAT SAT AP3585D1.0 QBS Test Completed X	Pass
MSL3 Pre-	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH	Limits 24 Hrs 168Hrs	0/154 0/154 0/154 0/77	SAT	Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X	Pass Pass
MSL3 Pre- cond	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C	Limits 24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs	0/154 0/154 0/154 0/77 0/77	SAT	Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X	Pass Pass Pass
MSL3 Pre- cond HTOL	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs	0/154 0/154 0/154 0/77 0/77 0/77	SAT	Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X	Pass Pass Pass Pass Pass
MSL3 Pre- cond	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles	0/154 0/154 0/154 0/77 0/77 0/77 0/77	SAT	Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass
MSL3 Pre- cond HTOL	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs	0/154 0/154 0/154 0/77 0/77 0/77	SAT SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1	Pass Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Pre- cond HTOL TC HAST	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77	SAT	Pass Pass Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Pre- cond HTOL	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77	SAT	Pass Pass Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Pre- cond HTOL TC	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	SAT	Pass Pass Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Precond HTOL TC HAST	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77	SAT	Pass Pass Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Precond HTOL TC HAST	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias	Limits 24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	SAT SAT SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed X X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1 X X X X X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Precond HTOL TC HAST HTSL	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C	Limits 24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	SAT SAT SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed X X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1 X X X X X X X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Precond HTOL TC HAST HTSL Latch-up	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78	Limits 24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 1000 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	SAT SAT SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed X X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1 X X X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1 X X X X X QBS TO QBS decice 1	Pass Pass Pass Pass Pass Pass Pass Pass	SAT SAT SAT AP3585D1.0 QBS Test Completed X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Precond HTOL TC HAST HTSL Latch-up	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002)	Limits 24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 1000 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/6 0/3	SAT SAT SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed X X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1 X X X X QBS TO QBS decice 1	Pass Pass Pass Pass Pass Pass Pass Pass	SAT	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Precond HTOL TC HAST HTSL Latch-up ESD	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003)	Limits 24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 1000 cycles 96 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/76 0/3 0/3	SAT SAT SAT SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1 X X X X X QBS TO QBS decice 1	Pass Pass Pass Pass Pass Pass Pass Pass	SAT	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Precond HTOL TC HAST HTSL Latch-up ESD WBP WBS	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD883-2011 JESD22-B116B	Limits 24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66 Cpk>1.66	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/6 0/3 0/3 0/30	SAT SAT SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed X X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1 X X X X X X X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	SAT	Pass Pass Pass Pass Pass Pass Pass Pass
MSL3 Precond HTOL TC HAST HTSL Latch-up ESD WBP	Assembly Site Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD883-2011	Limits 24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/6 0/3 0/3 0/30	SAT SAT SAT SAT SAT AP3585 D1.0/AP3586A D1.2 X = Test Needed X X X X QBS TO QBS decice 1 QBS TO QBS decice 1 QBS TO QBS decice 1 X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	SAT	Pass Pass Pass Pass Pass Pass Pass Pass



Description: AP3585/AP3586A Qualification

				Qual Device 1		Qual Device 2	
	Part Number			AP3585MPTR-G1		AP3586AMPTR-G1	
	Package			SOP-8-EP		SOP-8-EP	
	Package Size			4.9*6.0*1.6		4.9*6.0*1.6	
	Die Name(s)			BN013AA-2		BN013AA-2	
	Wafer FAB			BCD FAB2		BCD FAB2	
	Wafer Diameter			6		6	
	Bond Type (at Die)			ball		ball	
	Bond Type (at LF)			wedge		wedge	
	No. of bond over active area			4		4	
	Glass Transistion Temp			130℃		130℃	
	Lead Material Manufacture			NBKQ		NBKQ	
	Header plating (Die Land Area)					Ag	
	Max Junction Temp			Ag 150℃		Ag 150℃	
	,						
	Max Thermal resistance Junc (case)			22℃/w		22℃/w	
	Max Thermal resistance Junc (amibent)			70℃/w		70°C/w	
	Front Metal Type			AL/CU		AL/CU	
	Die passivation thickness range			1u		1u	
	No of masks Steps			14		14	
	Die Size (W/L/Thickness)			1840*1410*250		1840*1410*250	
	Die Process / Technology			BCD 1.2U		BCD 1.2U	
	Die Quantity (eg. Die per package)			1		1	
	DB Epoxy/Solder Type			Ероху		Ероху	
	Die Attach Material			84-1LMISR4		84-1LMISR4	
	Wire Bond Material (Au, Cu, Al)			Cu		Cu	
	Wire Diameter			1.0mil		1.0mil	
	Front Metal Thickness			1.5um		1.5um	
	Leadframe Type			SOIC8L-EP		SOIC8L-EP	
	Leadframe Material			CDA194FH		CDA194FH	
	Molding Compound Type			EME-G600		EME-G600	
	Green Compound (Yes/No)			Yes		Yes	
	Lead-Free (Yes/No)			Yes		Yes	
	Assembly Site			SAT		SAT	
	Test Site			SAT		SAT	
	DataSheet			AP3585 D1.0		AP3586A B C D1.2	
				711 3303 121.0		711 33007 _B_C B1.2	
	Realibility Testing	_					
Test	Test Conditions	Duration / Limits	Fail/SS	X = Test Needed	Results Pass/Fail	QBS Test Completed	Results Pass/Fa
MSL3 Pre- cond	Bake 125C	24 Hrs	0/154	Х	Pass	QBS to Device 1	Pass
	Soak 85C, 85% RH	168Hrs	0/154	Х	Pass	QBS to Device 1	Pass
	IR reflow 260C	3 cycles	0/154	X	Pass	QBS to Device 1	Pass
HTOL	Tj>125C, 100% Vcc	168 Hrs	0/77	X	Pass	QBS to Device 1	Pass
=	., ====, 200,0 100	500 Hrs	0/77	X	Pass	QBS to Device 1	Pass
		1000 Hrs	0/77	X	Pass	QBS to Device 1	Pass
TC	-65C-150C	500 cycles	0/77	X	Pass	QBS to Device 1	Pass
	030 1300	1000 cycles	0/77	X	Pass	QBS to Device 1	Pass
HAST	130C, 85%RH 33.3 psia 80% Bias	96 Hrs	0/77	X	Pass	QBS to Device 1	Pass
HTSL	150C, 65%KH 55.5 psid 60% bids	168 Hrs	0/77	X	Pass	QBS to Device 1	Pass
IIIJL	1300	500 Hrs	0/77	X	Pass	QBS to Device 1	Pass
		1000 Hrs	0/77	X	Pass		Pass
Latch up	JESD78		0///			QBS to Device 1	
Latch-up		100mA		X	Pass	QBS to Device 1	Pass
ESD	HBM (AEC-Q100-002)	+-2KV	0/3	X	Pass	QBS to Device 1	Pass
	MM (AEC-Q100-003)	+-200V	0/3	X	Pass	QBS to Device 1	Pass
D' . C'	CDM (AEC-Q100-011)	+-750V	0/3	X	Pass	X	Pass
Die Shear	MIL-STD-750 (2017)	Cpk>1.66	0/30	X	Pass	QBS to Device 1	Pass
WBP	MIL-STD883-2011	Cpk>1.66	0/30	Х	Pass	QBS to Device 1	Pass
WBS	JESD22-B116B	Cpk>1.66	0/30	Х	Pass	QBS to Device 1	Pass
Char	-40C, 25C, 90C	5 Seconds	0/10	Χ	Pass	QBS to Device 1	Pass
Summary: ubmitted By: Approved By:	DaQing Xu, 2014/05/06 DaQing Xu, 2014/05/06						



