

Product Change Notification / RMES-15ZREP293

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15-Jan-2021

Product Category:

Memory

PCN Type:

Manufacturing Change

Notification Subject:

CCB 3379.002 and CCB 3280.001 Final Notice: Qualification of MTAI as an additional assembly and final test site for selected Atmel AT24C0xD, AT24C16D and AT24C32E device families available in 8L SOIC packages.

Affected CPNs:

RMES-15ZREP293_Affected_CPN_01152021.pdf RMES-15ZREP293_Affected_CPN_01152021.csv

Notification Text:

PCN Status: Final notification

PCN Type: Manufacturing Change

Microchip Parts Affected: Please open one of the icons found in the Affected CPNs section above.

NOTE: For your convenience Microchip includes identical files in two formats (.pdf and .xls).

Description of Change: Qualification of MTAI as an additional assembly and final test site for selected Atmel AT24C0xD, AT24C16D and AT24C32E device families available in 8L SOIC packages.

Pre Change:

Assembled at ANAP assembly site using palladium coated copper (PdCu) bond wire, 8290 die attach and G700LS mold compound material with NiPdAu lead plating in 60 x 60 mils paddle size without lead lock.or Assembled at ASSH assembly site using palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900GC die attach and CEL-9240HF10AK mold compound material with Matte tin lead plating in 93 x 93 mils paddle size without lead lock. and

Tested at ASSH or ANAP Final Test site.

Post Change:

Assembled at ANAP assembly site using palladium coated copper (PdCu) bond wire, 8290 die attach and G700LS mold compound material with NiPdAu lead plating in 60 x 60 mils paddle size without lead lock. **Or**Assembled at ASSH assembly site using palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900GC die attach and CEL-9240HF10AK mold compound material with Matte tin lead plating in 93 x 93 mils paddle size without lead lock. **or** Assembled at MTAI assembly site using gold (Au) bond wire, 8390A die attach and G600V mold compound material with Matte tin lead plating in 90 x 90 mils paddle size with lead lock. **and** Tested at ASSH, ANAP or MTAI Final Test site.

Pre and Post Change Summary:

		Pre Ch	ange		Post Change				
Assembly Sit	e Philipp	r Technology bines (P1/P2), C. (ANAP)	S	ASE Advanced emiconductor anghai) Co., Ltd. (ASSH)	Amkor Technology Philippines (P1/P2), INC. (ANAP)	ASE Advanced Semiconductor (Shanghai) Co., Ltd. (ASSH)	Microchip Technology Thailand (HQ) (MTAI)		
Wire materia	al	PdCu		CuPdAu	PdCu	CuPdAu	Au		
Die attach material		8290		EN-4900GC	8290	EN-4900GC	8390A		
Molding compound material		G700LS	CE	EL-9240HF10AK	G700LS	CEL-9240HF10AK	G600V		
Lead frame material	(CDA194		CDA194	CDA194	CDA194	CDA194		
Paddle size	60	x 60 mils		93 x 93 mils	60 x 60 mils	93 x 93 mils	90 x 90 mils		
Lead Lock		No		No	No	No	Yes		
Lead Plating	,	NiPdAu		Matte tin	NiPdAu Matte tin		Matte Tin		
	•	Р	re Ch	nange		Post Change			
Final Tes	st Site	ASE Advance Semiconduct (Shanghai) Co Ltd. (ASSH)	or o.,	Amkor Technology Philippines (P1/P2), INC. (ANAP)	ASE Advanced Semiconductor (Shanghai) Co., Ltd. (ASSH)	Amkor Technology Philippines (P1/P2), INC. (ANAP)	Microchip Technology Thailand (MTAI)		
Base Quantity	Tube	100		100	100	100	100		
Multiple (BQM)	Tape and Reel	4000		4000	4000	4000	4000		
Pin1	Tube	Pin 1 side (Bla	ck)	Not Applicable	Pin 1 side (Black)	Not Applicable	Pin 1 side (White)		
Orientation	Tape and Reel	Quadrant 1		Quadrant 1	Quadrant 1	Quadrant 1	Quadrant 1		
Tub	e			Minor din	or dimensional changes – see attachment				

Carrier Tape	No change			
Cover Tape	Minor dimensional changes – see attachment			
Plastic Reel	Minor dimensional changes – see attachment			
Packing Procedure for Tube and Tape & Reel	See attachment			

Impacts to Data Sheet: None

Change Impact: None

Reason for Change: To improve on-time delivery performance by qualifying MTAI as an additional assembly and final test

site

Change Implementation Status: In Progress

Estimated First Ship Date: February 15, 2021 (date code: 2108)

NOTE: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

	January 2021			February 2021						
Workweek	01	02	03	04	05	06	07	08	09	10
Qual Report Availability			Χ							
Final PCN Issue Date			Χ							
Estimated First Ship Date								Χ		

Method to Identify Change: Traceability code

Qualification Report: Please open the attachments included with this PCN labeled as PCN_#_Qual_Report. PCN_RMES-15ZREP293_Qual_Report – Assembly sitePCN_RMES-15ZREP293_Qual_Report – Final Test site

Revision History: January 15, 2021: Issued final notification. Attached the qualification report. Provided estimated first ship date to be on February 15, 2021.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachments:

PCN_RMES-15ZREP293 _Qual_Report - Assembly Site.pdf PCN_RMES-15ZREP293_Qual_Report - Final Test.pdf PCN_RMES-15ZREP293_Pre and Post Change Summary.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

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If you wish to <u>change your PCN profile, including opt out,</u> please go to the <u>PCN home page</u> select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

RMES-15ZREP293 - CCB 3379.002 and CCB 3280.001 Final Notice: Qualification of MTAI as an additional assembly and final test site for selected Atmel AT24C0xD, AT24C16D and AT24C32E device families available in 8L SOIC packages.

