



# Diodes Incorporated Discrete and Analog Semiconductors

Qualification Report - PCN-2221

Manufacturer No.: Addition of A Passivation Layer Over The Top Metal of The Die

for Selected BJT Devices

Revision: 0

**Date:** August 19, 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

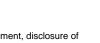
Prepared By: Diodes US Document Control Date August 19, 2016

Approved By: Diodes US QRA Department Date August 19, 2016







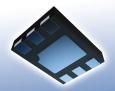


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Existing industry standards for plastic encapsulated microcircuit qualification and reliability monitors are based upon historical data, experiments, and field experience with the use of these devices in commercial and industrial applications. The applicability of these standards in determining the suitability for use and safety performance in life support, military and aerospace applications has not been established. Due to the multiple variations in field operating conditions, a component manufacturer can only base estimates of product life on models and the results of package and die level qualification. The buyer's use of this data, and all consequences of such use, is solely the buyer's responsibility. Buyer assumes full responsibility to perform sufficient engineering and additional qualification testing in order to properly evaluate the buyer's application and determine whether a candidate device is suitable for use in that application. The information provided by Diodes Incorporated shall not be considered sufficient grounds on which to base any such determination.

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DIODES INCORPORATED

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DATE: 19th August, 2016

PCN #: 2221

PCN Title: Addition of A Passivation Layer Over The Top Metal of The Die for

Selected BJT 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-2221 REV 00**

Notification Date:	Implementation Date:	Product Family:	Change Type:	PCN #:
19 <sup>th</sup> August, 2016	18 <sup>th</sup> November, 2016	Discrete Products	Die Passivation	2221

#### **TITLE**

Addition of A Passivation Layer Over The Top Metal of The Die for Selected BJT Devices

#### **DESCRIPTION OF CHANGE**

This PCN is being issued to notify customers that in order to improve product manufacturability, Diodes Incorporated has qualified the addition of a passivation layer over the top metal of the die for selected BJT devices.

Full electrical characterization and reliability testing has been completed on representative part numbers built with the additional passivation layer to ensure there is no change to product reliability, device functionality or electrical specifications in the datasheet.

There will be no change to the Form, Fit, or Function of affected products.

#### **IMPACT**

No change in datasheet parameters

#### **PRODUCTS AFFECTED**

Please refer to Table 1 for the affected devices

WEB LINKS	
Manufacturer's Notice: <a href="http://www.diodes.com/quality/pcns">http://www.diodes.com/quality/pcns</a>	
For More Information Contact: <a href="http://www.diodes.com/contacts">http://www.diodes.com/contacts</a>	

 Data Sheet:
 <a href="http://www.diodes.com/products">http://www.diodes.com/products</a>

#### **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.

corporated Rel Date: 2/10/2016



	Tabl	e 1 - Affected D	evices	
DT955-7	FCX688BTA	FZT655TA	FZT753TA	FCX1053ATA-79
FZT849TA	FZT688BTA	FCX789ATA-79	FZT753TC	ZXTN10150DZTA
FZT851TA	FZT689BTA	FCX789ATA	FZT795ATA	ZXTN4004ZTA
FZT851TA-79	FZT649TA-79	FZT789ATA	FZT755TA	ZXTN4004KTC
FZT853TA	FZT649TA	2DB1713-13	FZT1051ATA	ZDT6753TA
FZT855TA	FZT649TC	FZT788BTA	FZT1151ATA	ZDT6753TC
FZT869TA	DXT690BP5-13	FZT749TA-79	FZT1047ATA	ZDT6790TA
FZT948TA	ZXT690BKTC	FZT749TA	FZT1149ATA	ZDT6790TC
FZT949TA	FCX690BTA	FZT749TC	FCX1047ATA	ZDT694TA
FZT951TA	FZT690BTA	DMJT9435-13	FCX1051ATA	ZDT749TA
FZT951TA-79	FZT651TA-79	DXT790AP5-13	FCX1053A-7	ZDT749TC
FZT951TC	2DC4672-13	ZXT790AKTC	FCX1053ATA	ZDT751TA
FZT953TA	FZT651TA	FCX790ATA	FCX1147ATA	ZDT795ATA
FZT953TA-79	FZT651TC	FZT790ATA	FCX1149ATA	ZHB6790TA
FZT955TA	FZT692BTA	FZT790ATC	FCX1151ATA	ZHB6792TA
FZT955TA-79	MJD31C-13	FZT751TA-79	ZXT1053AKTC	ZDT1048TA
FZT956TA	DXTN07100BP5-13	2DA1797-13	DSS4540X-13	ZDT1049TA
FZT968TA	FZT653TA	FZT751TA	FZT1053ATA	ZDT1053TA
ZXT849KTC	FZT653TC	FZT751TC	FZT1048ATA	FST844TA
ZXT951KTC	FZT694BTA	FZT792ATA	FZT1049ATA	FZT1147ATA
ZXT953KTC	FZT655TA-79	MJD32C-13	FZT1049ATC	ZXTN10150DZTA-79

Rel Date: 2/10/2016

## Certificate of Design, Construction & Qualification



Description: Addition of Passivation to X13 Mask Set Die types up to 200 V Bvceo assembled at CAT

	0.1	1				0 10 1 1		0 10 1 0	
	Category					Qual Device 1		Qual Device 2	
	Product	Part Number				FZT855		FZT956	
	Assembly	Package Type				SOT223		SOT223	
	Assembly	Package Size				3.5 x 6.5 mm		3.5 x 6.5 mm	
	Wafer	Die Name(s)				CZ855SD		FZT956TSD	
	Wafer	Die Size (W/L/Thickness) - After Saw				1.676 x 1.676		1.6764 x 1.6764	
	Wafer	Die Process / Technology				Bipolar		Bipolar	
	Wafer	Wafer FAB/ Location				KFAB		OFAB	
	Wafer	Wafer Diameter				150mm		150mm	
	Wafer	Front Metal Type				AlSiCu		AlSiCu	
	Wafer	Front Metal Layer Number/ Thickness				3.5um		3.0um	
	Wafer	Back Metal Type (All Layers)				TiNiAg		TiNiAg	
	Wafer	Back Metal Thickness (All Layers)				300 / 2600 / 5500 A		300 / 2600 / 5500 A	
	Wafer	Die Conforming Coating (Passivation)				Oxide/Nitride		Oxide/Nitride	
	Wafer	Die passivation thickness range				5000 / 5000 A		5000 / 5000A	
	Wafer	No of masks Steps				5		6	
	Assembly	·				1		1	
		Die quantity per package (e.g. single or dual dies)				Soft Solder		Soft Solder	
	Assembly	Die Attach Method (DB Epoxy/Solder Type)							
	Assembly	Die Attach Material/ Supplier				Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5	
	Assembly	Bond Wire/Clip Bond Material/ Supplier				Cu		Cu	
	Assembly	Bond Type (at Die)				Thermosonic		Thermosonic	
	Assembly	Bond Type (at LF)				Thermosonic		Thermosonic	
	Assembly	No. of bond over active area				3		3	
	Assembly	Glass Transistion Temp				130°C		130°C	
	Assembly	Terminal Finish (Plating) Material		I		Matt Sn		Matt Sn	
	Assembly	Header plating (Die Land Area)		I		NA (Bare Copper)		NA (Bare Copper)	
	Assembly	Wire Diameter				1.7 mil		1.7 mil	
	Assembly	Leadframe Type				SOT-223C		SOT-223C	
	Assembly	Leadframe Material		1		CDA194FH		CDA194FH	
	Assembly	Lead Frame Manufacturer		1		ASM		ASM	
	Assembly	Molding Compound Type		1		EME-G600		EME-G600	1
	Assembly	Mold Compound Material Manufacturer				SUMITOMO		SUMITOMO	
	Assembly	Green Compound (Yes/No)				Yes		Yes	
	Assembly	Lead-Free (Yes/No)				Yes		Yes	
	Assembly	Assembly Site/ Location				CAT		CAT	
		,				CAT		CAT	
	Assembly	Test Site/ Location							
	Product	Max Junction Temp				150°C		150°C	
	Product	Max Thermal resistance Junc (case)				n/a		n/a	
	Product	Max Thermal resistance Junc (amibent)				78 °C/W		78 °C/W	
	Product	DataSheet				DS33176		DS36119	
		Reliability and Characterization Testing							
# in AEC Q101 (D)	Test	Test Conditions	Duration / Limits	Accept on # Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail
		D-I 425C	24 11			V	D	<u> </u>	Deser
_	MSL1 Pre-	Bake 125C	24 Hrs	SMD only,	2 Assessable late	X	Pass	X	Pass
2	conditioning	Soak 85C, 85% RH	168Hrs	for Test #7,	3 Assembly lots	X	Pass	X	Pass
3	EXTERNAL VISUAL (EV)	IR reflow 260C  MIL-STD-750 METHOD 2071	3 cycles PER SPEC	8, 9 & 10 All qualification	ation parts submitted for testing	X X	Pass Pass	X X	Pass Pass
	PARAMETRIC	FFC 3FC 0FC 13FC 1F0C	Operating Range,	0/25		V	Doco	V	Dana
4	VERIFICATION (PV)	-55C, 25C, 85C, 125C, 150C	Per Data Sheet 168 Hrs	0/25 0/77	3 wafer lots	X X	Pass Pass	X X	Pass
5	HTRB	Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	500 Hrs	0/77	3 wafer lots	X	Pass	X	Pass
,	טאווו	10 130 G OF WIGA 13, VG-100/0, FER WILL-310-/30-1			2 Waler IOIS				
-			1000 Hrs 168 Cycles	0/77		X X	Pass	X X	Pass
	TC	To- 650 to 1500 or Mark Ti D50 1500000 101		0/77	2 Accomplication		Pass		Pass
7	TC	Ta=-65C to 150C or Max Tj, PER JESD22A-104	500 Cycles	0/77	3 Assembly lots	X	Pass	X	Pass
	i	I .	1000 Cycles	0/77		X	Pass	X	Pass
		T- 4240C 4EBCIC 4000(B): 5-5 :505-55					D	Х	Pass
8	PCT/AC	Ta=121°C 15PSIG 100%RH; PER JESD22- A102	96 Hrs	0/77	3 Assembly lots	X	Pass		
8	PCT/AC HAST	-	96 Hrs 96 Hrs	0/77 0/77	3 Assembly lots  3 wafer lots	x	Pass	х	Pass
		A102 Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-			,	X X		Х	Pass Pass
		A102 Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-	96 Hrs	0/77	,	х	Pass		
9	HAST	A102 Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110	96 Hrs 2520 Cycles	0/77	3 wafer lots	X X	Pass Pass	Х	Pass
9	HAST	A102 Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110	96 Hrs 2520 Cycles 7560 Cycles	0/77 0/77 0/77	3 wafer lots	X X X	Pass Pass Pass	X X	Pass Pass
9	HAST	A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)	96 Hrs 2520 Cycles 7560 Cycles 15000 Cycles	0/77 0/77 0/77 0/77	3 wafer lots 3 wafer lots	X X X X	Pass Pass Pass Pass	X X X	Pass Pass Pass
9	HAST	A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)	96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET	0/77 0/77 0/77 0/77 0/30	3 wafer lots 3 wafer lots 1 wafer lot	X X X X X	Pass Pass Pass Pass Pass	X X X X	Pass Pass Pass Pass Pass
9 10 11	HAST IOL ESD	A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001) CDM (AEC-Q100-005) MM (AEC-Q101-002)	96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET	0/77 0/77 0/77 0/77 0/30 0/30 0/30	3 wafer lots  3 wafer lots  1 wafer lot 1 wafer lot 1 wafer lot	X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X X X X X X	Pass Pass Pass Pass Pass Pass Pass
9 10 11 12	HAST IOL ESD DPA	A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001) CDM (AEC-Q100-005) MM (AEC-Q101-002) AEC Q101-004 SEC. 4	96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET	0/77 0/77 0/77 0/77 0/30 0/30 0/30 0/30 0/2	3 wafer lots  3 wafer lots  1 wafer lot 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot	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 Pass Pass Pass Pass Pass
9 10 11 12 23	HAST  IOL  ESD  DPA  Wire Bond Strength	A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)	96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET Cpk>1.66	0/77 0/77 0/77 0/77 0/30 0/30 0/30 0/2 0/ min of 5	3 wafer lots  3 wafer lots  1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	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 X X	Pass Pass Pass Pass Pass Pass Pass Pass
9 10 11 12 23 24	HAST  IOL  ESD  DPA  Wire Bond Strength BOND SHEAR	A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)  AEC-Q101-003	96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET Cpk>1.66 Cpk>1.66	0/77  0/77  0/77  0/77  0/30  0/30  0/30  0/2  0/ min of 5  0/ min of 5	3 wafer lots  1 wafer lot 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot 1 Assembly lot	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 X X	Pass Pass Pass Pass Pass Pass Pass Pass
9 10 11 12 23	HAST  IOL  ESD  DPA  Wire Bond Strength	A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)	96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET Cpk>1.66	0/77 0/77 0/77 0/77 0/30 0/30 0/30 0/2 0/ min of 5	3 wafer lots  3 wafer lots  1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	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 X X	Pass Pass Pass Pass Pass Pass Pass Pass