Description: AP3586B_C/A3585A_B_C Qualification

				Qual Device 1		Qual Device 2		Qual Device 3		QBS Device 1	
	Part Number			AP3585AMPTR-G1		AP3585BMPTR-G1,AP3585CMPTR- G1		AP3586BMPTR-G1,AP3586CMPTR-G1		AP3585MPTR-G1,AP3586AMPTR- G1	
	Package			SOP-8-EP		SOP-8-EP		SOP-8-EP		SOP-8-EP	
	Package Size		1	4.9*6.0*1.6		4.9*6.0*1.6		4.9*6.0*1.6	†	4.9*6.0*1.6	
	Die Name(s)			BN013AC-2		BN013AD-2		BN013AB-2	†	BN013AA-2	
	Wafer FAB			BCD FAB2		BCD FAB2		BCD FAB2	†	BCD FAB2	
_	Wafer Diameter			6		6		6	+	6	
	ř								4		
	Bond Type (at Die) Bond Type (at LF)			ball wedge		ball		ball wedge	4	ball	
	No. of bond over active area			wedge 4		wedge 4		wedge 4	4	wedge 4	
	Glass Transistion Temp		1	130°C		130℃		130°C	+	130°C	
	Lead Material Manufacture			NBKQ		NBKQ		NBKO	†	NBKQ	
	Header plating (Die Land Area)			Ag		Ag		Ag	†	Ag	
	Max Junction Temp			150°C		150°C		150℃	†	150°C	
	Max Thermal resistance Junc (case)			22℃/w		22℃/w		22℃/w	Ī	22°C/w	
									-		
	Max Thermal resistance Junc (amibent)			70°C/w		70°C/w		70℃/w		70°C/w	
	Front Metal Type		ł	AL/CU		AL/CU		AL/CU	1	AL/CU	
	Die passivation thickness range			1u		1u		1u		1u	
	No of masks Steps			14		14		14	1	14	
	Die Size (W/L/Thickness)		I	1840*1410*250		1840*1410*250		1840*1410*250	4	1840*1410*250	
	Die Process / Technology			BCD 1.2U		BCD 1.2U		BCD 1.2U		BCD 1.2U	
	Die Quantity (eg. Die per package)			1		1		1	Ī	1	
	DB Epoxy/Solder Type			Ероху		Ероху		Ероху		Ероху	
	Die Attach Material			84-1LMISR4		84-1LMISR4		84-1LMISR4	Ī	84-1LMISR4	
	Wire Bond Material (Au, Cu, Al)			Cu		Cu		Cu	†	Cu	
	Wire Diameter		1	1.0mil		1.0mil		1.0mil	†	1.0mil	
	Front Metal Thickness		1	1.5um		1.5um		1.5um	†	1.5um	
_	Leadframe Type		1	SOIC8L-EP		SOIC8L-EP		SOIC8L-EP	+	SOIC8L-EP	
	Leadframe Material		1	CDA194FH		CDA194FH		CDA194FH	†	CDA194FH	
	Molding Compound Type			EME-G600		EME-G600		EME-G600	†	EME-G600	
	Green Compound (Yes/No)		-	Yes		Yes		Yes	4	Yes	
	Lead-Free (Yes/No)			Yes		Yes		Yes	+	Yes	
	Assembly Site		1	SAT		SAT		SAT	+	SAT	
	Test Site			SAT		SAT		SAT	†	SAT	
	DataSheet		1	AP3585A B C R1.2		AP3585A B C R1.2		AP3586A B C D1.2	†	AP3585D1.0	
	Realibility Testing	Duration /									Re
st	Test Conditions	Limits	Fail/SS	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	QBS Test Completed	Pa
Pre- nd	Bake 125C	24 Hrs	0/154	QBS TO QBS Device 1		QBS TO QBS Device 1		QBS TO QBS Device 1		Х	- 1
	Soak 85C, 85% RH	168Hrs	0/154	QBS TO QBS Device 1		QBS TO QBS Device 1		QBS TO QBS Device 1		Х	
	IR reflow 260C	3 cycles	0/154	QBS TO QBS Device 1		QBS TO QBS Device 1		QBS TO QBS Device 1		Х	
	Tj>125C, 100% Vcc	168 Hrs	0/77	QBS TO QBS Device 1		QBS TO QBS Device 1		QBS TO QBS Device 1		X	
OL			0/77	QBS TO QBS Device 1		QBS TO QBS Device 1		QBS TO QBS Device 1		X X	
OL	, .,	500 Hrs		ORC TO ORC Devices 4		ORC TO ORC Desiles 1					
	,	1000 Hrs	0/77	QBS TO QBS Device 1		QBS TO QBS Device 1		QBS TO QBS Device 1		Y	
	-65C-150C	1000 Hrs 500 cycles	0/77 0/77	QBS TO QBS Device 1		QBS TO QBS Device 1		QBS TO QBS Device 1		X X	
2	-65C-150C	1000 Hrs	0/77	QBS TO QBS Device 1 QBS TO QBS Device 1		QBS TO QBS Device 1 QBS TO QBS Device 1		QBS TO QBS Device 1 QBS TO QBS Device 1		X X X	
ST	,	1000 Hrs 500 cycles 1000 cycles	0/77 0/77 0/77 0/77	QBS TO QBS Device 1 QBS TO QBS Device 1 QBS TO QBS Device 1		QBS TO QBS Device 1 QBS TO QBS Device 1 QBS TO QBS Device 1		QBS TO QBS Device 1 QBS TO QBS Device 1 QBS TO QBS Device 1		Х	
ST	-65C-150C	1000 Hrs 500 cycles 1000 cycles 96 Hrs	0/77 0/77 0/77	QBS TO QBS Device 1 QBS TO QBS Device 1		QBS TO QBS Device 1 QBS TO QBS Device 1		QBS TO QBS Device 1 QBS TO QBS Device 1		X X	
ST	-65C-150C	1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs	0/77 0/77 0/77 0/77 0/77	QBS TO QBS Device 1		QBS TO QBS Device 1		QBS TO QBS Device 1 QBS TO QBS Device 1 QBS TO QBS Device 1 QBS TO QBS Device 1		X X X	
ST SL	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C	1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS TO QBS Device 1 X	Pass	QBS TO QBS Device 1 X	Pass	QBS TO QBS Device 1 X	Pass	X X X X X	
ST SL	-65C-150C 130C, 85%RH 33.3 psia 80% Blas 150C JESD78 HBM (AEC-Q100-002)	1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/6 0/3	QBS TO QBS Device 1 X X	Pass	QBS TO QBS Device 1 X X X	Pass	QBS TO QBS Device 1 X X	Pass	X X X X X X	
ST SL	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003)	1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV +-200V	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/6 0/3 0/3	QBS TO QBS Device 1 X X X		QBS TO QBS Device 1 X X X X		QBS TO QBS Device 1 X X X X X		X X X X X X X	
ST SL n-up D	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-5TD-750 (2017)	1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/6 0/3 0/3 0/30	QBS TO QBS Device 1 X X X QBS TO QBS Device 1	Pass	QBS TO QBS Device 1 X X X QBS TO QBS Device 1	Pass	QBS TO QBS Device 1 X X X QBS TO QBS Device 1 QBS TO QBS Device 1	Pass	X X X X X X X	
C ST ST SSL Shear BP	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD-750 (2017) MIL-STD-832-011	1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV +-200V cpk-1.66 Cpk>1.66	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS TO QBS Device 1 X X X QBS TO QBS Device 1 QBS TO QBS Device 1 QBS TO QBS Device 1	Pass	QBS TO QBS Device 1 X X X QBS TO QBS Device 1 QBS TO QBS Device 1 QBS TO QBS Device 1	Pass	QBS TO QBS Device 1 X X X QBS TO QBS Device 1 QBS TO QBS Device 1 QBS TO QBS Device 1	Pass	X X X X X X X X X	
C ST SL Sh-up Shear BP BS Sar	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-5TD-750 (2017)	1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/6 0/3 0/3 0/30	QBS TO QBS Device 1 X X X QBS TO QBS Device 1	Pass	QBS TO QBS Device 1 X X X QBS TO QBS Device 1	Pass	QBS TO QBS Device 1 X X X QBS TO QBS Device 1 QBS TO QBS Device 1	Pass	X X X X X X X	