Affected Catalog Part Numbers (CPN)

AT24C01D-SSHM-B

AT24C02D-SSHM-B

AT24C01D-SSHM-T

AT24C02D-SSHM-T

AT24C04D-SSHM-B

AT24C04D-SSHM-T

AT24C08D-SSHM-B

AT24C08D-SSHM-T

AT24C16D-SSHM-B

AT24C16D-SSHM-T

AT24C32E-SSHM-B

AT24C32E-SSHM-T

Date: Thursday, January 14, 2021



QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: RMES-15ZREP293

Date: December 04, 2020

Qualification of MTAI as an additional assembly site for selected Atmel AT24C0xD, AT24C16D and AT24C32E device families available in 8L SOIC packages.



Purpose Qualification of MTAI as an additional assembly site for selected Atmel AT24C0xD,

AT24C16D and AT24C32E device families available in 8L SOIC packages.

CN ES220208

QUAL ID Q18136 Rev. A **MP CODE** 365S6QC2XA00

Part No. 25LC640AT-H/SN

Bonding No. BDE-004738 REV. 03

CCB No. 3379 and 3379.001

Package

Type 8L SOIC Package size 150 mils

Lead Frame

Paddle size90 x 90 milsMaterialCDA194

Surface Bare Cu on paddle

Process Stamped

Lead Lock Yes

Part Number 10100841
Treatment Roughened

Material

Epoxy 8390A
Wire Au wire
Mold Compound G600V
Plating Composition Matte Tin



Manufacturing Information:

Assembly Lot No.	Wafer No.	Date Code
MTAI191002659.000	MCS0518466473.300	1823J79
MTAI191003913.000	MCS0518466473.300	1823Q4H
MTAI191003922.000	MCS0518466473.300	1823Q7C

Result	X Pass	Fail	
Roodit			

8L SOIC (.150") assembled by MTAI pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT						
Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020E)	IPC/JEDE C J-STD- 020E	135	0/135	Pass	

Precondition Prior Perform	Electrical Test :+25°C,85°C,125°C and 150°C System: NEXTEST_PT	JESD22- A113	693(0)	693		Good Devices
Reliability Tests (At MSL Level 1)	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max			693		
	System: Vitronics Soltec MR1243					
	Electrical Test : +25°C,85°C,125°C and 150°C System: NEXTEST_PT			0/693	Pass	

	PACKAGE QUALIFICA	ATION	REP	ORT		
Test Number	Test Condition	Standard/	Qty.	Def/SS.	Result	Remarks
(Reference)		Method	(Acc.)			
	Stress Condition: -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22- A104		231		Parts had been pre-conditioned at 260°C
	Electrical Test: +85°C,125°C and 150°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
Temp Cycle	Stress Condition: -65°C to +150°C, 2000 Cycles System: TABAI ESPEC TSA-70H			231		
	Electrical Test: +85°C,125°C and 150°C System: NEXTEST_PT		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (> 2.5 grams)		15 (0)	0/15	Pass	
	Bond Shear (>15.00 grams)		15 (0)	0/15	Pass	
UNBIASED-	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		231		Parts had been pre-conditioned at 260°C
HAST	Electrical Test: +25°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 5.5 Volts System: HAST 6000X	JESD22- A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 25°C,85°C,125°C and 150°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot

	PACKAGE QUALIFICATION REPORT							
Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks		
	Stress Condition: Bake 175°C, 500 hrs System: SHEL LAB	JESD22- A103		45		45 units		
High Temperature Storage Life	Electrical Test:+25°C,85°C,125°C and 150°C System: NEXTEST_PT		45(0)	0/45	Pass			
J	Stress Condition: Bake 175°C, 1000 hrs System: SHEL LAB			45	Pass	45 units		
	Electrical Test :+ 25°C,85°C,125°C and 150°C System: NEXTEST_PT		45(0)	0/45	rass			
Bond Strength	Wire Pull (> 2.5 grams)	M2011	30 (0) Wires	0/30	Pass			
Data Assembly	Bond Shear (>15.00 grams)	JESD22- B116	30 (0) bonds	0/30	Pass			

