



Product Change Notification / LIAL-12WRCV778

Date:

19-Jan-2021

Product Category:

Memory

PCN Type:

Manufacturing Change

Notification Subject:

CCB 2927.001 and CCB 3280.002 Final Notice: Qualification of MTAI as an additional assembly and final test site for selected Atmel AT24C0xC, AT24C128C, AT24C16C, AT24C256C, AT24C32D and AT24C64D device families available in 8L SOIC package.

Affected CPNs:

[LIAL-12WRCV778_Affected_CPN_01192021.pdf](#)

[LIAL-12WRCV778_Affected_CPN_01192021.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 AT24C0xC, AT24C128C, AT24C16C, AT24C256C, AT24C32D and AT24C64D device families available in 8L SOIC package.

Pre Change:

Assembled at ANAP assembly site using palladium coated copper (PdCu) bond wire, 8290 die attach and G700A 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 (PdCu) bond wire or palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900G die attach and G700LY molding compound or CEL-9240HF10AK mold compound material with NiPdAu or 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 G700A 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 (PdCu) bond wire or palladium coated copper with gold flash (CuPdAu) bond wire, EN-4900G die attach and G700LY molding compound or CEL-9240HF10AK mold compound material withNiPdAu or 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 Change			Post Change			
Assembly Site	Amkor Technology Philippines (P1/P2), INC. (ANAP)	ASE Advanced Semiconductor (Shanghai) Co., Ltd. (ASSH)		Amkor Technology Philippines (P1/P2), INC. (ANAP)	ASE Advanced Semiconductor (Shanghai) Co., Ltd. (ASSH)		Microchip Technology Thailand (HQ) (MTAI)
Wire material	PdCu	PdCu	CuPdAu	PdCu	PdCu	CuPdAu	Au
Die attach material	8290	EN-4900G		8290	EN-4900G		8390A
Molding compound material	G700A	G700LY	CEL-9240HF 10AK	G700A	G700LY	CEL-9240HF 10AK	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	NiPdAu	Matte tin	NiPdAu	NiPdAu	Matte tin	Matte Tin

		Pre Change		Post Change		
Final Test Site		ASE Advanced Semiconductor (Shanghai) Co., Ltd. (ASSH)	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 Multiple (BQM)	Tube	100	100	100	100	100
	Tape and Reel	4000	4000	4000	4000	4000
Pin1 Orientation	Tube	Pin 1 side (Black)	Not Applicable	Pin 1 side (Black)	Not Applicable	Pin 1 side (White)
	Tape and Reel	Quadrant 1	Quadrant 1	Quadrant 1	Quadrant 1	Quadrant 1

Tube	Minor 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				X						
Final PCN Issue Date				X						
Estimated First Ship Date								X		

Method to Identify Change: Traceability code

Qualification Report:Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.PCN_LIAL-12WRCV778 Qual_Report – Assembly site Qualification ReportPCN_LIAL-12WRCV778_Qual_Report – Final Test site Qualification Report

Revision History:January 19, 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_LIAL-12WRCV778_Pre and Post Change Summary.pdf](#)

[PCN_LIAL-12WRCV778_ Qual Report - Assembly.pdf](#)

[PCN_LIAL-12WRCV778_ Qual Report - Final Test.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

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If you wish to change your PCN profile, including opt out, please go to the [PCN home page](#) select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

Affected Catalog Part Numbers (CPN)

AT24C04C-SSHM-B
AT24C04C-SSHM-T
AT24C08C-SSHM-B
AT24C08C-SSHM-T
AT24C01C-SSHM-B
AT24C01C-SSHM-T
AT24C02C-SSHM-B
AT24C02C-SSHM-T
AT24C256C-SSHL-B
AT24C256C-SSHL-T
AT24C16C-SSHM-B
AT24C16C-SSHM-T
AT24C64D-SSHM-B
AT24C64D-SSHM-T
AT24C128C-SSHM-B
AT24C128C-SSHM-T
AT24C32D-SSHM-B
AT24C32D-SSHM-T

CCB 2927.001 and 3280.002 Pre and Post Change Summary PCN #: LIAL-12WRCV778



A Leading Provider of Smart, Connected and Secure Embedded Control Solutions

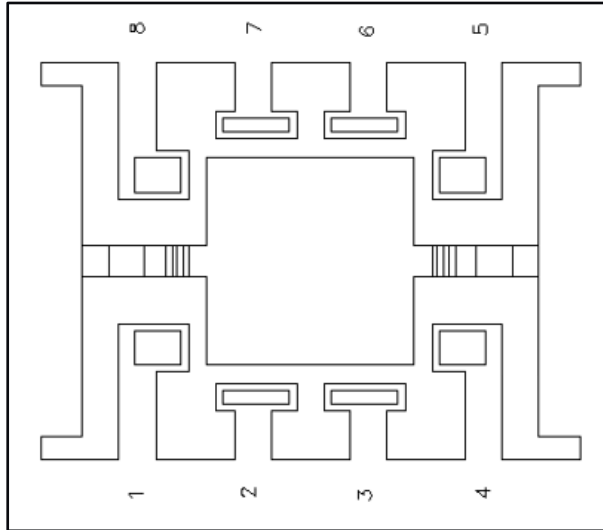


SMART | CONNECTED | SECURE

Qualification of MTAI as an additional assembly and final test site for selected Atmel for selected Atmel AT24C0xC, AT24C128C, AT24C16C, AT24C256C, AT24C32D and AT24C64D device families available in 8L SOIC package. .