Description: Add additional A/T site (HuaDa) for AH276

				Qual Device 1		QBS Device 1		QBS Device 2	
	Part Number			AH276Q-PG-B-X		ATS276-PG-B-X		AH276Q-PG-B-X	
	Package			SIP-4L(TO-94)		SIP-4L(TO-94)		SIP-4L(TO-94)	
	Package Size			5.22*18.15*1.56 mm		5.22*18.15*1.56 mm		5.22*18.15*1.56 mm	
	Die Name(s)			A0099G0		ATC1179L0		A0099G0	
	Wafer FAB			LSC		LSC		LSC	
	Wafer Diameter			150mm		150mm		150mm	
	Bond Type (at Die)			Ball		Ball		Ball	
	Bond Type (at LF)			Wedge		Wedge		Wedge	
	No. of bond over active area			0		0		0	
	Glass Transistion Temp			135 degree C		165 degree C		135 degree C	
	Header plating (Die Land Area)			Ag		NA		Ag	
	Max Junction Temp			150 degree C		150 degree C		150 degree C	
	Max Thermal resistance Junc (case)			20 degree C/W		185 degree C/W		20 degree C/W	
				146 degree C/W					
				Device mounted on FR-4		07.1		146 degree C/W	
	Max Thermal resistance Junc (amibent)			substate, 2"*2", 2oz,		27 degree C/W		Device mounted on FR-4	
	(copper, double-sided, PC		no heatsink, no air flow		substate, 2"*2", 2oz, copper,	
				boards.				double-sided, PC boards.	
	Front Metal Type			98.5% Al+1.0% Si+0.5%Cu		98.5% Al+1.0% Si+0.5%Cu		98.5% Al+1.0% Si+0.5%Cu	
	Die Conforming Coating			Q1-4399		Q1-4399		N/A	
	Die passivation thickness range			SiO2 (0.6um)		SiO2 (0.6um)		SiO2 (0.6um)	
	, ,			SiN (0.6um)		SiN (0.6um)		SiN (0.6um)	
	No of masks Steps			8		8		8	
	Die Size (W/L/Thickness)			1430*1100*350 (um)		1445*1020*350 um		1430*1100*350 (um)	
	Die Process / Technology			Bipolar/2um/20V/SM		Bipolar/2um/20V/SM		Bipolar/2um/20V/SM	
	Die Quantity (eg. Die per package)			1		1		1	
	DB Epoxy/Solder Type			Ероху		Epoxy		Epoxy	
	Die Attach Material			84-1LMISR4		84-1LMISR4		84-1LMISR4	
	Wire Bond Material (Au, Cu, Al)			Cu		Cu		Au	
	Wire Diameter			1mil		1mil		1.2mil	
	Front Metal Thickness			1.5um		1.5um		1.5um	
	Leadframe Type			TO-94		TO-94		SIP-4L	
	Leadframe Material			KFC		KFC		KFC	
	Molding Compound Type			EK5600G		EK5600G		G600	
	Green Compound (Yes/No)			Yes		Yes		Yes	
	Lead-Free (Yes/No)			Yes		Yes		Yes	
	Assembly Site			HuaDa		HuaDa		SAT	
	FT Test Site			HuaDa		HuaDa		SAT	
	Realibility Test Site			DHC		DHC		DHC	
	DataSheet			AH276Q		ATS276G		AH276Q	
	Realibility Testing			71112700		71102700		7112700	
					5 "				
Test	Test Conditions	Duration / Limits	Fail/SS	X = Test Needed	Results Pass/Fail	QBS Test Completed	Results Pass/Fail	QBS Test Completed	Result Pass/F
HTOL									
HIOL	Tj>125C, 100% Vcc	168 Hrs	0/77	QBS to QBS Device 2		X	Pass	X	Pass
HIOL	Tj>125C, 100% Vcc	500 Hrs	0/77	QBS to QBS Device 2		X	Pass	X	Pass
-	,	500 Hrs 1000 Hrs	0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2		X X	Pass Pass	X X	Pass Pass
TC	Tj>125C, 100% Vcc -65C-150C	500 Hrs 1000 Hrs 500 cycles	0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1		X X X	Pass Pass Pass	X X X	Pass Pass Pass
TC	-65C-150C	500 Hrs 1000 Hrs 500 cycles 1000 cycles	0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 QBS to QBS Device 1		X X X X	Pass Pass Pass Pass	X X X X	Pass Pass Pass Pass
TC HAST	-65C-150C 130C, 85%RH 33.3 psia 80% Bias	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs	0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1		X X X X	Pass Pass Pass Pass Pass Pass	X X X X	Pass Pass Pass Pass Pass
TC	-65C-150C	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs	0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1		X X X X X	Pass Pass Pass Pass Pass Pass Pass	X X X X X	Pas Pas Pas Pas Pas Pas
TC HAST	-65C-150C 130C, 85%RH 33.3 psia 80% Bias	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs	0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1		X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pas Pas Pas Pas Pas Pas Pas Pas Pas
TC HAST HTSL	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1		X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X	Pas Pas Pas Pas Pas Pas Pas Pas
TC HAST HTSL Latch-up	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 X	Pass	X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pas Pas Pas Pas Pas Pas Pas Pas
TC HAST HTSL	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002)	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 X X	Pass	X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pas Pas Pas Pas Pas Pas Pas Pas
TC HAST HTSL Latch-up ESD	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003)	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV +-200V	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 X X X	Pass Pass	X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pas Pas Pas Pas Pas Pas Pas Pas
TC HAST HTSL Latch-up ESD Die Shear	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD-750 (2017)	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 X X X X	Pass Pass Pass	X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pas Pas Pas Pas Pas Pas
TC HAST HTSL Latch-up ESD	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003)	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV +-200V	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 X X X	Pass Pass	X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pas Pas Pas Pas Pas Pas Pas Pas
TC HAST HTSL Latch-up ESD Die Shear	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD83-2011 JESD22-B116B	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 X X X X	Pass Pass Pass	X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pas Pas Pas Pas Pas Pas Pas Pas
TC HAST HTSL Latch-up ESD Die Shear WBP	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD-750 (2017) MIL-STD883-2011	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 100MA +-2KV +-200V Cpk>1.66 Cpk>1.66 Package Outline	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 X X X X X X X X X	Pass Pass Pass Pass	X X X X X X X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pas Pas Pas Pas Pas Pas Pas
TC HAST HTSL Latch-up ESD Die Shear WBP WBS	-65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C JESD78 HBM (AEC-Q100-002) MM (AEC-Q100-003) MIL-STD83-2011 JESD22-B116B	500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66 Cpk>1.66 Cpk>1.66	0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 2 QBS to QBS Device 1 X X X X X X X X X	Pass Pass Pass Pass Pass Pass	X X X X X X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pass Pass Pass

Summary: Submitted By: Approved By:



Description: AP91350MN1-DT8-7(W-QFN3020-12)_Unisem Qualification

	300 00 000 000 000 000 000 000			Qual Device 1		QBS Device 1		QBS Device 2		QBS Device 3	
	Part Number			AP91350MN1-DT8-7		AP91351MN1-DT8-7		AP91351MN1-DT8-7		AP91350MNx-DT8-7	
	Package			W-QFN3020-12 (Unisem)		W-QFN3020-12 (Unisem)		W-QFN3020-12 (JCAP/JCET)		W-QFN3020-12 (JCAP/JCET)	
	Package Size			2*3*0.75mm		2*3*0.75mm		2*3*0.75mm		2*3*0.75mm	
	Die Name(s)			A0364F0 (A0364C0 de-zebra)		A0364E0		A0364E0		A0364C0	
	Wafer FAB			Dongbu		Dongbu		Dongbu		Dongbu	
	Wafer Diameter			8"		8"		8"		8"	
	Bond Type (at Die)			Copper Pillar Bump(45um Cu + 35um Sn(after reflow)		Copper Pillar Bump(45um Cu + 35um Sn(after reflow)		Copper Pillar Bump(65um Cu + 25um Sn(before reflow)		Copper Pillar Bump(65um Cu + 25um Sn(before reflow)	
	Bond Type (at LF)			Copper Pillar Bump(45um Cu + 35um Sn(after reflow)		Copper Pillar Bump(45um Cu + 35um Sn(after reflow)		Copper Pillar Bump(65um Cu + 25um Sn(before reflow)		Copper Pillar Bump(65um Cu + 25um Sn(before reflow)	
	No. of bond over active area			13		13		13		13	
	Glass Transistion Temp			135 degree C		135 degree C		135 degree C		135 degree C	
	Lead Material Manufacture Max Junction Temp			Shinko 150 degree C		Shinko 150 degree C		Kangqiang 150 degree C		Kangqiang 150 degree C	
	Front Metal Type			AlCu		AlCu		AlCu		AlCu	
	Die passivation thickness range			Oxide 8kA, SiN 6kA		Oxide 8kA, SiN 6kA		Oxide 8kA, SiN 6kA		Oxide 8kA, SiN 6kA	
	No of masks Steps			24		24		24		24	
	Die Size (W/L/Thickness)			1.89*0.985mm		1.89*0.985mm		1.89*0.985mm		1.89*0.985mm	
	Die Process / Technology			0.18um 30V BCD 1P3M		0.18um 30V BCD 1P3M		0.18um 30V BCD 1P3M		0.18um 30V BCD 1P3M	
	3			thick top-metal 2.75um		thick top-metal 2.75um		thick top-metal 2.75um		thick top-metal 2.75um	
	Die Quantity (eg. Die per package)			1		1		1		1	
	DB Epoxy/Solder Type			Flux		Flux		Flux		Flux	
	Die Attach Material			TACflux-010		TACflux-010		TAC026		TAC026	
	Wire Bond Material (Au, Cu, Al)			Copper Pillar Bump size(90um), Bump		Copper Pillar Bump size(90um), Bump		Copper Pillar Bump size(90um), Bump		Copper Pillar Bump size(90um), Bump	
	Wire Diameter			height(80um)		height(80um)		height(90um)		height(90um)	
	Front Metal Thickness			2.75 um		2.75 um		2.75 um		2.75 um	
	Leadframe Type			421011		409000		QFNFC2x3-13L-E		QFNFC2x3-13L-B	
	Leadframe Material Molding Compound Type			A194 G770HP		A194 G770HP		A194 FH. G770HCD		A194 FH. G770HCD	
	Green Compound (Yes/No)			Yes		Yes		Yes		Yes	
	Lead-Free (Yes/No)			Yes		Yes		Yes		Yes	
	Assembly Site			Unisem		Unisem		JCAP / JCET		JCAP / JCET	
	Test Site			Unisem		Unisem		JCAP / JCET		JCAP / JCET	
	DataSheet			AP91350		AP91351		AP91351		AP91350	
	Realibility Testing										
Test	Test Conditions	Duration / Limits	Fail/SS	X = Test Needed	Results Pass/Fail	QBS Test Completed	Results Pass/Fail	QBS Test Completed	Results Pass/Fail	QBS Test Completed	Results Pass/Fail
MSL1 Pre- cond	Bake 125C	24 Hrs	0/154	QBS to QBS Device 1	Pass	Х	Pass	X	Pass	Х	Pass
	Soak 85C, 85% RH	168Hrs	0/154	QBS to QBS Device 1	Pass	X	Pass	X	Pass	X	Pass
	IR reflow 260C	3 cycles	0/154	QBS to QBS Device 1	Pass	X	Pass	X	Pass	X	Pass
HTOL	Tj>125C, 100% Vcc	168 Hrs	0/77	QBS to QBS Device 1	Pass	X	Pass	X	Pass		
		500 Hrs	0/77	QBS to QBS Device 1	Pass	X	Pass	X	Pass		
		1000 Hrs	0/77	QBS to QBS Device 1	Pass	X	Pass	X	Pass		
TC	-65C-150C	500 cycles	0/77	X	Pass	X	Pass	X	Pass	X	Pass
LIACT	4000 050/ DLL 00 0 '- 000/ E'	1000 cycles	0/77	X ODC to ODC Device 4	Pass	X	Pass	X	Pass	X	Pass
HAST uHAST	130C, 85%RH 33.3 psia 80% Bias 130C, 85%RH 33.3 psia	96 Hrs	0/77 0/77	QBS to QBS Device 1	Pass	X	Pass	X	Pass	Х	Pass
HTSL	130C, 85%RH 33.3 psia 150C	96 Hrs 168 Hrs	0/77	X QBS to QBS Device 1	Pass Pass	X	Pass	X	Pass	X	Pass
1110L	1300	500 Hrs	0/77	QBS to QBS Device 1	Pass	X	Pass	X	Pass	X	Pass
ŀ		1000 Hrs	0/77	QBS to QBS Device 1	Pass	X	Pass	X	Pass	X	Pass
Latch-up	JESD78	100mA	0/6	X	Pass	QBS to Device 2	Pass	X	Pass	X	Pass
ESD	HBM (AEC-Q100-002)	+-2KV	0/3	X	Pass	QBS to Device 2	Pass	X	Pass	X	Pass
	MM (AEC-Q100-003)	+-200V	0/3	X	Pass	QBS to Device 2	Pass	X	Pass	X	Pass
	CDM (AEC-Q100-011)	+-750V	0/3	X	Pass	QBS to Device 2	Pass	X	Pass	X	Pass
PD	JESD22-B100B	Package Outline	0/30	QBS to QBS Device 1	Pass	X	Pass	Х	Pass		
Solderability	245C +0/5C	5 Seconds	0/10	QBS to QBS Device 1	Pass	X	Pass	X	Pass		
Char	-40C, 0C, 25C, 85C	perating Rang	0/30	QBS to QBS Device 3	Pass	QBS to Device 2		X	Pass	X	Pass
Summary: Submitted By:											

Summary: Submitted By: Approved By:



Description: AL9910AS-13 & AL9910A-5S-13 Qualification

	De d Ni selver			Qual Device 1		Qual Device 2		QBS Device 1	
	Part Number			AL9910AS-13		AL9910A-5S-13		AL9910AS-13	
	Package			SOP-8L		SOP-8L		SOP-8L	
	Package Size			4.9*6*1.45mm		4.9*6*1.45mm		4.9*6*1.45mm	
	Die Name(s)			A0272D0		A0272D0		A0272D0	
	Wafer FAB			Maxchip		Maxchip		Maxchip	
	Wafer Diameter			8"		8"		8"	
	Bond Type (at Die)			Ball		Ball		Ball	
	Bond Type (at LF)			Wedge		Wedge		Wedge	
	No. of bond over active area			10		10		10	
	Glass Transistion Temp			130 Deg C		130 Deg C		130 Deg C	
	Lead Material Manufacture			ASM		ASM		ASM	
	Header plating (Die Land Area)			No		No		No	
	Max Junction Temp			125 degreeC		125 degreeC		125 degreeC	
	For A Marriet Toron			Al alloy		Al alloy		Al alloy	
	Front Metal Type			(99.5% Al / 0.5%Cu),		(99.5% Al / 0.5%Cu),		(99.5% AI / 0.5%Cu),	
	Die passivation thickness range			SiN (0.93 um)		SiN (0.93 um)		SiN (0.93 um)	
	No of masks Steps			13		13		13	
	Die Size (W/L/Thickness)			1750um x 1650um x 254um		1750um x 1650um x 254um	1	1750um x 1650um x 254um	
	Die Process / Technology			BCD/3um/700V 1P1M		BCD/3um/700V 1P1M	1	BCD/3um/700V 1P1M	
	Die Quantity (eg. Die per package)			1		1		1	1
	DB Epoxy/Solder Type			Epoxy		Epoxy	1	Ероху	
	Die Attach Material			9005SP		9005SP		84-1LMISR4	1
	Wire Bond Material (Au, Cu, Al)						-		1
				Cu 0.8mil		Cu	-	Cu	
	Wire Diameter			0.8mil		0.8mil		0.8mil	
	Front Metal Thickness			1um		1um		1um	
	Leadframe Type			SOP-8L C		SOP-8L C		SOIC-8 K	
	Leadframe Material			CDA194		CDA194		A194	
	Molding Compound Type			EME-G631K		EME-G631K		EME-G700	
	Green Compound (Yes/No)			Yes		Yes		Yes	
	Lead-Free (Yes/No)			Yes		Yes		Yes	
	Assembly Site			CAT		CAT		SAT	
	Test Site			CAT		CAT		SAT	
	DataSheet			AL9910A		AL9910A		AL9910A	
	Realibility Testing								
Test	Test Conditions	Duration / Limits	Fail/SS	X = Test Needed	Results Pass/Fail	QBS Test Completed	Results Pass/Fail	QBS Test Completed	Res Pass
MSL1 Pre-cond	Bake 125C	24 Hrs	0/154	X	Pass	QBS to Qual Device 1		X	Pa
	Soak 85C, 85% RH	168Hrs	0/154	X	Pass	QBS to Qual Device 1		X	P
	IR reflow 260C	3 cycles	0/154	X	Pass	QBS to Qual Device 1		X	P
HTOL	Tj>125C, 100% Vcc	168 Hrs	0/77	QBS to QBS Device 1	. 200	QBS to QBS Device 1		X	Pa
	., .200, .0070 .00	500 Hrs	0/77	QBS to QBS Device 1		QBS to QBS Device 1		X	P
		1000 Hrs	0/77	QBS to QBS Device 1		QBS to QBS Device 1		X	P
TC	-65C-150C	500 cycles	0/77	X	Pass	QBS to Qb3 Device 1		X	P
10	-000-1000	1000 cycles	0/77	X	Pass	QBS to Qual Device 1	1	X	P
HAST	130C, 85%RH 33.3 psia 80% Bias	96 Hrs	0/77	X	Pass	QBS to Qual Device 1		X	P
HTSL	150C, 85%RH 33.3 psia 80% Bias 150C	168 Hrs	0/77	X	Pass	QBS to Qual Device 1		X	P
ПІЗЬ	1000		0/77				-		
		500 Hrs		X	Pass	QBS to Qual Device 1		X	P
Latela	IEODZ0	1000 Hrs	0/77	X	Pass	QBS to Qual Device 1		X	P
Latch-up	JESD78	100mA	0/6	QBS to QBS Device 1		QBS to QBS Device 1		X	P
ESD	HBM (AEC-Q100-002)	+-2KV	0/3	QBS to QBS Device 1		QBS to QBS Device 1		X	P
	MM (AEC-Q100-003)	+-200V	0/3	QBS to QBS Device 1		QBS to QBS Device 1		X	P
Die Shear	MIL-STD-750 (2017)	Cpk>1.66	0/30	X	Pass	QBS to Qual Device 1		X	Pa
WBP	MIL-STD883-2011	Cpk>1.66	0/30	X	Pass	QBS to Qual Device 1		X	P
WBS	JESD22-B116B	Cpk>1.66	0/30	X	Pass	QBS to Qual Device 1		X	P
PD	JESD22-B100B	Package Outline	0/30	X	Pass	QBS to QBS Device 1			
Solderability	245C +0/5C	5 Seconds	0/10	X	Pass	QBS to QBS Device 1			
Char	-40C, 0C, 25C, 85C	Operating Range	0/30	QBS to QBS Device 1		QBS to QBS Device 1		X	P
Summary:									