Description: Addition of Passivation to X13 Mask Set Die types up to 200 V Bvceo assembled at SAT

	Category	1				Qual Device 1		Qual Device 2		Qual Device 3		Qual Device 3	
	Product	Part Number				FZT855		FZT955		FZT956		ZXT849K	
_	Assembly	Package Type				SOT223		SOT223		SOT223		TO252-3L	
	Assembly	Package Size				3.5 x 6.5 mm		3.5 x 6.5 mm		3.5 x 6.5 mm		10232 32	
	Wafer	Die Name(s)				FZT855T3D		FZT955T3D		CZ956D	1	CZ849D	
	Wafer	Die Size (W/L/Thickness) - After Saw				1.6764 x 1.6764 mm		1.6764 x 1.6764 mm		1.676 x 1.676	1	1.676 x 1.676	
	Wafer	Die Process / Technology				Bipolar		Bipolar		Bipolar		Bipolar	
	Wafer	Wafer FAB/ Location				OFAB		OFAB		KFAB		KFAB	
	Wafer	Wafer Diameter				150mm		150mm		150mm		150mm	
	Wafer	Front Metal Type				AlSiCu		AlSiCu		AlSiCu	1	AlSiCu	
	Wafer	Front Metal Layer Number/ Thickness				3.0um		3.0um		3.5um	1	3.5um	
_	Wafer	Back Metal Type (All Layers)				TiNiAg		TiNiAg		TiNiAg		TiNiAg	
	Wafer	Back Metal Thickness (All Layers)				300 / 2600 / 5500 A		300 / 2600 / 5500 A		300 / 2600 / 5500 A	1	300 / 2600 / 5500 A	
	Wafer	Die Conforming Coating (Passivation)				Oxide/Nitride		Oxide/Nitride		Oxide/Nitride		Oxide/Nitride	
	Wafer	Die passivation thickness range				5000 / 5000A		5000 / 5000A		5000 / 5000A		5000 / 5000A	
	Wafer	No of masks Steps				5		6		6	1	5 5	
_	Assembly	Die quantity per package (e.g. single or dual dies)				1		1		1		1	
	Assembly	Die Attach Method (DB Epoxy/Solder Type)				Soft Solder		Soft Solder		Soft Solder	1	Soft Solder	
	Assembly	Die Attach Material/ Supplier				Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5	1	Pb92.5Sn5Ag2.5	
	Assembly	Bond Wire/Clip Bond Material/ Supplier				Cu		Cu		Cu	1	Cu	
_	Assembly	Bond Type (at Die)				Thermosonic		Thermosonic		Thermosonic	_	Thermosonic	
_	Assembly	Bond Type (at UF)				Thermosonic		Thermosonic		Thermosonic	1	Thermosonic	
_											-		
	Assembly	No. of bond over active area				3		3		3	-	3	
	Assembly	Glass Transistion Temp				130°C		130°C Matt Sn	1	130°C Matt Sn	1	130°C Matt Sn	_
	Assembly	Terminal Finish (Plating) Material				Matt Sn			-		1		
	Assembly	Header plating (Die Land Area)				Spot Ag		Spot Ag	-	Spot Ag	1	Spot Ag	
	Assembly	Wire Diameter				1.7 mil		1.7 mil		1.7 mil		1.7 mil	
	Assembly	Leadframe Type				SOT-223A		SOT-223A	<b></b>	SOT-223A		TO252-3L (Spot Ag)	
	Assembly	Leadframe Material				CDA194FH		CDA194FH	<b></b>	CDA194FH		12SnOFC-H	_
	Assembly	Lead Frame Manufacturer				XMYH		XMYH	<b></b>	XMYH		EN4E 0700	_
	Assembly	Molding Compound Type				EME-G600		EME-G600	<b></b>	EME-G600		EME-G700	_
	Assembly	Mold Compound Material Manufacturer				SUMITOMO		SUMITOMO		SUMITOMO		SUMITOMO	
	Assembly	Green Compound (Yes/No)				Yes		Yes		Yes	<b> </b>	Yes	
	Assembly	Lead-Free (Yes/No)				Yes		Yes		Yes		Yes	
	Assembly	Assembly Site/ Location				SAT		SAT		SAT		SAT	
	Assembly	Test Site/ Location				SAT		SAT		SAT		SAT	
	Product	Max Junction Temp				150°C		150°C		150°C		150°C	
	Product	Max Thermal resistance Junc (amibent)				78 °C/W		78 °C/W		78 °C/W		59 °C/W	
	Product	DataSheet				DS33176		DS33190		DS36119		DS33641	
		Reliability and Characterization Testing											
		nendamity and enaracterization resting											
# in AE0 Q101 (D)	Test	Test Conditions	Duration / Limits	Accept on # Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail
Q101		Test Conditions		Failed/ Sample Size per Lot	# of Lots		Pass/Fail		Pass/Fail		Pass/Fail		Pass/Fail
Q101 (D)		Test Conditions  Bake 125C	24 Hrs	Failed/ Sample Size per Lot SMD only,		Х	PASS	Х	Pass/Fail PASS	X	PASS	х	Pass/Fail PASS
Q101	Test	Test Conditions  Bake 125C  Soak 85C, 85% RH	24 Hrs 168Hrs	Failed/ Sample Size per Lot SMD only, for Test #7,	# of Lots  3 Assembly lots	X X	PASS PASS	X X	PASS PASS	X X	PASS PASS	X X	PASS PASS
Q101 (D)	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)	Test Conditions  Bake 125C	24 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10		Х	PASS	Х	Pass/Fail PASS	X	PASS	х	Pass/Fail PASS
Q101 (D)	MSL1 Pre- conditioning	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat	3 Assembly lots	x x x x	PASS PASS PASS PASS PASS	X X X X	PASS PASS PASS PASS PASS	X X X X	PASS PASS PASS PASS PASS PASS	x x x x	PASS PASS PASS PASS PASS
Q101 (D) 2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25	3 Assembly lots  ion parts submitted for testing  3 wafer lots	x x x x	PASS PASS PASS PASS PASS PASS	x x x x	PASS PASS PASS PASS PASS PASS PASS	x x x x	PASS PASS PASS PASS PASS PASS PASS	X X X X	PASS PASS PASS PASS PASS PASS
Q101 (D) 2	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77	3 Assembly lots  ion parts submitted for testing	x x x x x	PASS PASS PASS PASS PASS PASS PASS	x x x x	PASS PASS PASS PASS PASS PASS PASS PASS	x x x x x	PASS PASS PASS PASS PASS PASS PASS PASS	x x x x x	PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77	3 Assembly lots  ion parts submitted for testing  3 wafer lots	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 X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS	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 X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4 5	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots	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 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 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 X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77	3 Assembly lots  ion parts submitted for testing  3 wafer lots	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 X X X	PASS PASS PASS PASS 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 x x x x x x x x x x x x x	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4 5	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB	### Test Conditions  ### Bake 125C    Soak 85C, 85% RH   IR reflow 260C    MIL-STD-750 METHOD 2071    -55C, 25C, 85C, 125C, 150C  #### Ta=-65C to 150C or Max Tj, PER JESD22A-104	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots	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 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 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 X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4 5	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots	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 X X X	PASS PASS PASS PASS 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 x x x x x x x x x x x x x	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 1000 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles	Failed/ Sample Size per Lot Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77	3 Assembly lots  ion parts submitted for testing  3 wafer lots  3 wafer lots  3 Assembly lots	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5 7 8 8 9	Test  MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  Ta=85°C, 85% RH, with 80% Maximum Reverse	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Vycles 1000 Cycles 96 Hrs 96 Hrs	Failed/ Sample Size per Lot Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots	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 X X X X X X X X X X X X X	PASS/Fail  PASS PASS PASS PASS PASS PASS PASS PA	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 x x x x x x x x x x x x x	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5 7 8 8	Test  MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  PCT/AC	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 96 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot 1 SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots clon parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots	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 X X X X X X X X X X X X X	PASS/Fail  PASS PASS PASS PASS PASS PASS PASS PA	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 x x x x x x x x x x x x x	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5 7 8 8 9	Test  MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  Ta=85°C, 85% RH, with 80% Maximum Reverse	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 1000 Hrs 1000 Hrs 168 Cycles 1000 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots	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 x x x x x x x x x x x x x	PASS/Fail  PASS PASS PASS PASS PASS PASS PASS PA	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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4 5 7 8 9 9 alt	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB	### Test Conditions    Bake 125C	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 96 Hrs  168 Hrs 500 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot 10 MD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots	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 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 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 x x x x x x x x x x x x x	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4 5 7 8 9	Test  MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  Ta=85°C, 85% RH, with 80% Maximum Reverse	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 96 Hrs 96 Hrs 168 Hrs 500 Hrs 168 Urs 1000 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4 5 5 7 8 8 9 9 alt	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB	### Test Conditions    Bake 125C	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 1560 Hrs 1560 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4 5 7 8 8 9 9 alt 10	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB	### Test Conditions    Bake 125C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 168 Hrs 500 Hrs 2520 Cycles 15000 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 3 wafer lots 1 wafer lots	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D) 2 3 4 5 7 8 9 9 alt	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB	### Conditions    Bake 125C	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 160 Cycles 500 Cycles 96 Hrs  168 Hrs 500 Hrs 1000 Hrs 168 Updes 1000 Cycles 1000 Cycles 1000 Cycles 1500 Cycles 1500 Cycles 1500 Cycles 1500 Cycles	Failed/ Sample Size per Lot	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 3 wafer lots 1 wafer lot 1 wafer lot	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5 7 8 9 9 alt 10 11	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB  IOL  ESD	### Conditions    Bake 125C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 168 Hrs 500 Hrs 2520 Cycles 15000 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 4 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5 7 8 9 9 alt 10 11 12	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB  IOL  ESD  DPA	### Conditions    Bake 125C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 1750 Cycles 15000 Cycles 15000 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lot 1 wafer lot 1 Assembly lot	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5 7 8 9 9 alt 10 11 12 23	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB  IOL  ESD  DPA Wire Bond Strength	### Test Conditions    Bake 125C	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs  168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 17500 Cycles 15000 Cycles	Failed/Sample Size per Lot 1 SMD only, for Test #7, 8, 9 & 10 All qualificat  0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot 1 Assembly lot	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5 7 8 9 9 alt 10 11 12 23 24	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB  IOL  ESD  DPA  Wire Bond Strength BOND SHEAR	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-004)  AEC-Q101-004 SEC, 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)  AEC-Q101-003	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 1760 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 4 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
2 3 4 5 7 8 9 9 alt 10 11 12 23	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB  IOL  ESD  DPA Wire Bond Strength BOND SHEAR Die Shear	### Test Conditions    Bake 125C	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs  168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 17500 Cycles 15000 Cycles	Failed/Sample Size per Lot 1 SMD only, for Test #7, 8, 9 & 10 All qualificat  0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot 1 Assembly lot	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
Q101 (D)  2  3  4  5  7  8  9  9 alt  10  11  12  23  24	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  H3TRB  IOL  ESD  DPA  Wire Bond Strength BOND SHEAR	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-004)  AEC-Q101-004 SEC, 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)  AEC-Q101-003	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 1760 Cycles	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77 0/77 0/77 0/7	3 Assembly lots sion parts submitted for testing 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 4 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot	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 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 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 X X X X X X X X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS

### Certificate of Design, Construction & Qualification



Description: Addition of Passivation to X11 and X14 Mask Set Die types up to 200 V Bvceo assembled at CAT

						KFAB passivated die qual		OFAB passivated die qual		Epoxy die attach qual	
	Category					QBS Source Device 1		QBS Source Device 2		QBS Source Device 3	
	Product	Part Number				FZT855TA		FZT956TA		FZT655	
	Assembly	Package Type				SOT223		SOT223		SOT223	
	Assembly	Package Size				3.5 x 6.5 mm		3.5 x 6.5 mm		3.5 x 6.5 mm	
	Wafer	Die Name(s)				CZ855SD		FZT956TSD		FZT655T3D	
	Wafer	Die Size (W/L/Thickness) - After Saw				1.676 x 1.676		1.6764 x 1.6764		1.067 x 1.067	
	Wafer	Die Process / Technology				Bipolar		Bipolar		Bipolar	
	Wafer	Wafer FAB/ Location				KFAB		OFAB		OFAB	
	Wafer	Wafer Diameter				150mm		150mm		150mm	
	Wafer	Front Metal Type				AlSiCu		AlSiCu		AlSiCu	
	Wafer	Front Metal Layer Number/ Thickness				3.5um		3.0um		3.0um	
	Wafer	Back Metal Type (All Layers)				TiNiAg		TiNiAg		TiNiAg	
	Wafer	Back Metal Thickness (All Layers)				300 / 2600 / 5500 A		300 / 2600 / 5500 A		300 / 2600 / 5500 A	
	Wafer	Die Conforming Coating (Passivation)				Oxide/Nitride		Oxide/Nitride		n/a	
	Wafer	Die passivation thickness range				5000 / 5000 A		5000 / 5000A		n/a	
	Wafer	No of masks Steps				5		6		5	
	Assembly	Die quantity per package (e.g. single or dual dies)				1		1		1	
	Assembly	Die Attach Method (DB Epoxy/Solder Type)				Soft Solder		Soft Solder		Ероху	
	Assembly	Die Attach Material/ Supplier				Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5		8200TI	
	Assembly	Bond Wire/Clip Bond Material/ Supplier				Cu		Cu		Cu	
	Assembly	Bond Type (at Die)				Thermosonic		Thermosonic		Thermosonic	
	Assembly	Bond Type (at LF)				Thermosonic		Thermosonic		Thermosonic	
	Assembly	No. of bond over active area				3		3		3	
	Assembly	Glass Transistion Temp				130°C		130°C		130°C	
	Assembly	Terminal Finish (Plating) Material				Matt Sn		Matt Sn		Matt Sn	
	Assembly	Header plating (Die Land Area)				NA (Bare Copper)		NA (Bare Copper)		NA (Bare Copper)	
	Assembly	Wire Diameter				1.7 mil		1.7 mil		1.7 mil	
	Assembly	Leadframe Type				SOT-223C		SOT-223C		SOT-223D	
	Assembly	Leadframe Material				CDA194FH		CDA194FH		CDA194FH	
	Assembly	Lead Frame Manufacturer				ASM		ASM		ASM	
	Assembly	Molding Compound Type				EME-G600		EME-G600		EME-G600	
	Assembly	Mold Compound Material Manufacturer				SUMITOMO		SUMITOMO		SUMITOMO	
	Assembly	Green Compound (Yes/No)				Yes		Yes		Yes	
	Assembly	Lead-Free (Yes/No)				Yes		Yes		Yes	
	Assembly	Assembly Site/ Location				CAT		CAT		CAT	
	Assembly	Test Site/ Location				CAT		CAT		CAT	
	Product	Max Junction Temp				150°C		150°C		150°C	
	Product	Max Thermal resistance Junc (case)				n/a		n/a		n/a	
	Product	Max Thermal resistance Junc (amibent)				78 °C/W		78 °C/W		62.5°C/W	
	Product	DataSheet				DS33176		DS36119		DS33151	
		Reliability and Characterization Testing		=							
# in				Accort on #							
# in AEC- Q101 (D)	Test	Test Conditions	Duration / Limits	Accept on # Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail
AEC- Q101		Test Conditions  Bake 125C		Failed/ Sample Size	# of Lots		Pass/Fail		Pass/Fail		Pass/Fail
AEC- Q101	MSL1 Pre-	Bake 125C	Duration / Limits  24 Hrs  168Hrs	Failed/ Sample Size per Lot SMD only,		X = Test Needed  X X	Pass/Fail Pass	X		X = Test Needed  X X	
AEC- Q101 (D)			24 Hrs	Failed/ Sample Size per Lot	# of Lots  3 Assembly lots	Х	Pass/Fail		Pass/Fail Pass	X	Pass/Fail Pass
AEC- Q101 (D)	MSL1 Pre-	Bake 125C Soak 85C, 85% RH	24 Hrs 168Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10		X X	Pass/Fail Pass Pass	X X	Pass/Fail Pass Pass	X X	Pass/Fail Pass Pass
AEC- Q101 (D)	MSL1 Pre- conditioning	Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualific	3 Assembly lots	X X X X	Pass/Fail  Pass Pass Pass Pass Pass	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X X X	Pass/Fail  Pass Pass Pass Pass
AEC- Q101 (D) 2 3	MSL1 Pre- conditioning EXTERNAL VISUAL (EV) PARAMETRIC VERIFICATION (PV)	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualific	3 Assembly lots  cation parts submitted for testing  3 wafer lots	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X X X	Pass/Fail  Pass Pass Pass Pass
AEC- Q101 (D)	MSL1 Pre- conditioning EXTERNAL VISUAL (EV)	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualific 0/25 0/77	3 Assembly lots cation parts submitted for testing	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X	Pass/Fail  Pass Pass Pass Pass
AEC- Q101 (D) 2 3	MSL1 Pre- conditioning EXTERNAL VISUAL (EV) PARAMETRIC VERIFICATION (PV)	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77  0/77	3 Assembly lots  cation parts submitted for testing  3 wafer lots	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X X X X	Pass/Fail  Pass Pass Pass Pass Pass
AEC-Q101 (D)  2  3  4  5	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific 0/25  0/77  0/77  0/77  0/77	3 Assembly lots  cation parts submitted for testing  3 wafer lots  3 wafer lots	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass
AEC- Q101 (D) 2 3	MSL1 Pre- conditioning EXTERNAL VISUAL (EV) PARAMETRIC VERIFICATION (PV)	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77  0/77  0/77  0/77	3 Assembly lots  cation parts submitted for testing  3 wafer lots	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X	Pass/Fail  Pass Pass Pass Pass  Pass  Pass  Pass  Pass
AEC- Q101 (D) 2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77  0/77  0/77  0/77  0/77	3 Assembly lots  cation parts submitted for testing  3 wafer lots  3 wafer lots	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  Pass  Pass  Pass  Pass  Pass	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  Pass  Pass  Pass  Pass  Pass	X X X X X	Pass/Fail  Pass Pass Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass
AEC-Q101 (D)  2  3  4  5  5-1	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass
AEC- Q101 (D) 2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 500 Hrs 500 Hrs 500 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualified  0/25  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots  cation parts submitted for testing  3 wafer lots  3 wafer lots	X X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	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 Pa	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass
AEC- Q101 (D)  2  3  4  5  5-1	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass
AEC-Q101 (D)  2  3  4  5  5-1	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  HTRB	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 wafer lots	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass
AEC-Q101 (D)  2  3  4  5  5-1  7	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  PCT/AC	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualified  0/25  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  0/77  0/77  0/77	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots	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 Pa	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass
AEC- Q101 (D)  2  3  4  5  5-1  7  8	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  PCT/AC	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass
AEC-Q101 (D)  2  3  4  5  5-1  7  8	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 96 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs  2520 Cycles 7560 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualification of the period of th	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22A-104  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs  96 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualification of the period of th	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots	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	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	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8  9  10	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs 2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lots	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	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	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8  9  10	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77  0/30  0/30	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lots 1 wafer lot	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	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 P	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8  9  10  11  12  20	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  IOL  ESD  DPA  RESISTANCE TO SOLDER HEAT (RSH)	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-001)  CDM (AEC-Q101-002)  AEC Q101-004 SEC. 4  JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualific  0/25  0/77  0/30  0/30  0/30  0/30  0/2  0/30	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	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	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	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8  9  10  11  12  20  23	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  IOL  ESD  DPA  RESISTANCE TO SOLDER HEAT (RSH)  Wire Bond Strength	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22A-104  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A100  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-001)  CDM (AEC-Q101-002)  AEC Q101-004 SEC. 4  JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)  MIL-STD-750 METHOD 2037 (JESD22-B116B)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET PER SPEC Cyk>1.66	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualification of 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	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	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	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8  9  10  11  12  20  23  24	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  IOL  ESD  DPA  RESISTANCE TO SOLDER HEAT (RSH) Wire Bond Strength BOND SHEAR	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22A-104  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4  JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)  MIL-STD-750 METHOD 2037 (JESD22-B116B)  AEC-Q101-003	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Gycles 1000 Cycles 96 Hrs 2520 Cycles 15000 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET PER SPEC Cpk>1.66 Cpk>1.66	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualified  0/25  0/77  0/70	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot 1 Assembly lot	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	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	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8  9  10  11  12  20  23	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  IOL  ESD  DPA  RESISTANCE TO SOLDER HEAT (RSH) Wire Bond Strength BOND SHEAR Die Shear	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22A-104  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A102  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A100  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-001)  CDM (AEC-Q101-002)  AEC Q101-004 SEC. 4  JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)  MIL-STD-750 METHOD 2037 (JESD22-B116B)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs  2520 Cycles 7560 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET PER SPEC Cyk>1.66	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualification of 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	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	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	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8  9  10  11  12  20  23  24	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  IOL  ESD  DPA  RESISTANCE TO SOLDER HEAT (RSH) Wire Bond Strength BOND SHEAR Die Shear Summary:	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22A-104  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A102  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-004)  AEC Q101-004 SEC. 4  JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)  MIL-STD-750 METHOD 2037 (JESD22-B116B)  AEC-Q101-003  MIL-STD-750 (2017)	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Gycles 1000 Cycles 96 Hrs 2520 Cycles 15000 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET PER SPEC Cpk>1.66 Cpk>1.66	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualified  0/25  0/77  0/70	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot 1 Assembly lot	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	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	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
AEC-Q101 (D)  2  3  4  5  5-1  7  8  9  10  11  12  20  23  24	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  PCT/AC  HAST  IOL  ESD  DPA  RESISTANCE TO SOLDER HEAT (RSH) Wire Bond Strength BOND SHEAR Die Shear	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=121°C 15PSIG 100%RH; PER JESD22A-104  Ta=130C, 85%RH 33.3 psia 80% Bias; PER JESD22-A110  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4  JESD22 A-111 (SMD), B-106 (PTH) (260C @30S)  MIL-STD-750 METHOD 2037 (JESD22-B116B)  AEC-Q101-003	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Gycles 1000 Cycles 96 Hrs 2520 Cycles 15000 Cycles 15000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET PER SPEC Cpk>1.66 Cpk>1.66	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualified  0/25  0/77  0/70	3 Assembly lots cation parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 Assembly lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot 1 Assembly lot	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	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	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