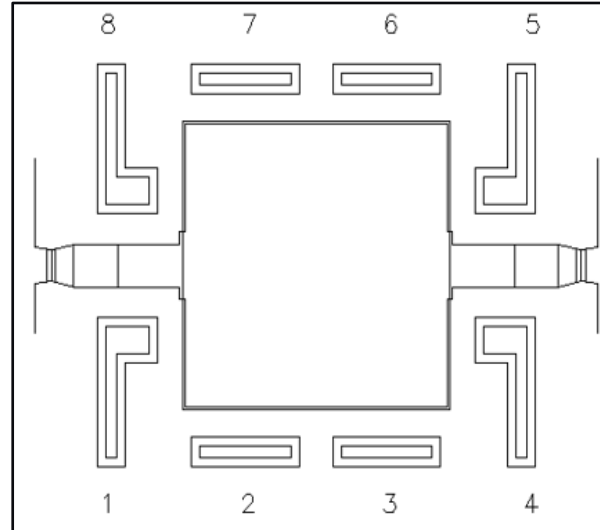
LEAD FRAME COMPARISON

ANAP



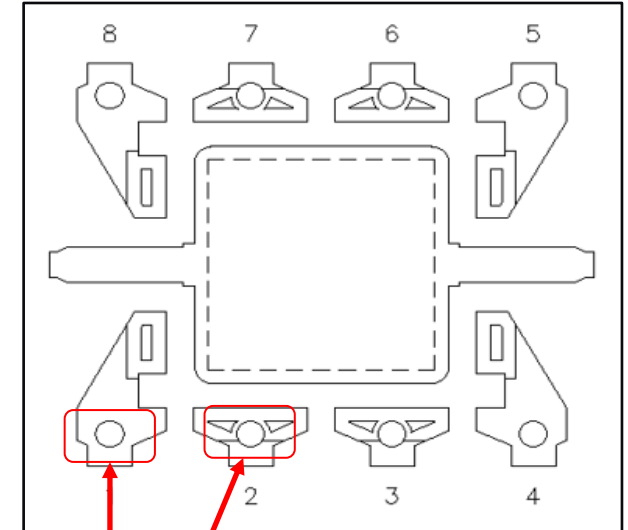
Paddle size	60 x 60 mils
Lead Lock	No
Lead Plating	NiPdAu