Description: AL9910ASP-13 & AL9910A-5SP-13 Qualification

				Qual Device 1		Qual Device 2		QBS Device 1	_
	Part Number			AL9910ASP-13		AL9910A-5SP-13		AL9910ASP-13	
	Package			SO-8-EP		SO-8-EP		SO-8-EP	
	Package Size			4.9*6*1.45mm		4.9*6*1.45mm		4.9*6*1.45mm	
	Die Name(s)			A0272D0		A0272D0		A0272D0	
	Wafer FAB			Maxchip		Maxchip		Maxchip	
	Wafer Diameter			8"		8"		8"	
	Bond Type (at Die)			Ball		Ball		Ball	
	Bond Type (at LF)			Wedge		Wedge		Wedge	
	No. of bond over active area			10		10		10	
	Glass Transistion Temp			130 Deg C		130 Deg C		130 Deg C	
	Lead Material Manufacture			NBKQ/MHT		NBKQ/MHT		NBKQ/MHT	
	Header plating (Die Land Area)			No		No		No	
	Max Junction Temp			125 degreeC		125 degreeC		125 degreeC	
	Frank Madal Time			Al alloy		Al alloy		Al alloy	
	Front Metal Type			(99.5% AI / 0.5%Cu)		(99.5% AI / 0.5%Cu)		(99.5% AI / 0.5%Cu)	
	Die passivation thickness range			SiN (0.93 um)		SiN (0.93 um)		SiN (0.93 um)	
	No of masks Steps			13		13		13	
	Die Size (W/L/Thickness)			1750um x 1650um x 254um		1750um x 1650um x 254um		1750um x 1650um x 254um	
	Die Process / Technology			BCD/3um/700V 1P1M		BCD/3um/700V 1P1M		BCD/3um/700V 1P1M	
	Die Quantity (eg. Die per package)			1		1		1	
	DB Epoxy/Solder Type			Ероху		Ероху		Ероху	
	Die Attach Material			9005SP		9005SP		84-1LMISR4	
	Wire Bond Material (Au, Cu, Al)			Cu	1	Cu		Cu	
	Wire Diameter			0.8mil		0.8mil		0.8mil	
	Front Metal Thickness			1um		1um		1um	
	Leadframe Type			SOP-8L EP C		SOP-8L EP C		SOIC8-EP J	
	Leadframe Material			CDA194		CDA194		A194	
	Molding Compound Type			EME-G631K		EME-G631K		EME-G700	
	Green Compound (Yes/No)			Yes		Yes		Yes	
	Lead-Free (Yes/No)			Yes		Yes		Yes	
	Assembly Site			CAT		CAT			
	Assembly Site			CAT		CAT		SAT SAT	
	Test Site			CAT		CAT		SAT	
	Test Site DataSheet					_			
	Test Site			CAT	Populto	CAT	Poculto	SAT AL9910_A	Po
Test	Test Site DataSheet	Duration / Limits	Fail/SS	CAT	Results Pass/Fail	CAT	Results Pass/Fail	SAT	Re
1000	Test Site DataSheet Realibility Testing	Duration / Limits	Fail/SS 0/154	CAT AL9910A X = Test Needed		CAT AL9910A		SAT AL9910_A QBS Test Completed	
1000	Test Site DataSheet Realibility Testing Test Conditions Bake 125C	24 Hrs	0/154	CAT AL9910A X = Test Needed X	Pass/Fail Pass	CAT AL9910A X = Test Needed QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X	Pas
1000	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH	24 Hrs 168Hrs	0/154 0/154	CAT AL9910A X = Test Needed	Pass/Fail Pass Pass	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X	Pas
MSL1 Pre-cond	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles	0/154 0/154 0/154	CAT AL9910A X = Test Needed X X	Pass/Fail Pass	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X	Pas F
1000	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH	24 Hrs 168Hrs 3 cycles 168 Hrs	0/154 0/154 0/154 0/77	CAT AL9910A X = Test Needed X X X QBS to QBS Device 1	Pass/Fail Pass Pass	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1		SAT AL9910_A QBS Test Completed X X X X	Pas F F
MSL1 Pre-cond	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs	0/154 0/154 0/154 0/77 0/77	CAT AL9910A X = Test Needed X X X QBS to QBS Device 1 QBS to QBS Device 1	Pass/Fail Pass Pass	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to QBS Device 1		SAT AL9910_A QBS Test Completed X X X X X X	Pas F F F
MSL1 Pre-cond	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77	CAT AL9910A X = Test Needed X X X QBS to QBS Device 1	Pass/Fail Pass Pass Pass	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1		SAT AL9910_A QBS Test Completed X X X X X X X	Pas F F F F
MSL1 Pre-cond	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles	0/154 0/154 0/154 0/77 0/77 0/77 0/77	CAT AL9910A X = Test Needed X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X	Pass/Fail Pass Pass Pass Pass	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X	Pas F F F F F
MSL1 Pre-cond HTOL TC	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77	CAT AL9910A X = Test Needed X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to QUal Device 1 QBS to Qual Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X	Pas F F F F F
MSL1 Pre-cond HTOL TC HAST	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs	0/154 0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77	CAT AL9910A X = Test Needed X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X	Pas F F F F F F F F F F F F F F F F F F F
MSL1 Pre-cond HTOL TC	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs	0/154 0/154 0/154 0/177 0/77 0/77 0/77 0/77 0/77 0/77	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Pas FF FF FF FF FF FF FF
MSL1 Pre-cond HTOL TC HAST	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 1000 cycles 168 Hrs 500 Hrs	0/154 0/154 0/154 0/177 0/77 0/77 0/77 0/77 0/77 0/77 0/7	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Pas FF FF FF FF FF FF FF FF FF
MSL1 Pre-cond HTOL TC HAST HTSL	Test Site DataSheet Realibility Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C Tj>125C, 100% Vcc -65C-150C 130C, 85%RH 33.3 psia 80% Bias 150C	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs	0/154 0/154 0/154 0/177 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X	Pas FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
MSL1 Pre-cond HTOL TC HAST HTSL Latch-up	Test Site	24 Hrs 168 Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X QBS to QBS Device 1 X X X X X X X QBS to QBS Device 1	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X	Pas FF
MSL1 Pre-cond HTOL TC HAST HTSL	Test Site	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X QBS to QBS Device 1 QBS to QBS Device 1	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Pas FF
MSL1 Pre-cond HTOL TC HAST HTSL Latch-up ESD	Test Site	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 1200 Hrs 1200 Hrs 1000 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/76 0/3 0/3	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X QBS to QBS Device 1	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1 QBS to QBS Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Pas FF
MSL1 Pre-cond HTOL TC HAST HTSL Latch-up ESD Die Shear	Test Site	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 1000 cycles 1000 cycles 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 100mA +-2KV +-200V Cpk>1.66	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/73 0/3 0/3	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X X X X X X QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1 QBS to QBS Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Pas
MSL1 Pre-cond HTOL TC HAST HTSL Latch-up ESD Die Shear WBP	Test Site	24 Hrs 168 Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 168 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/76 0/3 0/3 0/30	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to QUAL Device 1 QBS to QBS Device 1 QBS to QUAL Device 1 QBS to QBS Device 1 QBS to QBS Device 1 QBS to QUAL Device 1 QBS to QUAL Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Past
MSL1 Pre-cond HTOL TC HAST HTSL Latch-up ESD Die Shear WBP WBS	Test Site	24 Hrs 168 Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/76 0/3 0/3 0/30 0/30	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X QBS to QBS Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Pas
MSL1 Pre-cond HTOL TC HAST HTSL Latch-up ESD Die Shear WBP WBS PD	Test Site	24 Hrs 168Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 500 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/6 0/3 0/3 0/30 0/30 0/30	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X X QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1 QBS to QBS Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Past
MSL1 Pre-cond HTOL TC HAST HTSL Latch-up ESD Die Shear WBP WBS	Test Site	24 Hrs 168 Hrs 3 cycles 168 Hrs 500 Hrs 1000 Hrs 1000 cycles 1000 cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs	0/154 0/154 0/154 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/76 0/3 0/3 0/30 0/30	CAT AL9910A X = Test Needed X X X X QBS to QBS Device 1 QBS to QBS Device 1 QBS to QBS Device 1 X X X X QBS to QBS Device 1 QBS to QBS Device 1 X X X X X X X X QBS to QBS Device 1 X X X X X X X X X X X X X X X X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	CAT AL9910A X = Test Needed QBS to Qual Device 1 QBS to Qual Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1 QBS to QBS Device 1 QBS to Qual Device 1		SAT AL9910_A QBS Test Completed X X X X X X X X X X X X X X X X X X	Past