Description: Addition of Passivation to M11 Mask Set Die types up to 200 V Bvceo assembled at NAT in SOT223

$\neg$	Category					QBS Device 1		OFAB GEN3 PNP Passivation Qual  QBS Device 2		OFAB GEN3 PNP Passivation Qua QBS Device 3	
一	Product	Part Number				FZT855TA		FZT955TA		FZT956TA	
								SOT223		SOT223	
-	Assembly	Package Type				SOT223					
$\dashv$	Assembly	Package Size				3.5 x 6.5 mm CZ855TPD		3.5 x 6.5 mm		3.5 x 6.5 mm FZT956TPD	
-	Wafer	Die Name(s) Die Size (W/L/Thickness) - After Saw						FZT955TPD			
+	Wafer			-		1.676 x 1.676 mm		1.6764 x 1.6764 mm		1.6764 x 1.6764 mm	
4	Wafer	Die Process / Technology				Bipolar		Bipolar		Bipolar	
4	Wafer	Wafer FAB/ Location				KFAB		OFAB		OFAB	
_	Wafer	Wafer Diameter				150mm		150mm		150mm	
_	Wafer	Front Metal Type				AlSiCu		AlSiCu		AlSiCu	
	Wafer	Front Metal Layer Number/ Thickness				3.5um		3.0um		3.0um	
	Wafer	Back Metal Type (All Layers)				TiNiAg		TiNiAg		TiNiAg	
	Wafer	Back Metal Thickness (All Layers)				300 / 2600 / 5500 A		300 / 2600 / 5500 A		300 / 2600 / 5500 A	
	Wafer	Die Conforming Coating (Passivation)				Oxide/Nitride		Oxide/Nitride		Oxide/Nitride	
T	Wafer	Die passivation thickness range				5000 / 5000A		5000 / 5000A		5000 / 5000 A	
7	Wafer	No of masks Steps				5		6		6	
T	Assembly	Die quantity per package (e.g. single or dual dies)				1		1		1	
╅	Assembly	Die Attach Method (DB Epoxy/Solder Type)				Soft Solder		Soft Solder		Soft Solder	
+	Assembly	Die Attach Material/ Supplier				Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5	
+											
4	Assembly	Bond Wire/Clip Bond Material/ Supplier				Cu		Au		Cu	
4	Assembly	Bond Type (at Die)				Thermosonic		Thermosonic		Thermosonic	
	Assembly	Bond Type (at LF)				Thermosonic		Thermosonic		Thermosonic	
	Assembly	No. of bond over active area		I		3		3		3	
J	Assembly	Glass Transistion Temp		I		125°C		125°C		125°C	
T	Assembly	Terminal Finish (Plating) Material		I		Matt Sn		Matt Sn		Matt Sn	
T	Assembly	Header plating (Die Land Area)		I		Spot Ag		Spot Ag		Spot Ag	
t	Assembly	Wire Diameter		1		1.7 mil		2.0 mil	į l	1.7 mil	
1	Assembly	Leadframe Type		1		SOT-223		SOT-223	į l	SOT-223	
+	Assembly	Leadframe Material		1		K65/C194		K65/C194		K65/C194	
+	Assembly	Lead Frame Manufacturer		1		Possehl/JIH LIN		Possehl/JIH LIN		Possehl/JIH LIN	
4				ł					-		_
4	Assembly	Molding Compound Type		ł		GE1030	-	GE1030		GE1030	
4	Assembly	Mold Compound Material Manufacturer				Nitto Denko		Nitto Denko		Nitto Denko	
4	Assembly	Green Compound (Yes/No)				Yes		Yes		Yes	
	Assembly	Lead-Free (Yes/No)				Yes		Yes		Yes	
	Assembly	Assembly Site/ Location				NAT		NAT		NAT	
T	Assembly	Test Site/ Location				NAT		NAT		NAT	
T	Product	Max Junction Temp				150°C		150°C		150°C	
T	Product	Max Thermal resistance Junc (case)				n/a		n/a		n/a	
7	Product	Max Thermal resistance Junc (amibent)				78 °C/W		78 °C/W		78 °C/W	
		wax memaresistance junc (ambent)				78 C/W		78 C/ W		78 C/W	
_		5 . 6 .				0.000475		0.000400		BC0C440	
	Product	DataSheet				DS33176		DS33190		DS36119	
	Product	DataSheet Reliability and Characterization Testing				DS33176		DS33190		DS36119	
	Product  Test		Duration / Limits	Accept on # Failed/ Sample Size	# of Lots	DS33176  X = Test Needed	Results Pass/Fail	DS33190  X = Test Needed	Results Pass/Fail	DS36119  X = Test Needed	R
		Reliability and Characterization Testing  Test Conditions		Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Pass/Fail	X = Test Needed	Pass/Fail	X = Test Needed	
	Test	Reliability and Characterization Testing  Test Conditions  Bake 125C	24 Hrs	Failed/ Sample Size per Lot  SMD only,		X = Test Needed X	Pass/Fail Pass	X = Test Needed X	Pass/Fail Pass	X = Test Needed X	
	Test  MSL1 Pre-	Reliability and Characterization Testing  Test Conditions		Failed/ Sample Size per Lot	# of Lots  3 Assembly lots	X = Test Needed  X  X	Pass/Fail	X = Test Needed  X X	Pass/Fail	X = Test Needed  X  X	
	Test	Reliability and Characterization Testing  Test Conditions  Bake 125C	24 Hrs	Failed/ Sample Size per Lot  SMD only,		X = Test Needed X	Pass/Fail Pass	X = Test Needed X	Pass/Fail Pass	X = Test Needed X	
- 1	Test  MSL1 Pre-	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH	24 Hrs 168Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10		X = Test Needed  X  X	Pass/Fail Pass Pass	X = Test Needed  X X	Pass/Fail Pass Pass	X = Test Needed  X  X	
- 1	Test  MSL1 Pre- conditioning	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat	3 Assembly lots	X = Test Needed  X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass	X = Test Needed  X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass	X = Test Needed  X  X  X	
н	Test  MSL1 Preconditioning  EXTERNAL VISUAL  (EV)  PARAMETRIC  VERIFICATION (PV)	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat	3 Assembly lots ion parts submitted for testing 3 wafer lots	X = Test Needed  X X X X X	Pass/Fail  Pass Pass Pass Pass	X = Test Needed  X X X X X	Pass/Fail  Pass Pass Pass Pass	X = Test Needed  X X X X	
н	MSL1 Pre- conditioning EXTERNAL VISUAL (EV) PARAMETRIC	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat	3 Assembly lots ion parts submitted for testing	X = Test Needed  X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass	X = Test Needed  X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass	X = Test Needed  X X X X	
п	Test  MSL1 Preconditioning  EXTERNAL VISUAL  (EV)  PARAMETRIC  VERIFICATION (PV)	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat	3 Assembly lots ion parts submitted for testing 3 wafer lots	X = Test Needed  X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X = Test Needed  X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X = Test Needed  X X X X	
п	Test  MSL1 Preconditioning  EXTERNAL VISUAL  (EV)  PARAMETRIC  VERIFICATION (PV)	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max TJ, Vd=100%, PER MIL-STD-750-1	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots	X = Test Needed  X X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X = Test Needed  X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X = Test Needed  X X X X	
н	MSL1 Pre- conditioning  EXTERNAL VISUAL  [EV)  PARAMETRIC  VERIFICATION (PV)  HTRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X = Test Needed  X X X X X X	
п	Test  MSL1 Preconditioning  EXTERNAL VISUAL  (EV)  PARAMETRIC  VERIFICATION (PV)	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max TJ, Vd=100%, PER MIL-STD-750-1	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 158 Hrs 500 Hrs	Failed/ Sample Size per Lot SIMD only, for Test #7, 8, 9 & 10 All qualificat  0/25 0/77 0/77 0/77 0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots	X = Test Needed  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 = Test Needed  X X X X X X X X X	Pass Pass Pass Pass Pass Pass Pass Pass	X = Test Needed  X X X X X X X X	
- 1	MSL1 Pre- conditioning  EXTERNAL VISUAL  [EV)  PARAMETRIC  VERIFICATION (PV)  HTRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 1000 Hrs 168 Hrs 1000 Hrs 1000 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77 0/77 0/77 0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  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 = Test Needed  X X X X X X X X X	
- 1	MSL1 Pre- conditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 168 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
- 1	MSL1 Pre- conditioning  EXTERNAL VISUAL  [EV)  PARAMETRIC  VERIFICATION (PV)  HTRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 500 Hrs 500 Gycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
- 1	MSL1 Pre- conditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 168 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
- 1	MSL1 Pre- conditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass / Pass Pass Pass Pass Pass Pass Pas	X = Test Needed  X X X X X X X X X X X X X X X X X	
- 1	MSL1 Preconditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB  HTRB  TC  UHAST	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  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  0/77  0/77  0/77  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
п	MSL1 Preconditioning  EXTERNAL VISUAL  [EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  HTRB	### Reliability and Characterization Testing    Test Conditions	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
- 1	MSL1 Preconditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB  HTRB  TC  UHAST	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia  A110	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	Pi
- 1	MSL1 Preconditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB  HTRB  TC  UHAST	### Reliability and Characterization Testing    Test Conditions	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
п	MSL1 Preconditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB  HTRB  TC  UHAST	### Reliability and Characterization Testing    Test Conditions	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  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 = Test Needed  X X X X X X X X X X X X X X X X X	Pi
н	MSL1 Preconditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB	### Reliability and Characterization Testing    Test Conditions	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Cycles 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots 3 wafer lots	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  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 = Test Needed  X X X X X X X X X X X X X X X X X	
п	MSL1 Preconditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia  A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 168 Hrs 500 Cycles 1000 Cycles 1500 Cycles 1500 Cycles 1500 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
н	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs 1000 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots 3 wafer lots 3 wafer lots 1 wafer lots	X = Test Needed  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 Pa	X = Test Needed  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 = Test Needed  X X X X X X X X X X X X X X X X X	
н	MSL1 Preconditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85% RH 33.3 psia  A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001) CDM (AEC-Q100-005)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 1000 Hrs 500 Cycles 1500 Cycles 1500 Cycles 1500 Cycles 1500 Cycles 1500 Hrs 1500 Cycles 15000 Cycles 15000 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/73  0/73  0/30	3 Assembly lots  ion parts submitted for testing  3 wafer lots  1 wafer lot 1 wafer lot	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
- 1	MSL1 Preconditioning EXTERNAL VISUAL (EV) PARAMETRIC VERIFICATION (PV) HTRB  TC UHAST H3TRB IOL	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia  A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-002)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs 1000 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/30  0/30  0/30	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  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 = Test Needed  X X X X X X X X X X X X X X X X X	
	Test  MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB  IOL  ESD  DPA	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=65C to 150C or Max Tj, PER JESD22 A-104  Ta=30C, 85%RH 33.3 psia  A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 158 Hrs 500 Hrs 1000 Hrs 168 Frs 500 Cycles 1500 Cycles 1500 Cycles 1500 Hrs 1500 Cycles 1500 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/30  0/30  0/30  0/30  0/2	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lot 1 wafer lot 1 Assembly lot	X = Test Needed  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 Pa	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass  Pass	X = Test Needed  X X X X X X X X X X X X X X X X X	
	MSL1 Preconditioning EXTERNAL VISUAL (EV) PARAMETRIC VERIFICATION (PV) HTRB  TC UHAST H3TRB IOL ESD DPA Wire Bond Strength	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia  A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-001)  CDM (AEC-Q101-002)  AEC Q101-004 SEC. 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Cycles 160 Cycles 1000 Cycles 1000 Hrs 1000 Hrs 1000 Cycles 1000 Cycles 1000 Cycles 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/30  0/30  0/30  0/30  0/2  0/ min of 5	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	X = Test Needed  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 Pa	X = Test Needed  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 = Test Needed  X X X X X X X X X X X X X X X X X	
	MSL1 Preconditioning  EXTERNAL VISUAL  [EV]  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB  IOL  ESD  DPA  Wire Bond Strength BOND SHEAR	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 / PER JESD22 A-108  Ta=65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85% RH, 33.3 psia  A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)  AEC-Q101-003	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 168 Krs 500 Hrs 1000 Cycles 1000 Cycles 1000 Cycles 1000 Cycles 1000 Cycles 1000 Cycles 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 17500 Cycles 18000 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/70	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots  1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot 1 Assembly lot 1 Assembly lot	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass	X = Test Needed  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 = Test Needed  X X X X X X X X X X X X X X X X X	P
	MSL1 Preconditioning EXTERNAL VISUAL (EV) PARAMETRIC VERIFICATION (PV) HTRB  TC UHAST H3TRB IOL ESD DPA Wire Bond Strength	Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia  A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q101-001)  CDM (AEC-Q101-002)  AEC Q101-004 SEC. 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Cycles 160 Cycles 1000 Cycles 1000 Hrs 1000 Hrs 1000 Cycles 1000 Cycles 1000 Cycles 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/30  0/30  0/30  0/30  0/2  0/ min of 5	3 Assembly lots ion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots 3 wafer lots 1 wafer lot 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	X = Test Needed  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 Pa	X = Test Needed  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 = Test Needed  X X X X X X X X X X X X X X X X X	