CCB 3379.002 and 3280.001 Pre and Post Change Summary PCN #: RMES-15ZREP293



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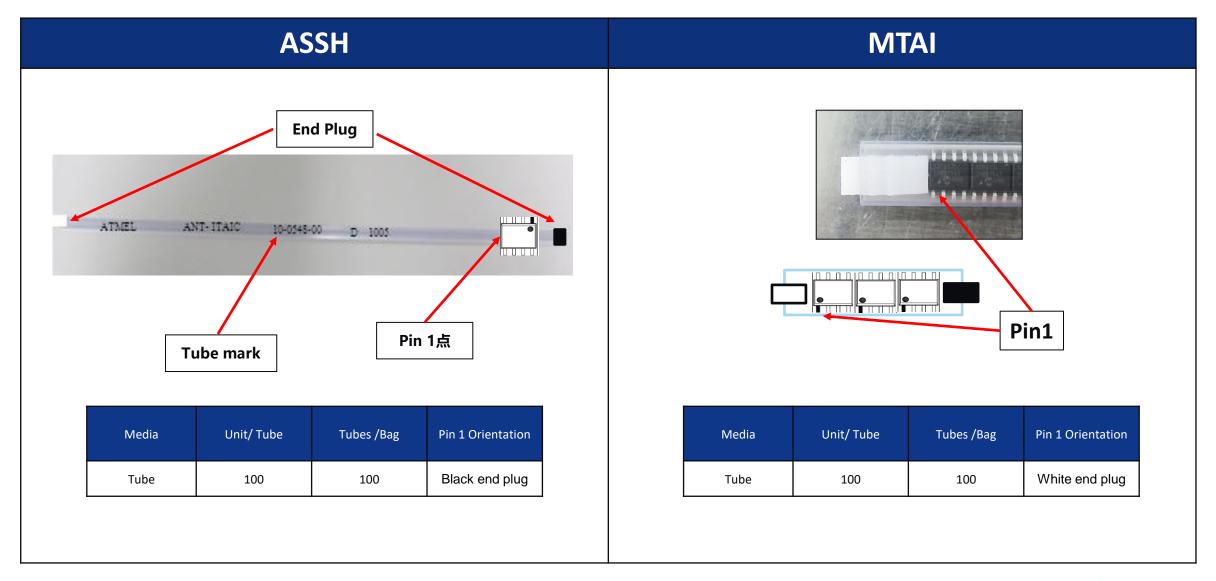
Qualification of MTAI as an additional assembly and final test site for selected Atmel AT24C0xD, AT24C16D and AT24C32E device families available in 8L SOIC packages.

LEAD FRAME COMPARISON

AN	AP	AS	SH		MTAI
	5 4 4 S	8 7	6 5		7 6 5
Paddle size	60 x 60 mils	Paddle size	93 x 93 mils	Paddle size	90 x 90 mils
Lead Lock	No	Lead Lock	No	Lead Lock	Yes
Lead Plating	NiPdAu	Lead Plating	Matte tin	Lead Plating	Matte Tin