ASSH



Paddle size	93 x 93 mils
Lead Lock	No
Lead Plating	Matte tin

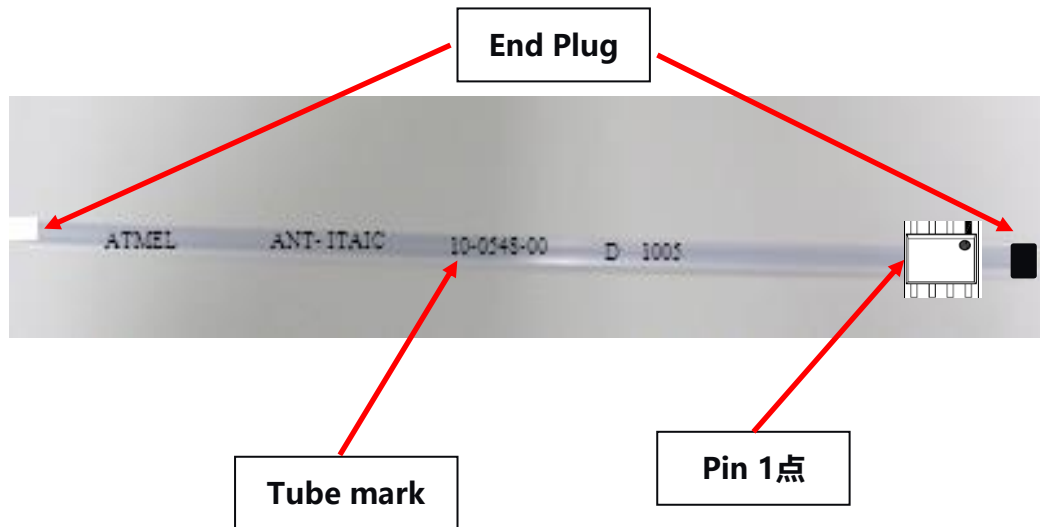
MTAI



Paddle size	90 x 90 mils
Lead Lock	Yes
Lead Plating	Matte Tin

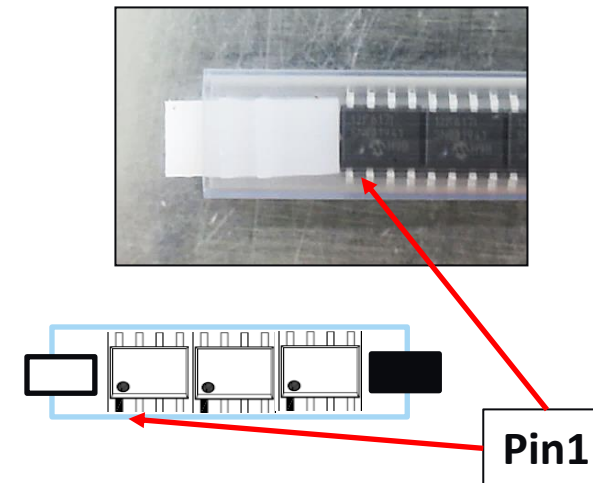
TUBE BQM AND PIN1 ORIENTATION

ASSH



Media	Unit/ Tube	Tubes /Bag	Pin 1 Orientation
Tube	100	100	Black end plug

MTAI

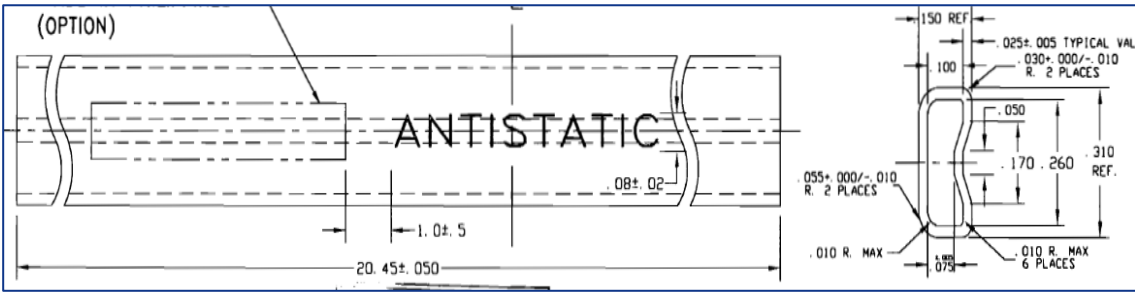
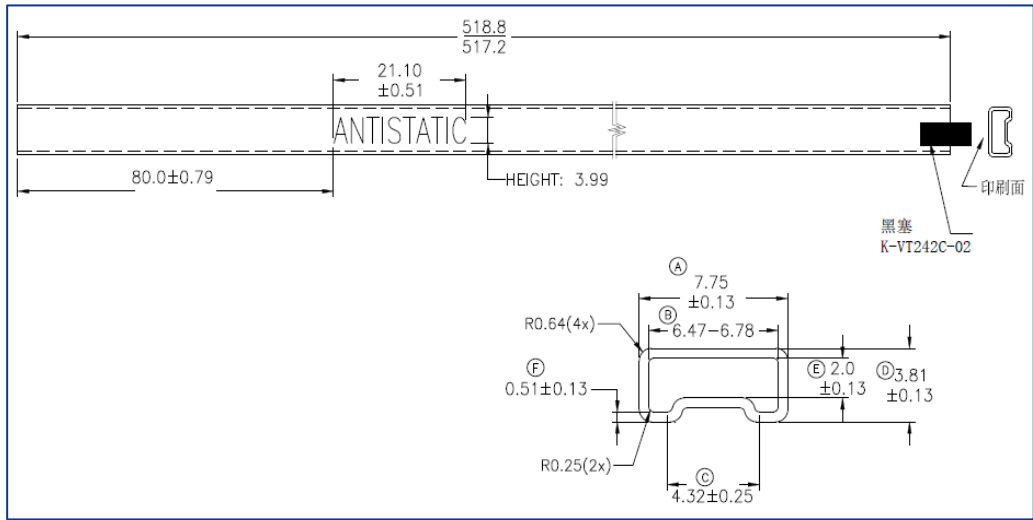


Media	Unit/ Tube	Tubes /Bag	Pin 1 Orientation
Tube	100	100	White end plug

TUBE DIMENSION – Minor changes

ASSH







MTAI



Length	Color
20.00 +/- 0.03 inch (518 +/- 0.8 mm)	Clear

Length	Color
20.50 +/- 0.05 inch (520.7 +/- 1.2 mm)	Clear

TUBE NON-DRY PACK

ASSH			MTAI																													
																																
SSB	Material	Width	Length	Material	Width	Length																										
SSB	SSB	254 mm	762 mm	SSB	160 mm	650 mm																										
																																