Description: Addition of Passivation to X13 Mask Set Die types up to 200 V Bvceo assembled at NAT

	Category									Qual Device 3	
		B				Qual Device 1		Qual Device 2			
	Product	Part Number				FZT855		FZT955		FZT956	
	Assembly	Package Type				SOT223		SOT223		SOT223	
	Assembly	Package Size				3.5 x 6.5 mm		3.5 x 6.5 mm		3.5 x 6.5 mm	
	Wafer	Die Name(s)				CZ855TPD		FZT955TPD		FZT956TPD	
	Wafer	Die Size (W/L/Thickness) - After Saw				1.676 x 1.676 mm		1.6764 x 1.6764 mm		1.6764 x 1.6764 mm	
	Wafer	Die Process / Technology		1		Bipolar		Bipolar		Bipolar	
	Wafer	Wafer FAB/ Location		1		KFAB		OFAB		OFAB	
	Wafer	Wafer Diameter				150mm		150mm		150mm	
	Wafer	Front Metal Type				AlSiCu		AlSiCu		AlSiCu	
-							_				
	Wafer	Front Metal Layer Number/ Thickness				3.5um		3.0um		3.0um	
	Wafer	Back Metal Type (All Layers)				TiNiAg		TiNiAg		TiNiAg	
	Wafer	Back Metal Thickness (All Layers)				300 / 2600 / 5500 A		300 / 2600 / 5500 A		300 / 2600 / 5500 A	
	Wafer	Die Conforming Coating (Passivation)				Oxide/Nitride		Oxide/Nitride		Oxide/Nitride	
	Wafer	Die passivation thickness range				5000 / 5000A		5000 / 5000A		5000 / 5000 A	
	Wafer	No of masks Steps		1		5		6		6	
	Assembly	Die quantity per package (e.g. single or dual dies)				1		1		1	
	Assembly	Die Attach Method (DB Epoxy/Solder Type)				Soft Solder		Soft Solder		Soft Solder	
	Assembly	Die Attach Material/ Supplier				Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5	
	Assembly	Bond Wire/Clip Bond Material/ Supplier				Cu		Au		Cu	
	Assembly	Bond Type (at Die)				Thermosonic		Thermosonic		Thermosonic	
	Assembly	Bond Type (at LF)		J		Thermosonic		Thermosonic		Thermosonic	
	Assembly	No. of bond over active area		I		3		3		3	
	Assembly	Glass Transistion Temp		1		125°C		125°C		125°C	
	Assembly	Terminal Finish (Plating) Material		1		Matt Sn		Matt Sn		Matt Sn	
	Assembly	Header plating (Die Land Area)		1		Spot Ag		Spot Ag		Spot Ag	
				1							
	Assembly	Wire Diameter		I		1.7 mil	<b> </b>	2.0 mil		1.7 mil	
	Assembly	Leadframe Type		I		SOT-223		SOT-223	ļ	SOT-223	
	Assembly	Leadframe Material		I		K65/C194		K65/C194		K65/C194	
	Assembly	Lead Frame Manufacturer		I		Possehl/JIH LIN		Possehl/JIH LIN		Possehl/JIH LIN	
	Assembly	Molding Compound Type				GE1030		GE1030		GE1030	
	Assembly	Mold Compound Material Manufacturer		1		Nitto Denko		Nitto Denko		Nitto Denko	
	Assembly	Green Compound (Yes/No)		1		Yes		Yes		Yes	
	Assembly	Lead-Free (Yes/No)		1		Yes		Yes		Yes	
	Assembly	Assembly Site/ Location				NAT		NAT		NAT	
	Assembly	Test Site/ Location				NAT		NAT		NAT	
	Product	Max Junction Temp				150°C		150°C		150°C	
	Product	Max Thermal resistance Junc (case)				n/a		n/a		n/a	
	Product	Max Thermal resistance Junc (amibent)				78 °C/W		78 °C/W		78 °C/W	
	Product	DataSheet				DS33176		DS33190		DS36119	
		Reliability and Characterization Testing									
		Reliability and Characterization resting									
in AEC Q101 (D)	Test	Test Conditions	Duration / Limits	Accept on # Failed/ Sample Size per Lot	# of Lots	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail	X = Test Needed	Results Pass/Fail
Q101		Test Conditions  Bake 125C	Duration / Limits  24 Hrs	Failed/ Sample Size	# of Lots	X = Test Needed		X = Test Needed X		X = Test Needed	
Q101	MSL1 Pre-			Failed/ Sample Size per Lot	# of Lots  3 Assembly lots		Pass/Fail		Pass/Fail		Pass/Fai
Q101 (D)		Bake 125C	24 Hrs	Failed/ Sample Size per Lot SMD only,		X	Pass/Fail Pass	Х	Pass/Fail Pass	X	Pass/Fai
Q101 (D)	MSL1 Pre-	Bake 125C Soak 85C, 85% RH	24 Hrs 168Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10		X X	Pass/Fail Pass Pass	X X	Pass/Fail Pass Pass	X X	Pass/Fail Pass Pass
Q101 (D)	MSL1 Pre- conditioning	Bake 125C Soak 85C, 85% RH IR reflow 260C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat	3 Assembly lots	X X X X	Pass/Fail  Pass Pass Pass Pass Pass	X X X X	Pass/Fail  Pass Pass Pass Pass Pass	X X X	Pass/Fai  Pass Pass Pass Pass
2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25	3 Assembly lots tion parts submitted for testing 3 wafer lots	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass	X X X	Pass/Fai Pass Pass Pass Pass Pass
2 3	MSL1 Pre- conditioning EXTERNAL VISUAL (EV) PARAMETRIC	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77	3 Assembly lots tion parts submitted for testing	X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X	Pass/Fai Pass Pass Pass Pass Pass
2 2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25	3 Assembly lots tion parts submitted for testing 3 wafer lots	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass	X X X	Pass/Fai Pass Pass Pass Pass Pass
2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots	X X X X	Pass/Fail Pass Pass Pass Pass Pass Pass Pass Pas	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X	Pass/Fai Pass Pass Pass Pass Pass
2 3 4 5	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs	Failed/ Sample Size per Lot SMD only, for Test #7, 8, 9 & 10 All qualificat 0/25 0/77 0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots	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  Pass  Pass  Pass  Pass	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X	Pass/Fai Pass Pass Pass Pass Pass
2 3 4	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1	24 Hrs 168Hrs 3 cycles PER SPEC Operating Range, Per Data Sheet 168 Hrs 500 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots	X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X	Pass/Fai  Pass Pass Pass Pass Pass Pass Pass P
2 3 4 5	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots	X X X X X X X X X X X	Pass/Fail  Pass Pass Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X	Pass/Fai Pass Pass Pass Pass Pass Pass Pass Pa
2 2 3 4 5 5-1	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X X X X X X X X X X X X X X X X	Pass/Fai Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 500 Hrs 500 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X	Pass/Fail  Pass Pass Pass Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X	Pass/Fai Pass Pass Pass Pass Pass Pass Pass Pa
2 2 3 4 5 5-1	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 1000 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/77  0/77  0/77  0/77  0/77  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	X X X X X X X X X X X X X X X X X X X	Pass/Fai Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5-1	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  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  0/77  0/77  0/77  0/77  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots	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	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fai  Pass Pass Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass
2 2 3 4 5 5 5-1 7 9	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104 Ta=130C, 85%RH 33.3 psia	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	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/Fail  Pass Pass Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fai Pass Pass Pass Pass Pass Pass Pass Pa
2101 (D) 2 2 3 4 4 5 5 5-1 7 9	MSL1 Pre- conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  HTRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot SIMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  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  0/77  0/77  0/77	3 Assembly lots  tion parts submitted for testing  3 wafer lots  3 wafer lots  3 wafer lots  3 wafer lots	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	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fai Pass Pass Pass Pass Pass Pass Pass Pa
2101 (D) 2 2 3 4 4 5 5 5-1 7 9	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104 Ta=130C, 85%RH 33.3 psia A110	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	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/Fail  Pass Pass Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
(101 (D) 2 2 3 3 4 4 5 5 7 9 9	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot SIMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  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  0/77  0/77  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	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	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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
2 2 3 4 5 5 5-1 7 9 9 alt	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1 Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots	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	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	X X X X X X X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
2 2 3 4 5 5 5-1 7 9 9 alt	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Gycles 500 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 168 Trs 500 Hrs 1000 Cycles 96 Hrs 168 Trs 500 Hrs 168 Trs 500 Hrs 168 Trs 500 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots  tion parts submitted for testing  3 wafer lots  3 wafer lots  3 wafer lots  3 Assembly lots  3 wafer lots  3 wafer lots	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 Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5 5-1 7 9 9 alt	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia  A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 168 Hrs 500 Hrs	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots 3 wafer lots 3 wafer lots 3 wafer lots	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/Fail  Pass Pass Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fai Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5-1 7 9 9 alt 10	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 2520 Cycles 7560 Cycles 15000 Cycles	Failed/ Sample Size per Lot SIMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77	3 Assembly lots tion parts submitted for testing 3 wafer lots 3 wafer lots 3 wafer lots 3 Assembly lots 3 wafer lots 3 wafer lots 3 wafer lots 1 wafer lots	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/Fail  Pass Pass Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5 -1 7 9 9 alt 10	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001) CDM (AEC-Q100-005)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 1000 Cycles 168 Hrs 500 Hrs 168 Cycles 1000 Cycles 1000 Cycles 1500 Cycles 1500 Cycles 1500 Cycles 1500 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/30  0/30	3 Assembly lots  tion parts submitted for testing  3 wafer lots  1 wafer lots  1 wafer lot	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	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	X X X X X X X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5 5-1 7 9 9 alt 10 11	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB  IOL  ESD	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001) CDM (AEC-Q100-005) MM (AEC-Q101-002)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 2520 Cycles 7560 Cycles 15000 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/30  0/30  0/30	3 Assembly lots  tion parts submitted for testing  3 wafer lots  1 wafer lot  1 wafer lot  1 wafer lot	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	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 X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5 5-1 7 9 9 alt 10 11 12	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB  IOL  ESD  DPA	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Cycles 1500 Cycles 1500 Cycles 1500 Cycles 1500 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/70	3 Assembly lots tion parts submitted for testing 3 wafer lots 1 wafer lot 1 wafer lot 1 sysembly lot	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/Fail  Pass Pass Pass Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5 5-1 7 9 9 alt 10 11 12 23	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB  IOL  ESD  DPA  Wire Bond Strength	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001) CDM (AEC-Q101-001) CDM (AEC-Q101-005) MM (AEC-Q101-002) AEC Q101-004 SEC. 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Gycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Cycles 1000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET	Failed/ Sample Size per Lot SIMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/30  0/30  0/30  0/30  0/2  0/ min of 5	3 Assembly lots tion parts submitted for testing 3 wafer lots 1 wafer lots 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	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	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 X X X X X X X X X X X X X	Pass/Fa Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5 5-1 7 9 9 alt 10 11 12 23	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB  IOL  ESD  DPA	Bake 125C  Soak 85C, 85% RH  IR reflow 260C  MIL-STD-750 METHOD 2071  -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001)  CDM (AEC-Q100-005)  MM (AEC-Q101-002)  AEC Q101-004 SEC. 4	24 Hrs 168Hrs 3 cycles  PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Hrs 168 Cycles 500 Cycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Cycles 1500 Cycles 1500 Cycles 1500 Cycles 1500 Cycles	Failed/ Sample Size per Lot  SMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/70	3 Assembly lots tion parts submitted for testing 3 wafer lots 1 wafer lot 1 wafer lot 1 sysembly lot	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/Fail  Pass Pass Pass Pass  Pass	X X X X X X X X X X X X X X X X X X X	Pass/Fai Pass Pass Pass Pass Pass Pass Pass Pa
2 3 4 5 5-1 7	MSL1 Preconditioning  EXTERNAL VISUAL (EV)  PARAMETRIC  VERIFICATION (PV)  HTRB  TC  UHAST  H3TRB  IOL  ESD  DPA  Wire Bond Strength	Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C  Ta=150°C or Max Tj, Vd=100%, PER MIL-STD-750-1  Ta=150°C or Max Tj, Vd/Vr/Vcbo=80%, MIL-STD-750-1 / PER JESD22 A-108  Ta=-65C to 150C or Max Tj, PER JESD22A-104  Ta=130C, 85%RH 33.3 psia A110  Ta=85°C, 85% RH, with 80% Maximum Reverse Bias. JESD22A-101  MIL-STD-750 Method 1037 (N/A for TVS)  HBM (AEC-Q101-001) CDM (AEC-Q101-001) CDM (AEC-Q101-005) MM (AEC-Q101-002) AEC Q101-004 SEC. 4  MIL-STD-750 METHOD 2037 (JESD22-B116B)	24 Hrs 168Hrs 3 cycles PER SPEC  Operating Range, Per Data Sheet 168 Hrs 500 Hrs 1000 Hrs 168 Hrs 500 Hrs 1000 Gycles 1000 Cycles 96 Hrs 168 Hrs 500 Hrs 168 Hrs 500 Cycles 1000 Cycles PER DATA SHEET PER DATA SHEET PER DATA SHEET	Failed/ Sample Size per Lot SIMD only, for Test #7, 8, 9 & 10  All qualificat  0/25  0/77  0/30  0/30  0/30  0/30  0/2  0/ min of 5	3 Assembly lots tion parts submitted for testing 3 wafer lots 1 wafer lots 1 wafer lot 1 wafer lot 1 Assembly lot 1 Assembly lot	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 Pass	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