Approved By:

DaQing Xu, 2014/08/19

Certificate of Design, Construction & Qualification

Description: AP3586B_C/A3585A_B_C Qualification

				Qual Device 1		Qual Device 2		Qual Device 3		QBS Device 1		QBS Device 2	
	Part Number			AP3585AMTR-G1		AP3585BMTR-G1,AP3585CMTR-G1		AP3586BMTR-G1,AP3586CMTR-G1		AP3585MTR-G1,AP3586AMTR-G1		AP3585MPTR-G1,AP3586AMPTR-G1	1
	Package			SOP-8L		SOP-8L		SOP-8L		SOP-8L		SOP-8-EP	1
	Package Size			4.9*6.0*1.6		4.9*6.0*1.6		4.9*6.0*1.6		4.9*6.0*1.6		4.9*6.0*1.6	1
	Die Name(s)			BN013AC-2		BN013AD-2		BN013AB-2		BN013AA-2		BN013AA-2	1
	Wafer FAB			BCD FAB2		BCD FAB2		BCD FAB2		BCD FAB2		BCD FAB2	
	Wafer Diameter			6		6		6		6		6	1
	Bond Type (at Die)			ball		ball		ball	1	ball		ball	1
	Bond Type (at LF)			wedge		wedge		wedge		wedge		wedge	
	No. of bond over active area			4		4		4		4		4	1
	Glass Transistion Temp			130℃		130℃		130℃		130℃		130℃	1
	Lead Material Manufacture			NBKQ		NBKQ		NBKQ		NBKQ		NBKQ	1
	Header plating (Die Land Area)			Ag		Ag		Ag		Ag		Ag	
	Max Junction Temp			150℃		150℃		150℃		150℃		150 ℃	
	Max Thermal resistance Junc (case)			22°C/w		22℃/w		22℃/w		22°C/w		22°C/w	4
	Max Thermal resistance Junc (amibent) Front Metal Type					70℃/w AL/CU			-			70℃/w AL/CU	+
	Die passivation thickness range		-	1u		1u		1u	-	1u		1u	1
	No of masks Steps		-	14		14		14	-	14		14	1
	Die Size (W/L/Thickness)			1840*1410*250		1840*1410*250		1840*1410*250		1840*1410*250		1840*1410*250	1
	Die Process / Technology			BCD 1.2U		BCD 1.2U		BCD 1.2U		BCD 1.2U		BCD 1.2U	1
	Die Quantity (eg. Die per package)			1		1		1		1		1	1
	DB Epoxy/Solder Type			Ероху		Ероху		Ероху		Ероху		Ероху	
	Die Attach Material					84-1LMISR4		84-1LMISR4					1
			-	84-1LMISR4					-	84-1LMISR4		84-1LMISR4	-
	Wire Bond Material (Au, Cu, Al)			Cu		Cu		Cu		Cu		Cu	4
	Wire Diameter			1.0mil		1.0mil		1.0mil	-	1.0mil		1.0mil	-
	Front Metal Thickness			1.5um		1.5um		1.5um		1.5um		1.5um	_
	Leadframe Type			SOIC-8(K)		SOIC-8(K)		SOIC-8(K)		SOIC-8(K)		SOIC8L-EP	4
	Leadframe Material		_	CDA194FH		CDA194FH		CDA194FH		CDA194FH		CDA194FH	_
	Molding Compound Type			EME-G600		EME-G600		EME-G600		EME-G600		EME-G600	
	Green Compound (Yes/No)			Yes		Yes		Yes		Yes		Yes	
	Lead-Free (Yes/No)		-	Yes		Yes		Yes	_	Yes		Yes	-
	Assembly Site		-	SAT SAT		SAT SAT		SAT SAT	-	SAT SAT		SAT SAT	-
	Test Site DataSheet			AP3585A_B_C R1.2		AP3585A B C R1.2		AP3586A B C D1.2	-	AP3585 D1.0/AP3586A D1.2		AP3585 D1.0/AP3586A D1.2	1
				AF3363A_B_C R1.2		AF3383A_B_C R1.2		AF3380A_B_C D1.2		AF3363 D1.0/AF3360A D1.2		AF3363 D1.0/AF3360A D1.2	1
	Realibility Testing				_				_				
Test	Test Conditions	Duration / Limits	Fail/SS	X = Test Needed	Results	X = Test Needed	Results	X = Test Needed	Results	X = Test Needed	Results	QBS Test Completed	Results Pass/Fail
MCI 2 Dua					Pass/Fail		Pass/Fail		Pass/Fail		Pass/Fail		
MSL3 Pre-	Bake 125C	24 Hrs	0/154	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
cond	Soak 30C, 60% RH	192Hrs	0/154	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
	IR reflow 260C	3 cycles	0/154	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
HTOL	Tj>125C, 100% Vcc	168 Hrs	0/77	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	X	PASS
	,	500 Hrs	0/77	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	Х	PASS
		1000 Hrs	0/77	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	X	PASS
TC	-65C-150C	500 cycles	0/77	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
		1000 cycles	0/77	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
HAST	130C, 85%RH 33.3 psia 80% Bias	96 Hrs	0/77	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
HTSL	150C	168 Hrs	0/77	QBS TO QBS Device 1 QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
		500 Hrs	0/77		PASS	QBS TO QBS Device 1	PASS PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS PASS
Latch-up	JESD78	1000 Hrs 100mA	0/77 0/6	QBS TO QBS Device 1 QBS TO QBS Device 1	PASS PASS	QBS TO QBS Device 1 QBS TO QBS Device 1	PASS	QBS TO QBS Device 1 QBS TO QBS Device 1	PASS PASS	X X	PASS PASS	X X	PASS
ESD	HBM (AEC-Q100-002)	+-2KV	0/8	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1 QBS TO QBS Device 1	PASS	X	PASS	X	PASS
230	MM (AEC-Q100-003)	+-200V	0/3	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
Die Shear	MIL-STD-750 (2017)	Cpk>1.66	0/30	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
WBP	MIL-STD883-2011	Cpk>1.66	0/30	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	Х	PASS
WBS	JESD22-B116B	Cpk>1.66	0/30	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	QBS TO QBS Device 1	PASS	X	PASS	X	PASS
Char	-40C, 25C, 90C	5 Seconds	0/10	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	QBS TO QBS Device 2	PASS	X	PASS
Summary:	DaQing Xu,2014/07/25												
Submitted By: Approved By:	Piqin Sun,2014/07/22 DaQing Xu, 2014/08/19												