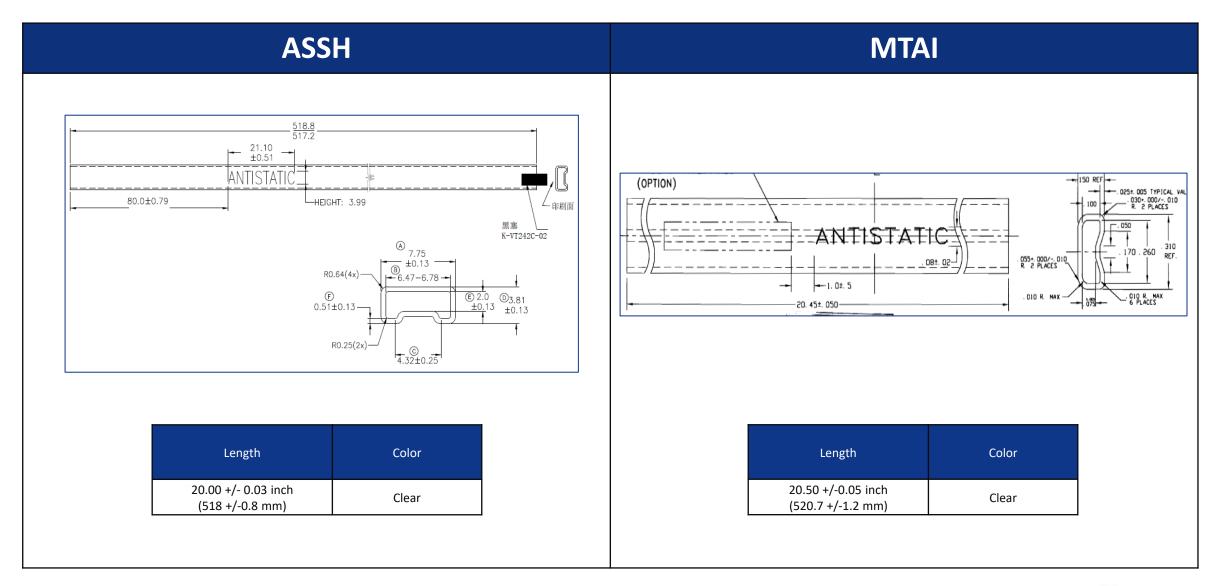


TUBE BQM AND PIN1 ORIENTATION



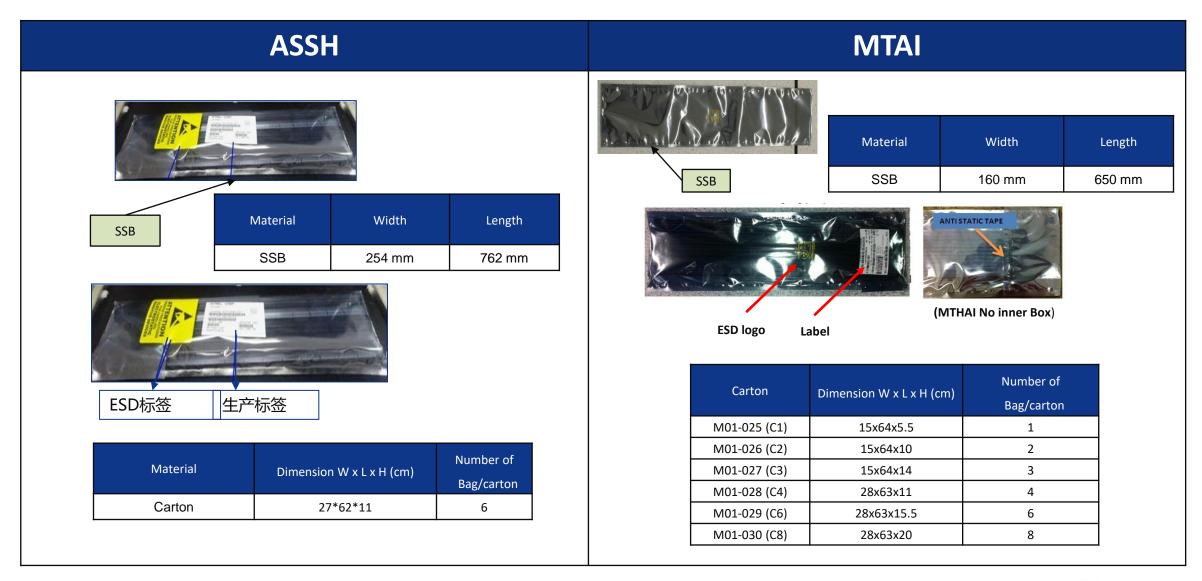


TUBE DIMENSION – Minor changes



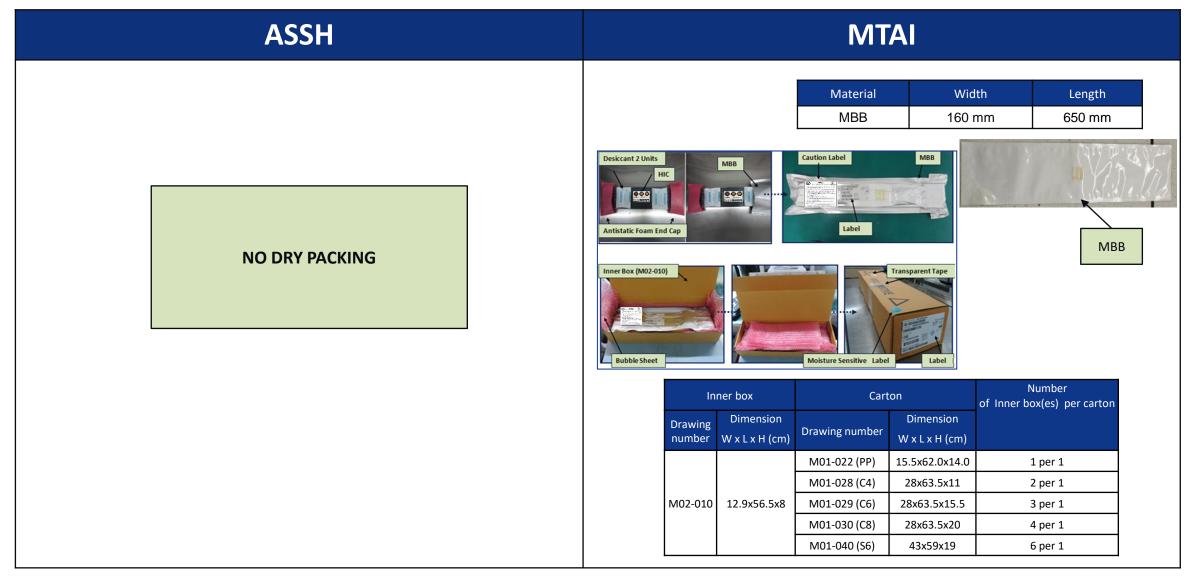


TUBE NON-DRY PACK



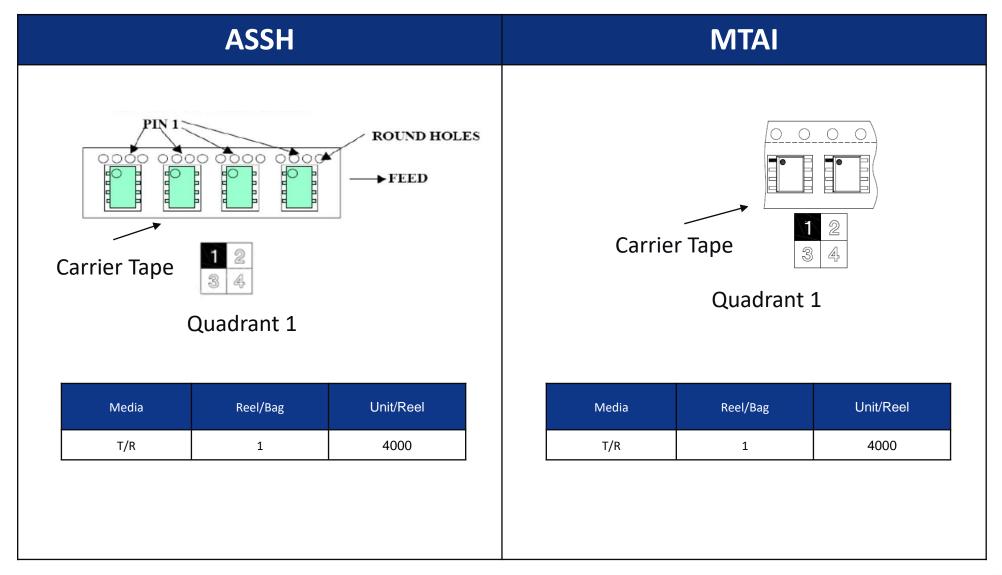


TUBE DRY PACK



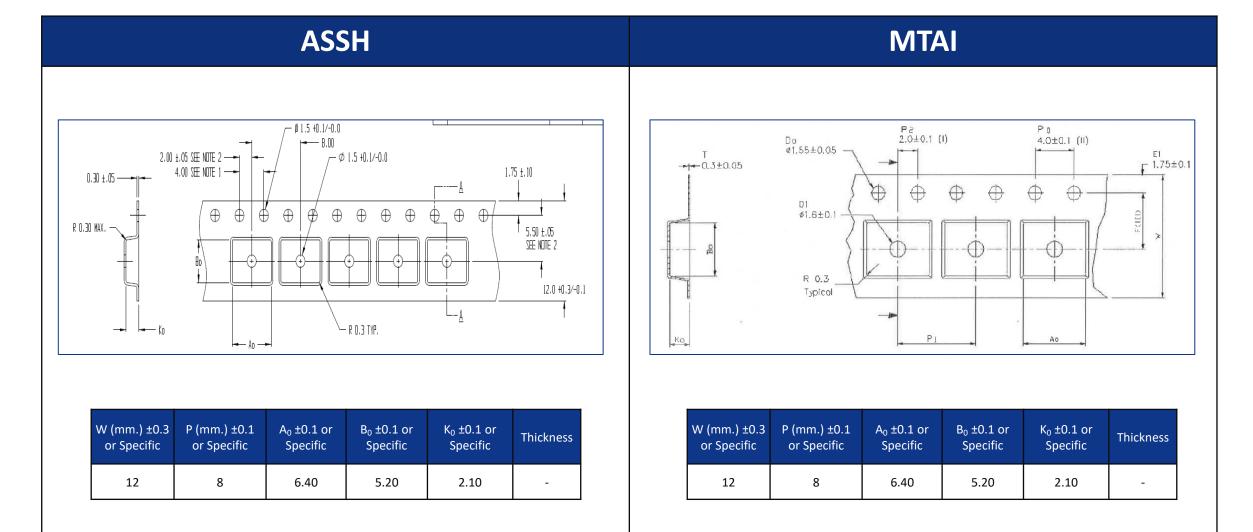


T/R BQM AND PIN1 ORIENTATION



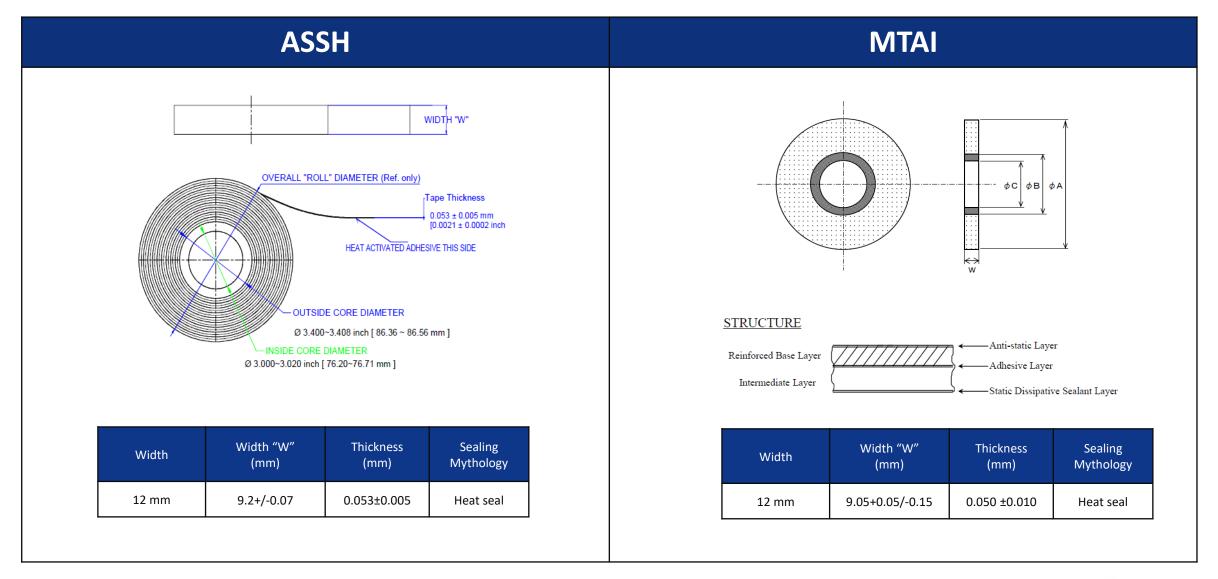


CARRIER TAPE – No changes