ESD标签	生产标签																															
																																
			(MTHAI No inner Box)																													
			ESD logo	Label																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #003366; color: white;"> <th style="width: 33%;">Material</th> <th style="width: 33%;">Dimension W x L x H (cm)</th> <th style="width: 34%;">Number of Bag/carton</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Carton</td> <td style="text-align: center;">27*62*11</td> <td style="text-align: center;">6</td> </tr> </tbody> </table>			Material	Dimension W x L x H (cm)	Number of Bag/carton	Carton	27*62*11	6	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #003366; color: white;"> <th style="width: 33%;">Carton</th> <th style="width: 33%;">Dimension W x L x H (cm)</th> <th style="width: 34%;">Number of Bag/carton</th> </tr> </thead> <tbody> <tr> <td>M01-025 (C1)</td> <td style="text-align: center;">15x64x5.5</td> <td style="text-align: center;">1</td> </tr> <tr> <td>M01-026 (C2)</td> <td style="text-align: center;">15x64x10</td> <td style="text-align: center;">2</td> </tr> <tr> <td>M01-027 (C3)</td> <td style="text-align: center;">15x64x14</td> <td style="text-align: center;">3</td> </tr> <tr> <td>M01-028 (C4)</td> <td style="text-align: center;">28x63x11</td> <td style="text-align: center;">4</td> </tr> <tr> <td>M01-029 (C6)</td> <td style="text-align: center;">28x63x15.5</td> <td style="text-align: center;">6</td> </tr> <tr> <td>M01-030 (C8)</td> <td style="text-align: center;">28x63x20</td> <td style="text-align: center;">8</td> </tr> </tbody> </table>			Carton	Dimension W x L x H (cm)	Number of Bag/carton	M01-025 (C1)	15x64x5.5	1	M01-026 (C2)	15x64x10	2	M01-027 (C3)	15x64x14	3	M01-028 (C4)	28x63x11	4	M01-029 (C6)	28x63x15.5	6	M01-030 (C8)	28x63x20	8
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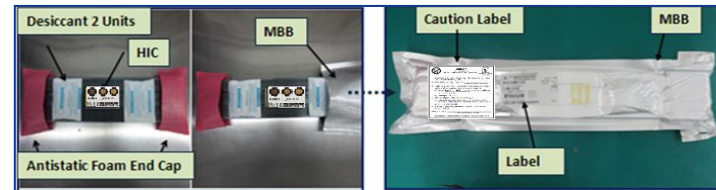
TUBE DRY PACK

ASSH

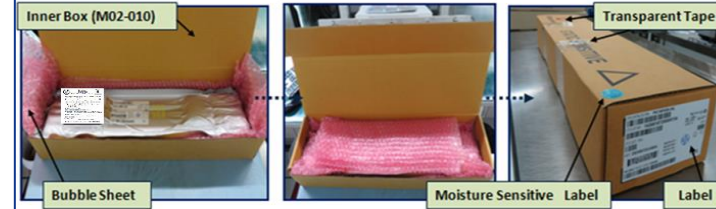
NO DRY PACKING

MTAI

Material	Width	Length
MBB	160 mm	650 mm



MBB



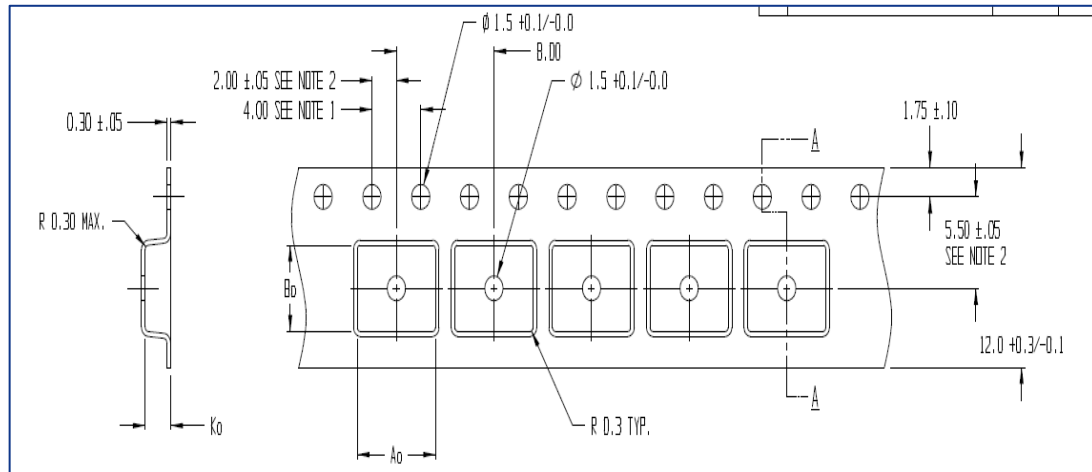
Inner box		Carton		Number of Inner box(es) per carton
Drawing number	Dimension W x L x H (cm)	Drawing number	Dimension W x L x H (cm)	
M02-010	12.9x56.5x8	M01-022 (PP)	15.5x62.0x14.0	1 per 1
		M01-028 (C4)	28x63.5x11	2 per 1
		M01-029 (C6)	28x63.5x15.5	3 per 1
		M01-030 (C8)	28x63.5x20	4 per 1
		M01-040 (S6)	43x59x19	6 per 1

T/R BQM AND PIN1 ORIENTATION

ASSH			MTAI		
Media	Reel/Bag	Unit/Reel	Media	Reel/Bag	Unit/Reel
T/R	1	4000	T/R	1	4000