Description: To add a new A/T site (HuaDa) for AH2984-PG-B

	Part Number			Qual Device 1 AH2984-PG-B	l	QBS Device 1 AH2984-PG-B		QBS Device 2 ATS276-PG-B-X		QBS Device 3 AH277AZ4-CG1		QBS Device 4 MH276	_
	Part Number Package		1	SIP-4L(TO-94)	.	SIP-4L(SIP-4L)		SIP-4L(TO-94)		SIP-4L(TO-94)		SIP-4L(TO-94)	_
	Package Package Size		•	5.22*18.15*1.56 mm		5.22*18.15*1.56 mm		5.22*18.15*1.56 mm		5.22*18.15*1.56 mm		5.22*18.15*1.56 mm	_
	Package Size Die Name(s)		1	5.22*18.15*1.56 mm A0197C0		5.22*18.15*1.56 mm A0197C0		5.22*18.15*1.56 mm ATC1179L0		5.22°18.15°1.56 mm N/A		5.22*18.15*1.56 mm N/A	_
	Wafer FAB		•	LSC		LSC		LSC		BCD		N/A N/A	_
	Wafer Diameter		1	150mm		150mm		150mm		150mm		N/A	_
	Bond Type (at Die)		1	Ball		Ball		Ball		Ball		N/A Ball	_
	Bond Type (at LF)		•	Wedge		Wedge		Wedge		Wedge		Wedge	_
	No. of bond over active area	_	4	vvedge 0		vvedge 0		vveage 0		vedge 0		vveage 0	-
	Glass Transistion Temp		4									N/A	_
			•	135 degree C		135 degree C		165 degree C NA		N/A N/A		N/A N/A	_
	Header plating (Die Land Area		4	Ag		Ag							_
	Max Junction Temp		4	150 degree C		150 degree C		150 degree C		150 degree C		150 degree C N/A	_
	Max Thermal resistance Junc (case)		4	15 degree C/W		15 degree C/W		185 degree C/W		49 degree C/W		N/A	_
				125 degree C/W		125 degree C/W							
	Max Thermal resistance Junc (amibent)			Device mounted on FR-4 substrate,		Device mounted on FR-4 substrate,		27 degree C/W		227 degree C/W		N/A	
	wax memai resistance Junc (ambent)			2"*2", 2oz, copper, double-sided PC		2"*2", 2oz, copper, double-sided PC		no heatsink, no air flow		227 degree C/VV		IN/A	
				boards.		boards.							
	Front Metal Type		1	98.5% Al+1.0% Si+0.5%Cu		98.5% Al+1.0% Si+0.5%Cu		98.5% Al+1.0% Si+0.5%Cu		N/A		N/A	_
			1	SiO2 (0.6um)	-	SiO2 (0.6um)		SiO2 (0.6um)					_
	Die passivation thickness range			SiO2 (0.6um) SiN (0.6um)	l	SiO 2 (0.6um) SiN (0.6um)		SiO2 (0.6um) SiN (0.6um)		N/A		N/A	
	No of masks Steps		1	SIN (U.Bum) 15	l	SIN (0.6um) 15		SIN (U.bum)		N/A		N/A	_
	No of masks Steps Die Size (W/L/Thickness)		1	15 1690*1300*340 (um)	.	15 1690*1300*355 (um)		8 1445*1020*350 um		N/A N/A		980umx1030um (W/L)	-
	Die Size (W/L/Thickness) Die Process / Technology		1	CMOS/1um/40V/15V/2P2M	-	CMOS/1um/40V/15V/2P2M		1445*1020*350 um Bipolar/2um/20V/SM		N/A N/A		980umx1030um (W/L) N/A	_
	Die Process / Technology Die Quantity (eg. Die per package)		1	CMOS/1um/40V/15V/2P2M 1	!	CMOS/1um/40V/15V/2P2M		Bipolar/2um/20V/SM		N/A 1		N/A 1	\rightarrow
		_	4							•			_
	DB Epoxy/Solder Type Die Attach Materia		•	Epoxy 84-1LMISR4		Epoxy 84-1LMISR4		Epoxy 84-1LMISR4		Epoxy 84-1LMISR4		Epoxy 84-1LMISR4	_
		_	4										_
	Wire Bond Material (Au, Cu, Al'	_	4	Au 1.1mil		Au		Cu		Au		Au	_
	Wire Diameter					1.2mil		1mil		1.1mil		1.0mil	_
	Front Metal Thickness		4	1.5um		1.5um		1.5um		N/A		N/A	_
	Leadframe Typ∈			TO-94		SIP-4L		TO-94		TO-94		TO-94	_
	Leadframe Materia			KFC		KFC		KFC		KFC		KFC	_
	Molding Compound Type			EK5600G		G600		EK5600G		EK5600G		EK5600G	
	Green Compound (Yes/No			Yes		Yes		Yes		Yes		Yes	_
	Lead-Free (Yes/No		1	Yes	l	Yes		Yes		Yes		Yes	_
	Assembly Site			HuaDa		SAT		HuaDa		HuaDa		HuaDa	4
	FT Test Site		1	HuaDa	l	SAT		HuaDa		HuaDa		HuaDa	
	Realibility Test Site			DHC		DHC		DHC		BCD		HuaDa	_
	DataSheet			AH2984		AH2984		ATS276G		AH277A		MH276	_
	Realibility Testing												
	, j				Results		Results		Results		Results		_
Test	Test Conditions	Duration / Limits	Fail/SS	X = Test Needed	Pass/Fail		Pass/Fail	QBS Test Completed	Pass/Fail	QBS Test Completed	Pass/Fail	QBS Test Completed	
TOL	Tj>125C, 100% Vcc	168 Hrs	0/77	QBS to QBS Device 1		X	pass	X	pass				-
-	,,	500 Hrs	0/77	QBS to QBS Device 1		X	pass	X	pass				
		1000 Hrs	0/77	QBS to QBS Device 1		X	pass	X	pass				
TC	-65C-150C	500 cycles	0/77	X	pass	X	pass	X	pass	X	pass	Х	
-		1000 cycles	0/77	X	pass			X	pass		1	X	
AST	130C, 85%RH 33.3 psia 80% Bias	96 Hrs	0/77	Ŷ	pass	X	pass	X	pass	X	pass		
TSL	150C	168 Hrs	0/77	X	pass	X	pass	X	pass	X	pass	X	
		500 Hrs	0/77	x X	pass	X	pass	X	pass			X	
		1000 Hrs	0/77	X	pass	X	pass	X	pass			X	
ch-up	JESD78	100mA	0/6	X	pass	X	pass	X	pass				
	HBM (AEC-Q100-002)	+-2KV	0/3	Ŷ	pass	X	pass	X	pass				
		+-200V	0/3	X	pass	X	pass	X	pass				$\overline{}$
		Cpk>1.66	0/30	X	pass	~	puoo	X	pass				_
SD					pass			Ϋ́	pass				\rightarrow
Shear	MIL-STD-750 (2017)		0/30	Y									_
Shear VBP	MIL-STD-750 (2017) MIL-STD883-2011	Cpk>1.66	0/30					X					
Shear WBP WBS	MIL-STD-750 (2017) MIL-STD883-2011 JESD22-B116B	Cpk>1.66 Cpk>1.66	0/30	X	pass			X	pass				\dashv
Shear NBP NBS PD	MIL-STD-750 (2017) MIL-STD883-2011 JESD22-B116B JESD22-B100B	Cpk>1.66 Cpk>1.66 Package Outline	0/30		pass pass			X	pass				
Shear WBP WBS	MIL-STD-750 (2017) MIL-STD883-2011 JESD22-B116B	Cpk>1.66 Cpk>1.66	0/30 0/30 0/10	X X	pass	×	pass						ŧ

DIODES

Grade 0 -40C to +150C ambient operating temperature range Grade 1 -40C to +125C ambient operating temperature range

Grade 2 -40C to +10SC ambient operating temperature range Grade 3 -40C to +8SC ambient operating temperature range Grade 4 -0C to +70C ambient operating temperature range

Description: AEC-Q100 Qualification

M4041CFTA, LM4041DFTA 4041CQFTA, LM4041DQFT TLV431AQFTA, TLV431BQF ZTL431AQFTA LM4040C50QFTA TL431ASA-7 TLV431AF ZTL431AF TLV431AE5 Die qual TLV431AF Die qual TLV431AH6 Die qual Automotive Grade
Package
Package
Package Service
Package Servi 1 SSOT23 3 x 1.4 x 1.1 ZAD06A LM4041N OFAB 150mm Ball Stitch 3 125°C 100% Tin Ag 3.0-8.0um 150°C 380°C/W AlCu0.5% 5000A(+/-500A)SiO2+5000A(+/-2 125°C 100% Tin Ag 3.0-8.0um 150°C 380°C/W AlCu0.5% 5000Å(+/-500Å)Si02 + 5000Å(+/-500Å)Si02 + 5000Å(+/-500Å)Si02 + 5000Å(+/-500Å)Si03 3 120 100% Tin 3.0-8.0um Ag 150°C 380C/W AlCu0.5% 5000A(+/-500A)SiO2+ 3 125°C 100% Tin Ag 3.0-8.0um 150°C 380°C/W 3 125°C 100% Tin Ag 3.0-8.0um 150°C 380°C/W AlCu0.5% 5000Å(+/-500Å)SiO2 + 5000Å(+/-AlCu0.5% 5000Å(+/-500Å)SiO2 + 5000Å(+/-AlCu0.5% 5000Å(+/-500Å)SiO2 + 5000Å(+/-AlSi1%Cu0.5% 5000Å(+/-500Å)SiO2 + 5000Å(+) AlCu0.5% 5000Å(+/-500Å)SiO2 + 5000Å(+/-AlCu0.5% 5000Å(+/-500Å)SiO2 + 5000Å(+/-AlCu0.5% 5000Å(+/-500Å)SiO2 + 5000Å(+/-AlCu0.5% 5000Å(+/-500Å)SiO2 + 5000Å(+/-Die passivation thickness range 500Å)SIN 13 680 x 680 x 203 ZAD 20V Bipolar 500A(47-500A)SIN 13 510 x 540 x 203 ZAD 20V Bipolar 500Å)SIN 13 680 x 680 x 203 ZAD 20V Bipolar 500Å)SIN 13 680 x 680 x 203 ZAD 20V Bipolar 500Å)SIN 13 510 x 540 x 203 ZDH 40V bipolar 500Å)SIN 13 680 x 680 x 203 ZAD 20V Bipolar 500Å)SIN 13 510 x 540 x 203 ZAD 20V Bipolar Die possivation thickness range
No of macis Septs
Die Size (WI/L/Thickness)
Die Process / Technology
Die Quantity (eg. Die per package)
Die Bops/Solder Type
Die Attach Material
Wire Bond Material (Alu, Cu, Al)
Wire Diameter
Front Metal Thickness
Leadframe Type
Leadframe Material
Molding Compound Type
Green Compound (Yes/No)
Lead-Free (Yes/No)
Lead-Free (Yes/No)
Assembly Ste
Test Site
DistSheet 500Å)SIN 500Å)SIN 500Â)SIN 5000Å(+/-500Å)SIN 5000A(+/-500A)siN
133
680 x 680 x 203
2A0 200 kpolar
1 fepoxy
8200T1
Au
2.5um
2.5um
2.0158-82
CEL1070H9SK
Ves:
UNISEM
UNISEM
UNISEM
UNISEM
UNISEM
UNISEM ZAU ZUV Bipolar