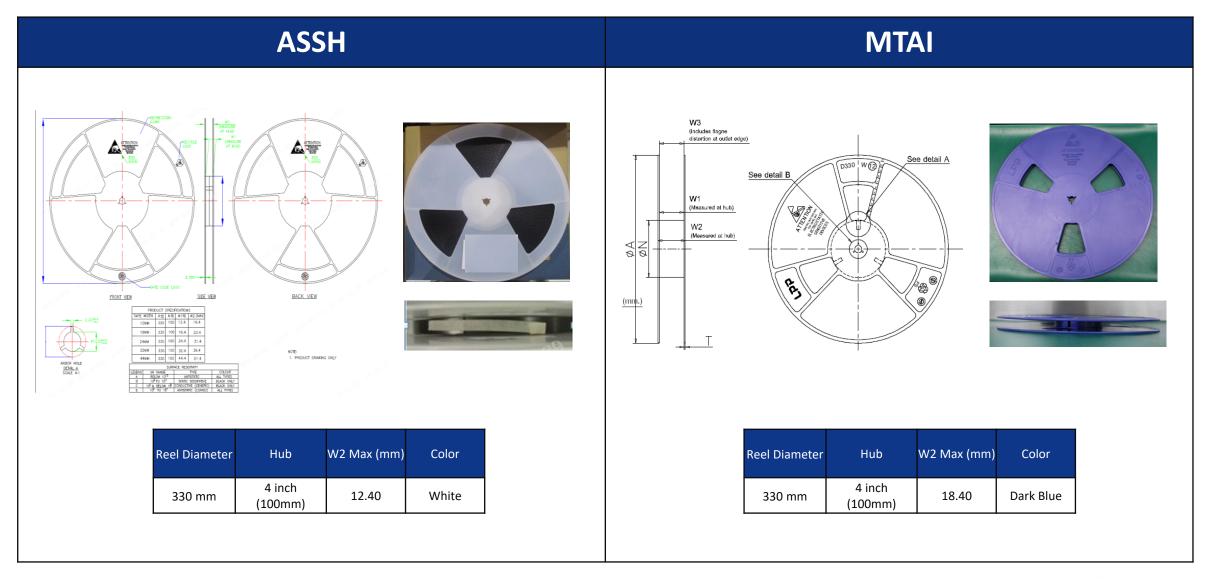


COVER TAPE – Minor changes



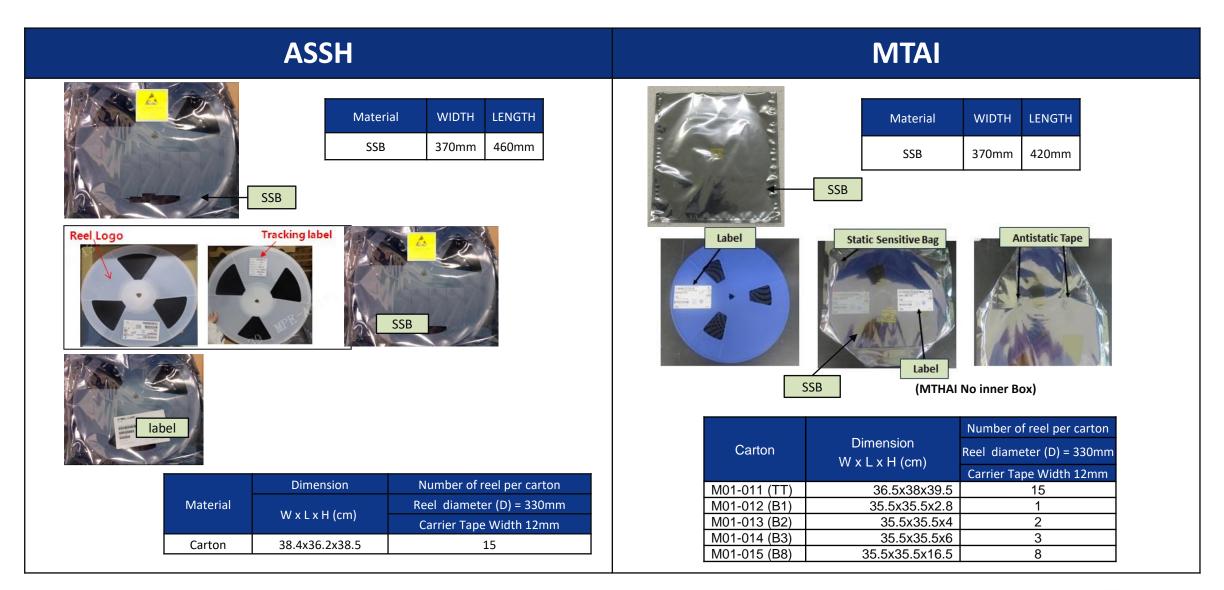


PLASTIC REEL – Minor changes





T/R NON-DRY PACK



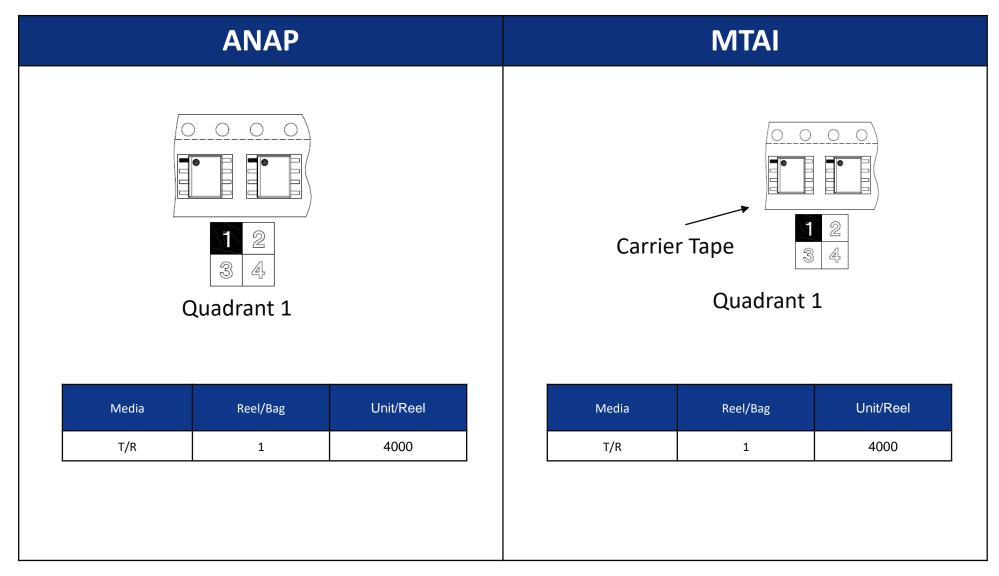


T/R DRY PACK



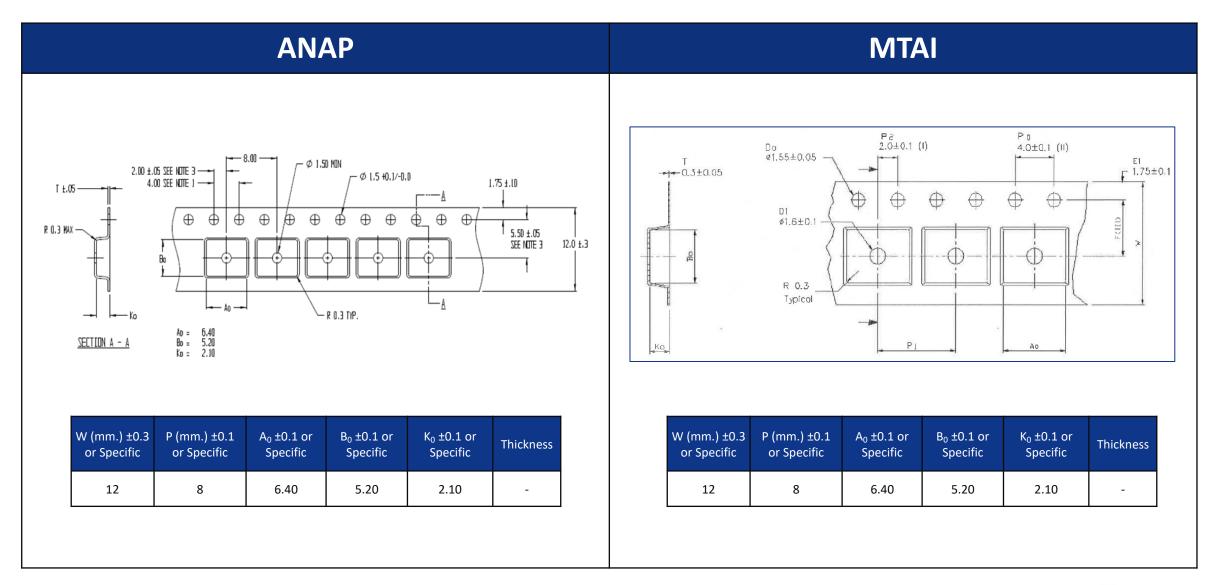


T/R BQM AND PIN1 ORIENTATION



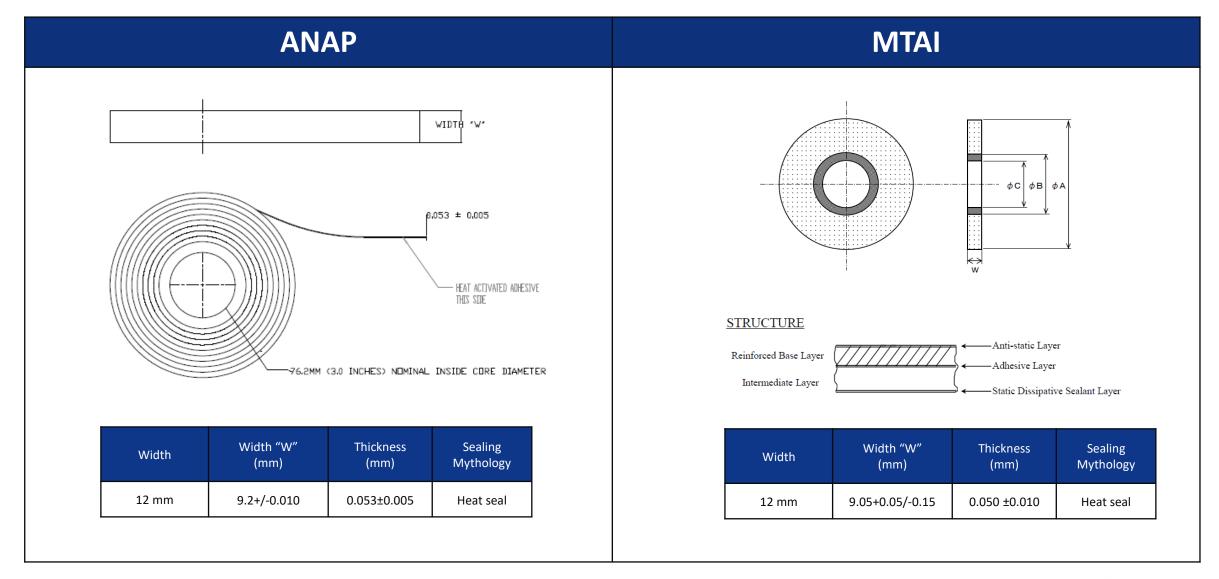


CARRIER TAPE – No changes



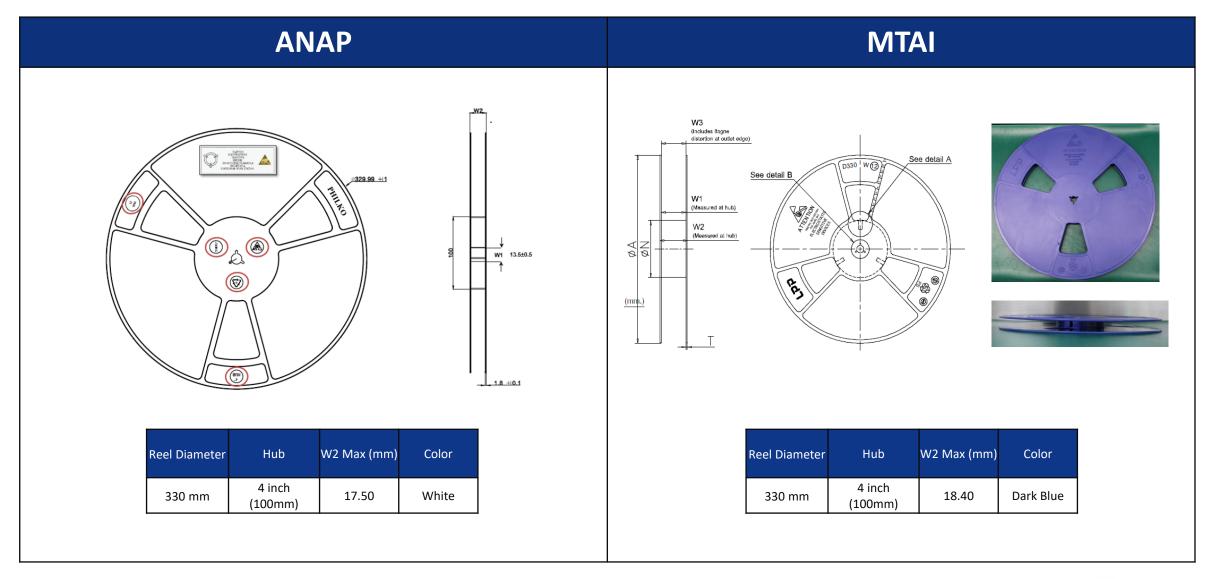


COVER TAPE – Minor changes