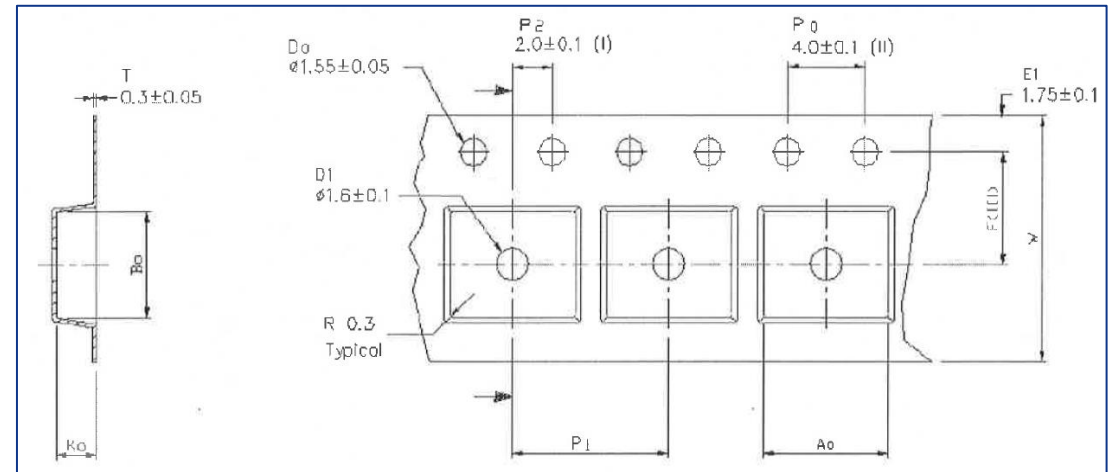
CARRIER TAPE – No changes

ASSH



W (mm.) ± 0.3 or Specific	P (mm.) ± 0.1 or Specific	$A_0 \pm 0.1$ or Specific	$B_0 \pm 0.1$ or Specific	$K_0 \pm 0.1$ or Specific	Thickness
12	8	6.40	5.20	2.10	-

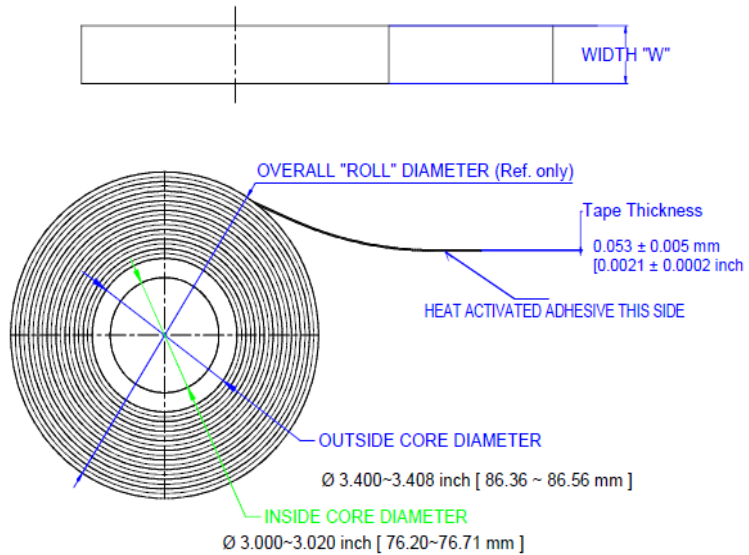
MTAI



W (mm.) ± 0.3 or Specific	P (mm.) ± 0.1 or Specific	$A_0 \pm 0.1$ or Specific	$B_0 \pm 0.1$ or Specific	$K_0 \pm 0.1$ or Specific	Thickness
12	8	6.40	5.20	2.10	-

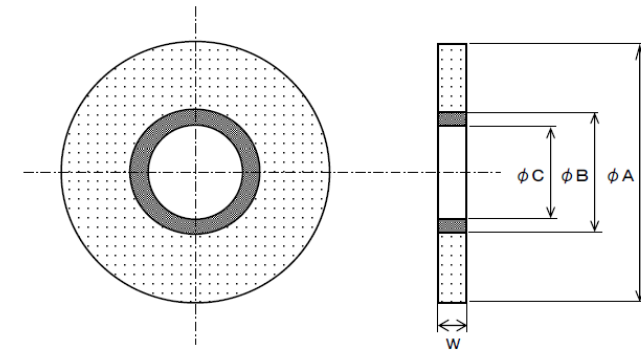
COVER TAPE – Minor changes

ASSH

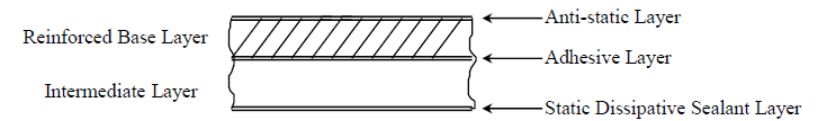


Width	Width "W" (mm)	Thickness (mm)	Sealing Mythology
12 mm	9.2+/-0.07	0.053±0.005	Heat seal