Description: Addition of Passivation to M11/M14 Mask Set OFAB/KFAB Die types up to 200 V Buceo assembled at SAT in SOT223, SOT89

				OFAB PNP Passivation Qual	ıl	OFAB NPN Passivation Qual		KFAB PNP Passivation Qua	ı	SOT223 Epoxy die attach qual		SOT223 Epoxy die attach qual		OFAB PNP Passivation qual		KFAB Passivation qual		KFAB Passivation qual		OFAB PNP Passivation qual	(	OFAB PNP Passivation qual	ıl
Category	7			QBS Device 1		QBS Device 2		QBS Device 3	<u>'</u>	QBS Device 4	1 [	QBS Device 5		QBS Source Device 6		QBS Source Device 7		QBS Source Device 8		QBS Source Device 9		QBS Source Device 10	
Product	Part Number			FZT855		FZT955		FZT956		ZXTN07060BGQTC		ZXTP07060BGQTC		ZXTP19100CZ		ZXTN4004ZQTA		ZXT849K		MJD31CUQ		MJD32CUQ	
Assembly	Package Type			SOT223		SOT223		SOT223		SOT223		SOT223		SOT89		SOT89		T0252-3L		TO252 (DPAK)		TO252 (DPAK)	
Assembly	Package Size			3.5 x 6.5 mm		3.5 x 6.5 mm		3.5 x 6.5 mm		3.5 x 6.5 mm		3.5 x 6.5 mm		4.5*4.1*1.5mm		4.5mm*4.1mm*1.5mm		9.91*6.58*2.29mm		9.91*6.58*2.29mm		9.91*6.58*2.29mm	
Wafer	Die Name(s)			FZT855TPD		FZT955TPD		CZ956PD		FZT651T3D		FZT751T3D		X19P100CTPYD		CZ10N150DD		CZ849D		FZT653CTPD		FZT753CTPD	
Wafer	Die Size (W/L/Thickness) - After Saw			1.6764 x 1.6764 mm		1.6764 x 1.6764 mm		1.676 x 1.676		1067μm x 1067μm		1067μm x 1067μm		1.067 x 1.067 x 0.254mm		0.914 x 0.864 x 0.229mm		1.676 x 1.676		1066.8*1066.8*279um		1066.8*1066.8*279um	
Wafer	Die Process / Technology			Bipolar		Bipolar		Bipolar		Bipolar		Bipolar		Gen5 BJT		Gen3 BJT		Bipolar		BJT/NPN		BJT/PNP	
Wafer	Wafer FAB/ Location			OFAB		OFAB		KFAB		OFAB		OFAB		OFAB/UK		KFAB / MO		KFAB		OFab/UK		OFab/UK	
Wafer	Wafer Diameter			150mm		150mm		150mm		150μm		150μm		6"		150mm		150mm		6"		6"	
Wafer	Front Metal Type			AlSiCu		AlSiCu		AlSiCu		AlsiCu		AlSiCu		AlSi 6um		AlsiCu0.5		AlSiCu		AlSiCu		AlSiCu	
Wafer Wafer	Front Metal Layer Number/ Thickness  Back Metal Type (All Layers)			3.0um TiNiAg		3.0um TiNiAg		3.5um TiNiAg		3μm TiNiVAg		3μm TiNiVAg		Ti/NiV/Ag		3.5µm Ti/NiV/Ag		3.5um TiNiAg		3um TiNiAg		3um TiNiAg	
Wafer	Back Metal Thickness (All Layers)			300 / 2600 / 5500 A	_	300 / 2600 / 5500 A		300 / 2600 / 5500 A		300Å/2600Å/5500Å		300Å/2600Å/5500Å		300Å 2600Å 5500Å	_	300Å/2600Å/5500Å		300 / 2600 / 5500 A		300/2600/5500		300/2600/5500	
Wafer	Die Conforming Coating (Passivation)			Oxide/Nitride		Oxide/Nitride		Oxide/Nitride		None None	1	None None		Ox/Nitride	_	None		Oxide/Nitride	_	Ox/Nitride		Ox/Nitride	
Wafer	Die passivation thickness range			5000 / 5000A		5000 / 5000A		5000 / 5000A		N/A		N/A		5000Å/5000Å		n/a		5000 / 5000A	-	5000A/5000A		5000A/5000A	
Wafer	No of masks Steps			5		6		5000 / 5000A		4		5		5000A/5000A		А		50007 5000A		5		6	
Assembly				1		1		1		1		1		1		1		1		Single		Single	
Assembly	Die Attach Method (DB Epoxy/Solder Type)			Soft Solder		Soft Solder		Soft Solder		Epoxy		Epoxy		Epoxy		Epoxy		Soft Solder		Epoxy		Epoxy	
Assembly				Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5		Pb92.5Sn5Ag2.5		8200TI		8200TI		8200TI/Henkel		8200TI/Henkel		Pb92.5Sn5Ag2.5		8200TI		8200TI	
	Bond Wire/Clip Bond Material/ Supplier			Cu		Cu		Cu		Cu		Cu		Cu		Cu		Cu		Cu		Cu	
Assembly	Bond Type (at Die)			Thermosonic		Thermosonic		Thermosonic		Thermosonic Ball Bond		Thermosonic Ball Bond		Thermosonic Ball Bond		Thermosonic Ball Bond		Thermosonic		Ball Thermosonic		Ball Thermosonic	
Assembly	Bond Type (at LF)			Thermosonic		Thermosonic		Thermosonic		Thermosonic Stitch Bond		Thermosonic Stitch Bond		Thermosonic Stitch Bond		Thermosonic Stitch Bond		Thermosonic	1	Stitch Thermosonic		Stitch Thermosonic	
Assembly	No. of bond over active area			3		3		3		2		2		4		3		3		2		2	
Assembly	Glass Transistion Temp			130°C		130°C		130°C		130°C		130°C		130°C		130°C		130°C		130°C		130°C	
Assembly	Terminal Finish (Plating) Material			Matt Sn		Matt Sn		Matt Sn		Matt Sn	1	Matt Sn		Sn Matte		Sn Matte		Matt Sn	i	Matte Sn	i i	Matte Sn	
Assembly	Header plating (Die Land Area)			Spot Ag		Spot Ag		Spot Ag		Spot Ag		Spot Ag		Spot Ag		Spot Ag		Spot Ag	1	Spot Ag		Spot Ag	
Assembly	Wire Diameter			1.7 mil		1.7 mil		1.7 mil		1.7 mil		1.7 mil		1.7 mil		1 mil		1.7 mil		1.7 mil		1.7 mil	
Assembly	Leadframe Type			SOT-223A		SOT-223A		SOT-223A		SOT223 A		SOT223 A		SOT-89 3L		SOT89-3L		TO252-3L (Spot Ag)		TO252-3L B		TO252-3L B	
Assembly				CDA194FH		CDA194FH		CDA194FH		CDA194FH		CDA194FH		CDA194HH		CDA194HH		12SnOFC-H		K81		K81	
Assembly	Lead Frame Manufacturer			XMYH		XMYH		XMYH		XMYH	1	XMYH		PBE/HITACHI		PBE/HITACHI				Ningbo		Ningbo	
Assembly				EME-G600		EME-G600		EME-G600		EME-G600		EME-G600		EME-G600		EME-G600		EME-G700		EME-G700		EME-G700	
Assembly				SUMITOMO		SUMITOMO		SUMITOMO		Sumitomo		Sumitomo		Sumitomo		Sumitomo		SUMITOMO		Sumitomo		Sumitomo	
Assembly	Green Compound (Yes/No)			Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Assembly Assembly	Lead-Free (Yes/No) Assembly Site/ Location			Yes SAT		Yes SAT		Yes		Yes SAT		Yes SAT		Yes		Yes		Yes SAT		Yes SAT/China		Yes SAT/China	
Assembly	Test Site/ Location			SAT		SAT		SAT		SAT		SAT		SAT / Shanghai, PRC SAT / Shanghai, PRC		SAT / Shanghai, PRC SAT / Shanghai, PRC		SAT		SAT/China		SAT/China	
Product	Max Junction Temp				_							3711		150°C	_			4					
				150°C		150°C		150°C		150°C		150°C				150°C		150°C		150°C		150°C	
Product Product				n/a 78 °C/W		n/a 78 °C/W		n/a 78 °C/W		n/a		n/a		N/A		n/a		n/a 59 °C/W		- 59°C/W		- 59°C/W	
Product	Max Thermal resistance Junc (amibent)																					59°C/W	
										62.5°C/W		62.5°C/W		68°C/W		83°C/W							
Product				DS33176		DS33190		DS36119		ds37254		62.5°C/W ds37255		68°C/W DS33739		DS35457		DS33641		DS30749		DS30750	
Product	DataSheet Reliability and Characterization Testing																					DS30750	
# in AEC-Q101 Test (D)	Reliability and Characterization Testing  Test Conditions	Accept Duration / Limits Failed/	Sample # of Lots er Lot		Results Pass/Fail	DS33190 X = Test Needed	Results Pass/Fail		Results Pass/Fail		Results Pass/Fail		Results Pass/Fail		Results Pass/Fail	DS35457 X = Test Needed	Results Pass/Fail	DS33641  X = Test Needed	Results Pass/Fail		Results Pass/Fail	X = Test Needed	Results Pass/Fail
# in AEC-Q101 Test (D)	Reliability and Characterization Testing	Duration / Limits Failed/ Size po	Sample # of Lots er Lot	D\$33176	Results Pass/Fail	D533190	Pass/Fail PASS	D536119	Pass/Fail PASS	ds37254		ds37255	Pass/Fail PASS	DS33739	Pass/Fail Pass	D\$35457		D\$33641		DS30749	Pass/Fail PASS		Pass/Fail PASS
# in AEC-Q101 (D) Test (D) MSL1 Pre-	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH	Duration / Limits   Failed / 1	Sample # of Lots er Lot	D\$33176	PASS	DS33190 X = Test Needed	PASS PASS	D536119  X = Test Needed  X  X	PASS PASS	ds37254  QBS Test Completed  X  X	PASS PASS	ds37255	PASS PASS	DS33739	Pass/Fail Pass Pass	DS35457  X = Test Needed  X X	Pass/Fail Pass Pass	DS33641  X = Test Needed	PASS PASS PASS	DS30749	PASS PASS	X = Test Needed	PASS PASS
# in AEC- Test (D)	Reliability and Characterization Testing  Test Conditions  Bake 125C	Duration / Limits Failed/ Size po	Sample # of Lots er Lot	DS33176  X = Test Needed  X		DS33190  X = Test Needed  X	Pass/Fail PASS	DS36119  X = Test Needed  X	Pass/Fail PASS	ds37254  QBS Test Completed  X	Pass/Fail PASS	ds37255  X = Test Needed  X	Pass/Fail PASS	DS33739  X = Test Needed  X	Pass/Fail Pass	DS35457  X = Test Needed  X	Pass/Fail Pass	DS33641  X = Test Needed  X	Pass/Fail PASS	DS30749  X = Test Needed  X	Pass/Fail PASS	X = Test Needed X	Pass/Fail PASS
# in AEC-Q101 (D)  2 MSL1 Preconditioning  EXTERNAL VISUAL (EV)	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH	Duration / Limits   Failed   Size pr	Sample # of Lots er Lot 18, 9 a 3 Assembly lots 3 alification parts submitted for testing	DS33176  X = Test Needed  X	PASS PASS PASS	DS33190  X = Test Needed  X	PASS PASS PASS PASS	D536119  X = Test Needed  X  X	PASS PASS PASS PASS	ds37254  QBS Test