1
Epoxy
84-1LMISR4
Cu
20um
2.6um
C1.6um
C 1 Epoxy 84-1LMISR4 1
Eppoxy
84-11MISR4
Cu
20um
2.6um
DLF00648 (SOT23-U)
CDA194
CEL1700HF40SK-D3 Epoxy 84-1LMISR4 Epoxy 84-1LMISR4 Epoxy 84-1LMISR4 Epoxy 84-1LMISR4 Epoxy 8200Ti Epoxy 84-1LMISR4 Cu
20um
2.6um
DLF00648 (S07123-U)
CDA194
CEL1700HF405K-D3
Yes
Yes
SAT Cu 20um 2.6um DLF00648 (SOT23-U) CDA194 CEL1700HF40SK-D3 Yes Cu 20um 2.6um 0.100 2.6um 0.10 Cu
20um
2.6um
2.6um
0.F00648 (S0T23-U)
CDA194
CEL1700HF405K-D3
Yes
Yes
SAT
SAT Cu 20um 2.6um DLF00648 (S0T23-U) CDA194 CEL1700HF405K-D3 Au 25um 2.6um SOT-23R CDA194 KTMC1050G Cu
20um
2.6um
DLF00648 (SOT23-U)
CDA194
CEL1700HF405K-D3
Yes

	Datasneet									D230310		D230312		D23/001		D237001		D230989		D535044		D332088		D533203		D532U88		D332088			4
	Reliability Testing		-																												-
Test	Test Name	Test Conditions	Duration /	limits Test	t Method	Test Group	Lots	Fail/SS	Test Temp	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail								
Test Group A - Accelera	rated Environment Stress Tests																														
MSL1 Pre-cond	Pre-Conditioning	Bake 125C	24 Hr		D22 A113 J-STD-020	A	3 WF	0/154	Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/231	Pass	0/231	Pass	0/231	Pass						
		Soak 85C, 85% RH	168Hr	JEDC.	J-STD-020	A	3 WF	0/154	Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/231	Pass	0/231	Pass	0/231	Pass						
l T		IR reflow 260C	3 cycle	s JEDC.	J-STD-020	A	3 WF	0/154	Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/231	Pass	0/231	Pass	0/231	Pass						
HAST	Highly Accelerated Stress Test	130C, 85%RH 33.3 psia 100% Bias	96 Hr	JESD	D22-A110	A	3 WF	0/77	Room/Hot	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/77	Pass	0/77	Pass	0/77	Pass						
AC	Autoclave	T=121°C 15PSIG 100%RH	96 Hr	JEDD	D22 A102	A	3 WF	0/77	Room/Hot	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/77	Pass	0/77	Pass	0/77	Pass						
TC	Temperature Cycle	-65C-150C (Grade 1)	500 cyc	es JEDD	D22 A104	A	3 WF	0/77	Hot	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/77	Pass	0/77	Pass	0/77	Pass						
		-65C-150C (Grade 1)	1000 cy	les JEDD	D22 A104	A	3 WF	0/77	Hot	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/77	Pass	0/77	Pass	0/77	Pass						
WBP after TC	Wire Bond After Temp Cycle	MIL-STD883-2011	500 & 1000	cycles MIL-ST	TD883-2011	A	3 WF	0/30 bonds	Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/30	Pass	0/30	Pass	0/30	Pass						
HTSL	High Temp Storage Life	150C (Grade 1)	168 H	s JESD	D11 A103	A	1 WF	0/45	Room/Hot	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/45	Pass	0/45	Pass	0/45	Pass						
		150C (Grade 1)	500 H		D11 A103		1 WF		Room/Hot	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/45	Pass Pass	0/45	Pass	0/45	Pass						4
		150C (Grade 1)	1000 H	rs JESD	D11 A103	A	1 WF	0/45	Room/Hot	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/45	Pass	0/45	Pass	0/45	Pass						4
Test Group B - Accelera	rated Lifetime Simulation Tests																														4
HTOL	High Temp Operating Life	Ta=125C, 100% Vcc	168 H	s JESD	D22 A108	В	3 WF	0/77	Room/Hot/Cold	QBS to QBS device 2,4,5		QBS to QBS device 3,4,5		QBS to QBS device 2,4,5		QBS to QBS device 2,4,5		QBS to QBS device 2,4,5		0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass
		or Ta=150 for 408 hrs	500 H	s JESD	D22 A108		3 WF	0/77	Room/Hot/Cold	QBS to QBS device 2,4,5		QBS to QBS device 3,4,5		QBS to QBS device 2,4,5		QBS to QBS device 2,4,5		QBS to QBS device 2,4,5		0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass Pass Pass
			1000 H	rs JESD	D22 A108	В	3 WF	0/77	Room/Hot/Cold	QBS to QBS device 2,4,5		QBS to QBS device 3,4,5		QBS to QBS device 2,4,5		QBS to QBS device 2,4,5		QBS to QBS device 2,4,5		0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass	0/77	Pass
Test Group C - Package	e Assembly Integrity Tests																														4
WBS	Wire Bond Shear	JESD22-B116B	Cpk>1.		-Q100-001		30 Bonds	0/5	Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/5	Pass	0/5	Pass	0/5	Pass						4
WBP	Wire Bond Pull	MIL-STD883-2011	Cpk>1.	66 MIL-ST	TD883-2011	C 3	30 Bonds	0/5	Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3	1 1	QBS to QBS device 1, 2, 3	1 1	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/5	Pass	0/5	Pass	0/5	Pass						4
SD	Solderability	>95% Coverage	5 Secor	ds JESD	D22 B102	C	3 WF	0/15	Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/45	Pass	0/45	Pass	0/45	Pass						4
PD	Physical Dimensions	Ppk>1.67 and Cpk>1.33	Package O		D22 B100 D22 B108	c	3 WF	0/10	Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		0/10	Pass	0/10	Pass	0/10	Pass						
Test Group E - Electrica	al Verification																														
ESD	Human Body Model	HBM (AEC-Q100-002)	+-21	V (AEC-0	-Q100-002)		1 Assy		Room/Hot	QBS to QBS device 2		QBS to QBS device 3		>4000V R/T only	Pass	QBS to Qual device 3		3500V	Pass	1000V R/T only	Pass	>4000V 25 & +125	Pass	2000V R/T only	Pass						
	Machine Model	MM (AEC-Q100-003)	+-20	V (AEC-	C-Q100-003)	E	1 Assy	0/3	Room/Hot	QBS to QBS device 2		QBS to QBS device 3		>400V R/T only	Pass	QBS to Qual device 3		350V	Pass	>400V R/T only	Pass	>400v 25 & +125	Pass	200V R/T only	Pass						
	Charged Device Model	CDM (AEC-Q100-011)	+-750	V (AEC-0	-Q100-011)	E	1 Assy	0/3	Room/Hot	QBS to QBS device 2		QBS to QBS device 3		QBS to QBS device 2	i i	QBS to Qual device 3		>1000V	Pass	>1000V R/T only	Pass	>1000V 25 & + 125	Pass	>1000V R/T only	Pass						
LU	Latch-up (Class I)	Max Operating Ta or Tc or Tj	100n	A JE	JESD78	E	1 Assy	0/6	Room	QBS to QBS device 2		x		QBS to QBS device 2		QBS to Qual device 3		0/6	Pass			0/6	Pass								
Char	Characterization	Typ -40C, 0C, 25C, 85C, 125C	Operating	Range AE	EC-Q003	E		0/30	Room	complete																					
Test Group G - Cavity F	Package Integrity Tests (Ceramic Testing Only)															•															
DS	Die Shear	Die Shear			I-STD-883 thod 2019	G			Room	QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		QBS to QBS device 1, 2, 3		х	Pass	х	Pass	х	Pass						
Summary:	S Mann	*					,			•	•	•					•			•			•	•							
Submitted By:	S Mann																														
Approved By:																															
. 44. 2700 07.																															