MTAI



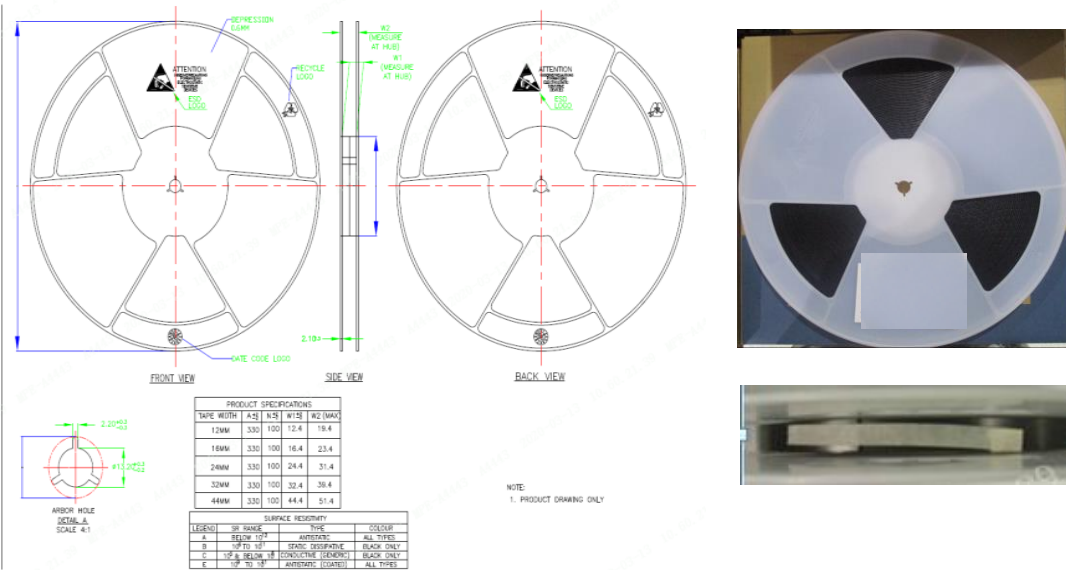
STRUCTURE



Width	Width "W" (mm)	Thickness (mm)	Sealing Mythology
12 mm	9.05+0.05/-0.15	0.050 ±0.010	Heat seal

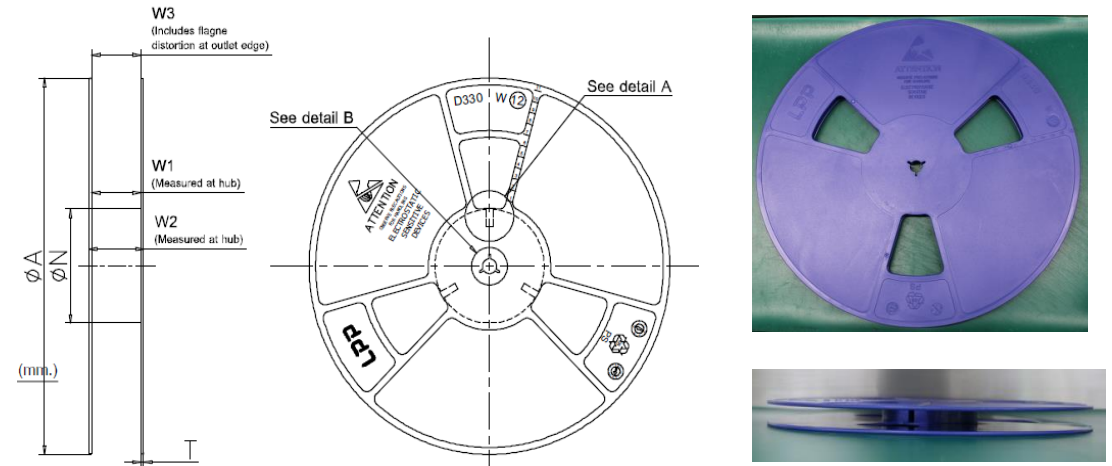
PLASTIC REEL – Minor changes

ASSH



Reel Diameter	Hub	W2 Max (mm)	Color
330 mm	4 inch (100mm)	12.40	White

MTAI



Reel Diameter	Hub	W2 Max (mm)	Color
330 mm	4 inch (100mm)	18.40	Dark Blue

T/R NON-DRY PACK

ASSH



Material	WIDTH	LENGTH
SSB	370mm	460mm

SSB

Reel Logo

Tracking label



SSB



label

Material	Dimension	Number of reel per carton
	W x L x H (cm)	Reel diameter (D) = 330mm Carrier Tape Width 12mm
Carton	38.4x36.2x38.5	15

MTAI



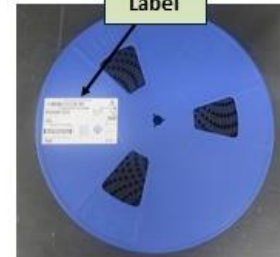
SSB

Material	WIDTH	LENGTH
SSB	370mm	420mm

Label

Static Sensitive Bag

Antistatic Tape



SSB

Label

(MTHAI No inner Box)