Completed  X  X	PASS PASS PASS PASS PASS	ds37255  X = Test Needed  X	PASS PASS PASS PASS	DS33739  X = Test Needed  X	Pass/Fail Pass Pass	DS35457  X = Test Needed  X X	Pass/Fail Pass Pass	DS33641  X = Test Needed  X	PASS PASS PASS PASS	DS30749  X = Test Needed  X	PASS PASS PASS PASS PASS	X = Test Needed X	PASS PASS PASS PASS PASS
# in AEC-Q101 Test (D)   2 MSL1 Preconditioning   3 EXTERNAL VISUAL (EV) PARAMETRIC	Reliability and Characterization Testing  Test Conditions  Bake 125C  Soak 85C, 85% RH  IR reflow 260C	Duration / Limits	Sample # of Lots er Lot 18, 9 a 3 Assembly lots 3 alification parts submitted for testing	DS33176  X = Test Needed  X X X	PASS PASS	DS33190  X = Test Needed  X X X	PASS PASS PASS PASS	X = Test Needed  X X X	PASS PASS PASS	ds37254  QBS Test Completed  X  X  X	PASS PASS PASS PASS	ds377255  X = Test Needed  X  X  X	PASS PASS PASS PASS	X = Test Needed  X = X  X	Pass/Fail  Pass Pass Pass Pass	DS35457  X = Test Needed  X  X  X	Pass/Fail  Pass Pass Pass Pass	DS33641  X = Test Needed  X  X  X	PASS PASS PASS PASS	DS30749  X = Test Needed  X  X  X	PASS PASS PASS PASS	X = Test Needed X	PASS PASS PASS
#in AEC-Q101 (D)  2 MSL1 Preconditioning  EXTERNAL VISUAL (EV)	Reliability and Characterization Testing Test Conditions  Bake 125C Soak 855, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C	Duration / Limits	Sample # of Lots Irl Lot Illy, for 8, 9 & 3 Assembly lots 1 Illification parts submitted for testing 15 15 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18	D533176  X = Test Needed  X  X  X	PASS PASS PASS PASS	D533190  X = Test Needed  X  X  X	PASS PASS PASS PASS PASS	D536119  X = Test Needed  X  X  X	Pass/Fail  PASS PASS PASS PASS PASS	ds37254  QBS Test Completed  X  X  X  X	PASS PASS PASS PASS PASS PASS	ds37255  X = Test Needed  X  X  X	PASS PASS PASS PASS PASS	X = Test Needed  X = X  X  X	Pass/Fail  Pass Pass Pass Pass Pass	D\$35457  X = Test Needed  X X X	Pass/Fail  Pass Pass Pass Pass Pass	DS33641  X = Test Needed  X  X  X	PASS PASS PASS PASS PASS PASS	DS30749  X = Test Needed  X X X X	PASS PASS PASS PASS PASS	X = Test Needed X	PASS PASS PASS PASS PASS
# in AEC-Q101 Test (D)    2  MSL1 Pre-conditioning    EXTERNAL VISUAL (EV)    4  PARAMETRIC VERIFICATION (PV)	Reliability and Characterization Testing Test Conditions Bake 125C Soak 85C, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071	Duration / Limits   Failed / 15/12   SMP to 168Hrs   3 cycles   11	Sample # of Lots r Lot 18, 9 & 3 Assembly lots 19, 19, 19, 19, 19, 19, 19, 19, 19, 19,	D533176  X = Test Needed  X  X  X	PASS PASS PASS	D533190  X = Test Needed  X  X  X	PASS PASS PASS PASS	D536119  X = Test Needed  X  X  X	PASS PASS PASS PASS	ds37254  QBS Test Completed  X  X  X  X	PASS PASS PASS PASS PASS	ds37255  X = Test Needed  X  X  X	PASS PASS PASS PASS PASS PASS	DS33739  X = Test Needed  X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass	D\$35457  X = Test Needed  X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass	DS33641  X = Test Needed  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	DS30749  X = Test Needed  X X X X	PASS PASS PASS PASS PASS	X = Test Needed X	PASS PASS PASS PASS PASS PASS
# in AEC-Q101 Test (D1)   2 MSL1 Preconditioning   3 EXTERNAL VISUAL (EV) PARAMETRIC	Reliability and Characterization Testing Test Conditions  Bake 125C Soak 855, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C	Duration / Limits   Failed / Size pr	Sample # of Lots r Lot 8, 9 & 3 Assembly lots 3 a Marer lots 3 wafer lots	D533176     X = Test Needed     X	PASS PASS PASS PASS PASS	D533190  X = Test Needed  X X X X X X	PASS PASS PASS PASS PASS PASS PASS	DS36119  X = Test Needed  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS	ds37254  QBS Test Completed  X X X X X	PASS PASS PASS PASS PASS PASS PASS	x = Test Needed  x	PASS PASS PASS PASS PASS	X = Test Needed  X = X  X  X  X	Pass Pass Pass Pass Pass Pass Pass Pass	D\$35457  X = Test Needed  X X X X X	Pass/Fail  Pass Pass Pass Pass Pass	D\$33641  X = Test Needed  X  X  X  X  X	PASS PASS PASS PASS PASS PASS	DS30749  X = Test Needed  X X X X X X	PASS PASS PASS PASS PASS PASS	X = Test Needed  X X X X X	PASS PASS PASS PASS PASS
# in AEC-Q101 Test (D)    2  MSL1 Pre-conditioning    EXTERNAL VISUAL (EV)    4  PARAMETRIC VERIFICATION (PV)	Reliability and Characterization Testing Test Conditions  Bake 125C Soak 855, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C	Duration / Limits   Failed / Size p	isample # of Lots ref Lot  8, 9 & 3 Assembly lots  3 alification parts submitted for testing  25 3 wafer lots  77 3 wafer lots	D533176     X = Test Needed     X	PASS PASS PASS PASS PASS PASS PASS	D533190  X = Test Needed  X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS	DS36119  X = Test Needed  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	ds37254  QBS Test Completed  X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS	x = Test Needed  x	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  X = X  X  X  X  X  X	Pass/Fail  Pass	DS35457  X = Test Needed  X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	D\$33641  X = Test Needed  X  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	DS30749  X = Test Needed  X X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
# in AEC-Q101 Test (D) MSL1 Pre-conditioning  EXTERNAL VISUAL (EV)  PARAMETRIC VERIFICATION (PV)	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed,   Size pr	asample # of Lots ref Lot   Ny, for   8, 9 & 3 Assembly lots   3   3   3   3   3   3   3   3   3	D533176     X = Test Needed     X	PASS PASS PASS PASS PASS PASS PASS PASS	D533190  X = Test Needed  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	DS36119     X = Test Needed     X	PASS PASS PASS PASS PASS PASS PASS PASS	ds37254  QBS Test Completed  X X X X X X X X X X X X X X X X X X	Pass/Fail  PASS	X = Test Needed  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 = Test Needed  X = X  X  X  X  X  X	Pass Pass Pass Pass Pass Pass Pass Pass	D\$35457  X = Test Needed  X X X X X X X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	D\$33641  X = Test Needed  X  X  X  X  X  X  X  X  X  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	DS30749  X = Test Needed  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 = Test Needed  X X X X X	PASS/Fail  PASS PASS PASS  PASS  PASS  PASS  PASS  PASS  PASS  PASS  PASS  PASS  PASS
# in AEC-Q101 Test (D) MSL1 Pre-conditioning EXTERNAL VISUAL (EV) PARAMETRIC VERIFICATION (PV).	Reliability and Characterization Testing Test Conditions  Bake 125C Soak 855, 85% RH IR reflow 260C MIL-STD-750 METHOD 2071 -55C, 25C, 85C, 125C, 150C	Duration / Limits	isample # of Lots ref Lot  8, 9 & 3 Assembly lots  3 alification parts submitted for testing  25 3 wafer lots  77 3 wafer lots	D533176	PASS PASS PASS PASS PASS PASS PASS PASS	D533190  X = Test Needed  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 PA	D536119     X = Test Needed     X	PASS PASS PASS PASS PASS PASS PASS PASS	ds37254  QBS Test Completed  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 PA	ds37255	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  X = Test Needed  X	Pass/Fail           Pass	D\$35457  X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	D533641  X = Test Needed  X  X  X  X  X  X  X  X  X  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	DS30749  X = Test Needed  X  X  X  X  X  X  X  X  X  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  X X X X X	PASS/Fail  PASS PASS PASS PASS PASS PASS PASS PA
# in AEC-Q101 Test (D) MSL1 Pre-conditioning EXTERNAL VISUAL (EV) PARAMETRIC VERIFICATION (PV).	