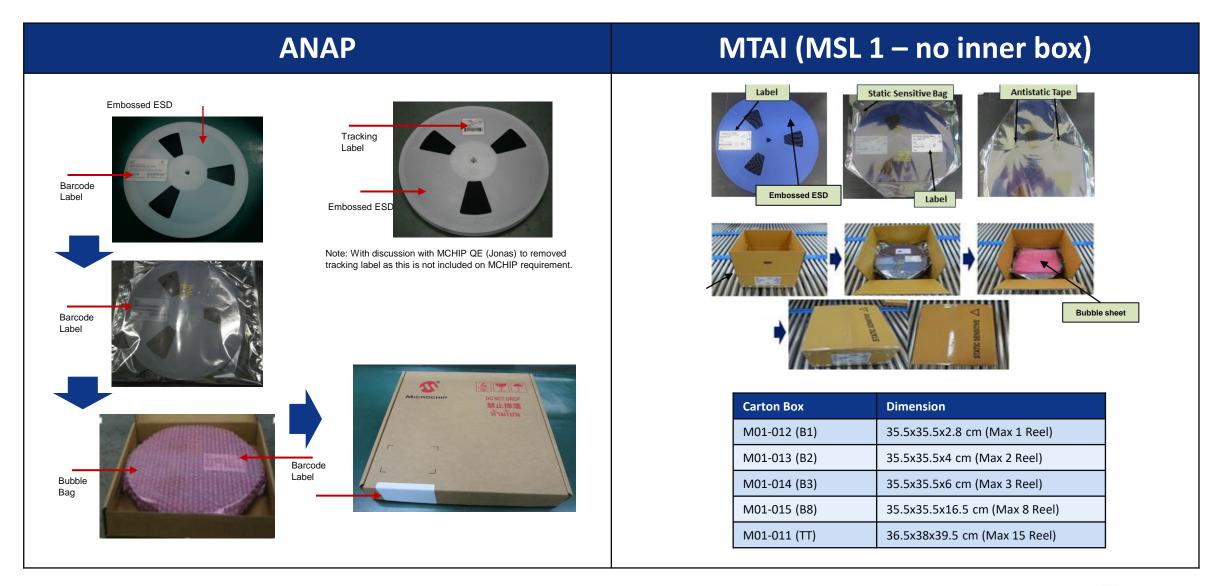


PLASTIC REEL – Minor changes





T/R NON-DRY PACK







QUALIFICATION REPORT SUMMARY

PCN #: RMES-15ZREP293

Date: December 08, 2020

Qualification of MTAI as an additional final test site for selected Atmel AT24C0xD, AT24C16D and AT24C32E device families available in 8L SOIC packages.

Purpose: Qualification of MTAI as an additional final test site for selected Atmel AT24C0xD, AT24C16D and AT24C32E device families available in 8L SOIC packages.

CCB No.: 3280.001

Test / Evaluation	Test Conditions / Parameters	Results / Remarks
Datalog / Bin Comparison	 Compare test numbers, test names, test limit, test sequence, bin assignments & pass/fail results. Accept if all match or justify the differences 	PASSED
Test stability verification	 Test stability verification with TC at -40°C, 25°C and 85°C for singulated Accept on Cpk > 1.67 or justify/waive parameters if needed 	PASSED
Tester to Tester verification	Perform GR&R. Site 1: Nextest_PT vs Nextest_SSV2t Platform	PASSED
Yield correlation	 Lot Validation, Good vs. rejects comparison. (5000 pcs). Accept ± 2% yield difference 	PASSED
Rejects verification	The one failure is marginal fail at 85C with Singulates test program, but on Strip test program the failure get always pass result. Reject rate is 0%.	PASSED