Carton	Dimension W x L x H (cm)	Number of reel per carton
		Reel diameter (D) = 330mm Carrier Tape Width 12mm
M01-011 (TT)	36.5x38x39.5	15
M01-012 (B1)	35.5x35.5x2.8	1
M01-013 (B2)	35.5x35.5x4	2
M01-014 (B3)	35.5x35.5x6	3
M01-015 (B8)	35.5x35.5x16.5	8

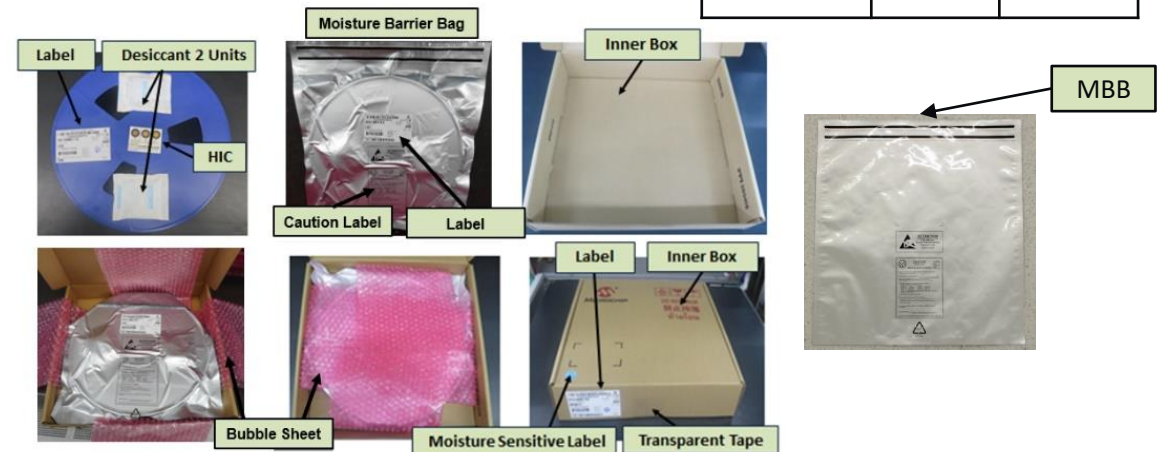
T/R DRY PACK

ASSH

NO DRY PACKING

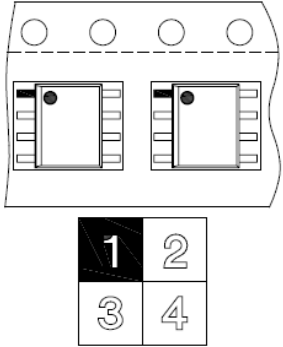
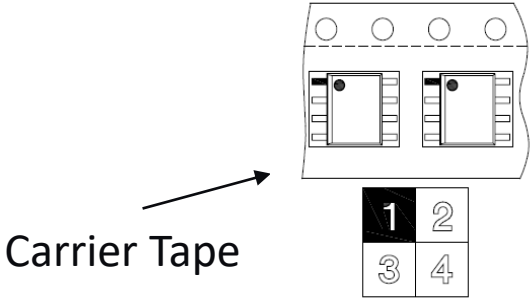
MTAI

Material	WIDTH	LENGTH
MBB	370mm	420mm



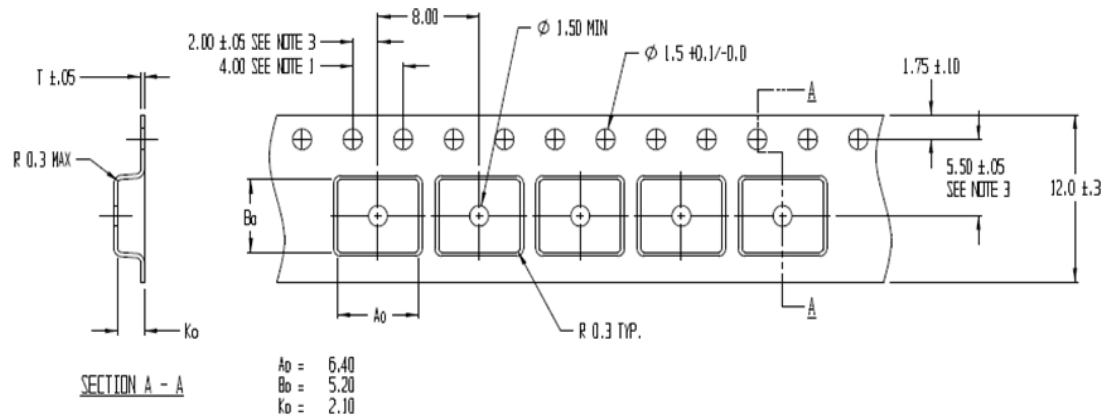
Inner box		Carton		Number of Inner box(es) per carton
Drawing number	Dimension W x L x H (cm)	Drawing number	Dimension W x L x H (cm)	
M02-015 (Small)	37x35.1x5.3	M01-044 (SM)	37.0x38.0x11.0	1 : 1
		M01-045 (S4)	37.0x38.0x22.5	3 : 1
		M01-046 (S5)	37.0x39.0x39.0	6 : 1
		M01-047 (S3)	42.0x66.0x39.0	11 : 1