Reliability and Characterization Testing   Test Conditions	Duration / Limits Failed, 5te pt 5te pt 16th 7te pt 16	isample # of Lots  # o	D533176     X = Test Needed     X	PASS PASS  PASS  PASS  PASS  PASS PASS	D533190  X = Test Needed  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	DS36119   X = Test Needed   X   X   X   X   X   X   X   X   X	PASS PASS PASS PASS PASS PASS PASS PASS	ds37254  QBS Test Completed  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 PA	X = Test Needed  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 = Test Needed  X = X  X  X  X  X  X  X  X  X  X  X  X  X	Pass/Fail           Pass	D\$35457  X = Test Needed  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 Pa	D533641  X = Test Needed  X  X  X  X  X  X  X  X  X  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	DS30749  X = Test Needed  X  X  X  X  X  X  X  X  X  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  X X X X X	PASS PASS PASS PASS PASS PASS PASS PASS
# in AEC-Q101	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed,	sample # of Lots rer Lot  8, 9 & 3 Assembly lots alification parts submitted for testing  15 & 3 wafer lots 77 & 3 wafer lots 77 & 3 Assembly lots	D533176     X = Test Needed     X	PASS PASS PASS PASS PASS PASS PASS PASS	D533190  X = Test Needed  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	D536119     X = Test Needed     X	PASS PASS PASS PASS PASS PASS PASS PASS	Gs37254	PASS/Fail  PASS PASS PASS PASS PASS PASS PASS PA	ds37255   X = Test Needed   X   X   X   X   X   X   X   X   X	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  X	Pass/Fail           Pass	D\$35457  X = Test Needed  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  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass  Pass	D533641  X = Test Needed  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	DS30749  X = Test Needed  X  X  X  X  X  X  X  X  X  X  X  X  X	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  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
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# in AEC-Q101	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed,	# of Lots	D533176     X = Test Needed     X	PASS PASS PASS PASS PASS PASS PASS PASS	D533190  X = Test Needed  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 PA	DS36119   X = Test Needed   X   X   X   X   X   X   X   X   X	PASS PASS PASS PASS PASS PASS PASS PASS	ds37254	PASS/Fail  PASS PASS PASS PASS PASS PASS PASS PA	ds37255   X = Test Needed   X   X   X   X   X   X   X   X   X	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  X	Pass/Fail           Pass	DS35457  X = Test Needed  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 Pa	DS33641	PASS PASS PASS PASS PASS PASS PASS PASS	DS30749  X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail           PASS	X = Test Needed  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 P
# in AEC-Q101  2	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed	# of Lots	D533176   X = Test Needed   X   X   X   X   X   X   X   X   X	PASS PASS PASS PASS PASS PASS PASS PASS	D533190  X = Test Needed  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 PA	D536119     X = Test Needed     X	Pass/Fail           PASS	Gs37254	PASS PASS PASS PASS PASS PASS PASS PASS	ds37255  X = Test Needed  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 = Test Needed  X = Test Needed  X	Pass   Fall	D\$35457  X = Test Needed  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 Pa	D533641  X = Test Needed  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 PA	DS30749  X = Test Needed  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 PA	X = Test Needed  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 PA
# in AEC-Q101   Test (0)	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed,   Site process   Site	Sample # of Lots  # of	D533176	PASS PASS PASS PASS PASS PASS PASS PASS	D533190  X = Test Needed  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	DS36119   X = Test Needed   X   X   X   X   X   X   X   X   X	Pass/Fail           PASS	Gs37254   Gs37	Pass/Fail   Pass   Pa	X = Test Needed	Pass/Fail  PASS PASS PASS PASS PASS PASS PASS PA	X = Test Needed  X = Test Needed  X	Pass   Fall   Pass   Pass	DS35457   X = Test Needed   X   X   X   X   X   X   X   X   X	Pass/Fail   Pass   Pa	D533641	Pass/Fail           PASS           PASS	DS30749  X = Test Needed  X X X X X X X X X X X X X X X X X	Pass   Fall     PASS   PASS     PASS	X = Test Needed  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 PA
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# in AEC-Q101   Test (0)	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed,   Size pr   Sixe	# of Lots	D533176	PASS   PASS	D533190  X = Test Needed  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	DS36119   X = Test Needed   X   X   X   X   X   X   X   X   X	PASS PASS PASS PASS PASS PASS PASS PASS	Gs37254   Gs37	Pass/Fail  Pass    PASS   PASS   PASS   PASS   PASS   PASS   PASS   PASS   PASS    PASS    PASS   PASS   PASS   PASS   PASS   PASS    PASS   PASS   PASS   PASS   P	X	Pass Fall	X = Test Needed  X = Test Needed  X	Pass   Fall   Pass   Pass	DS35457  X = Test Needed  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 Pa	D533641  X = Test Needed  X  X  X  X  X  X  X  X  X  X  X  X  X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	DS30749  X = Test Needed  X X X X X X X X X X X X X X X X X	Pass   Fall     PASS   PASS     PASS   PASS     PASS	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail   Pass   Pa
# in AEC- Q101  2	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed;   Steep	# of Lots	D533176	PASS   PASS	D533190  X = Test Needed  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	D536119     X = Test Needed     X	Pass/Fail  PASS PASS PASS PASS PASS PASS PASS PA	Ges7754   Ges7	PASS PASS PASS PASS PASS PASS PASS PASS	ds37255  X = Test Needed  X X X X X X X X X X X X X X X X X	Pass   Fall	X = Test Needed  X = Test Needed  X	Pass   Fall	D\$35457  X = Test Needed  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 Pa	D533641  X = Test Needed  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 PA	DS30749  X = Test Needed  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 PA	X = Test Needed  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 PA
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# in AEC-Q101 Test (Q0)    2	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed,   Steep	# of Lots	D533176	PASS PASS PASS PASS PASS PASS PASS PASS	D533190  X = Test Needed  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	DS36119     X = Test Needed     X	Pass/Fail  PASS PASS PASS PASS PASS PASS PASS PA	Complete   Complete	PASS PASS PASS PASS PASS PASS PASS PASS	ds37255   X = Test Needed   X   X   X   X   X   X   X   X   X	PASS PASS PASS PASS PASS PASS PASS PASS	X = Test Needed  X	Pass   Fall	D\$35457  X = Test Needed  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 Pa	D533641  X = Test Needed  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 PA	DS30749  X = Test Needed  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 PA	X = Test Needed  X X X X X X X X X X X X X X X X X	Pass/Fail  Pass Fail  Pass Pass  Pas
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# in AEC- Q101  2	Reliability and Characterization Testing   Test Conditions	Duration / Limits   Failed;   Size pi	# of Lots   # of Lots	D533176   X = Test Needed   X   X   X   X   X   X   X   X   X	PASS   PASS	D533190  X = Test Needed  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	PASS PASS PASS PASS PASS PASS PASS PASS	Ges 77254   Ges	PASS PASS PASS PASS PASS PASS PASS PASS	X	Pass/Fail  PASS PASS PASS PASS PASS PASS PASS PA	X = Test Needed  X = Test Needed  X	Pass   Fall	DS35457   X = Test Needed   X   X   X   X   X   X   X   X   X	Pass/Fail  Pass Pass Pass Pass Pass Pass Pass Pa	DS33641	Pass/Fail  PASS PASS PASS PASS PASS PASS PASS PA	DS30749  X = Test Needed  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 PA	X = Test Needed  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 PA