T/R BQM AND PIN1 ORIENTATION

ANAP			MTAI		
 <p>Quadrant 1</p>			 <p>Quadrant 1</p>		
Media	Reel/Bag	Unit/Reel	Media	Reel/Bag	Unit/Reel
T/R	1	4000	T/R	1	4000

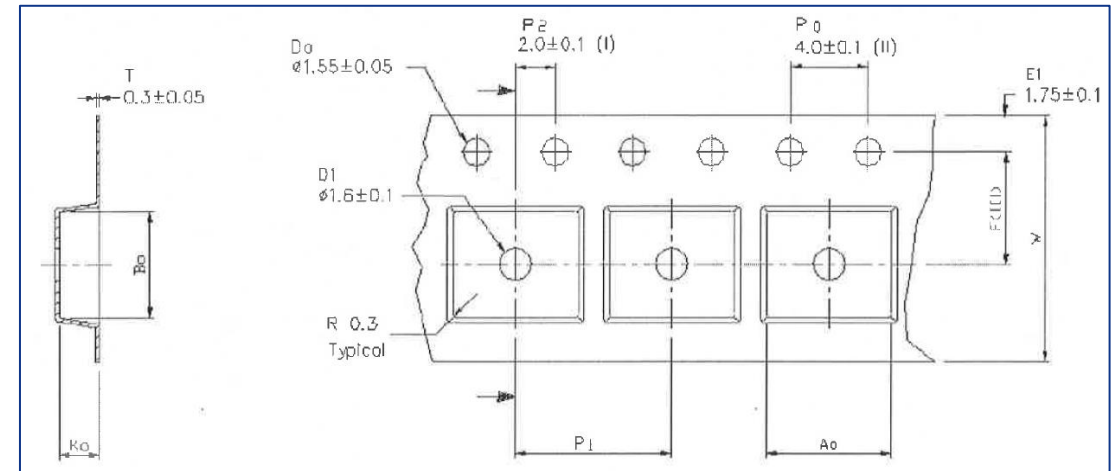
CARRIER TAPE – No changes

ANAP



W (mm.) ±0.3 or Specific	P (mm.) ±0.1 or Specific	A ₀ ±0.1 or Specific	B ₀ ±0.1 or Specific	K ₀ ±0.1 or Specific	Thickness
12	8	6.40	5.20	2.10	-

MTAI



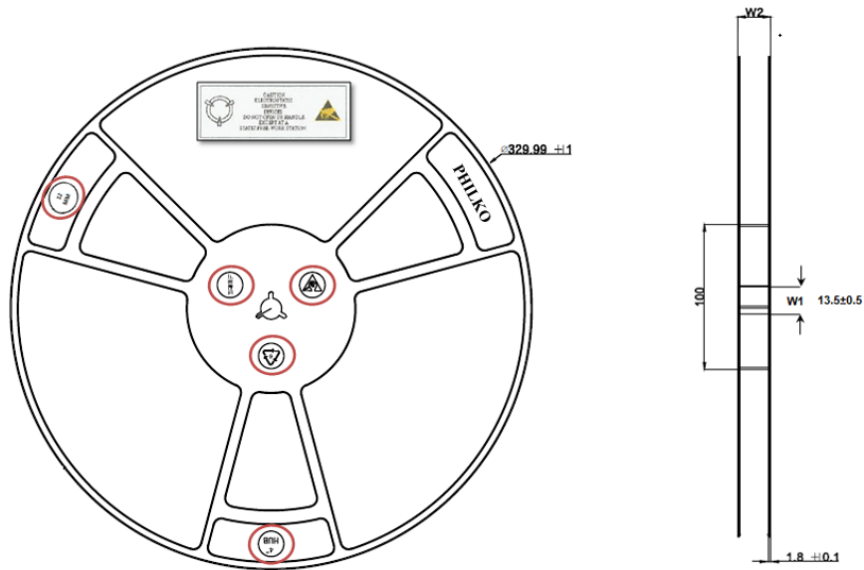
W (mm.) ±0.3 or Specific	P (mm.) ±0.1 or Specific	A ₀ ±0.1 or Specific	B ₀ ±0.1 or Specific	K ₀ ±0.1 or Specific	Thickness
12	8	6.40	5.20	2.10	-

COVER TAPE – Minor changes

ANAP				MTAI			
<p>STRUCTURE</p>				<p>STRUCTURE</p>			
Width	Width "W" (mm)	Thickness (mm)	Sealing Mythology	Width	Width "W" (mm)	Thickness (mm)	Sealing Mythology
12 mm	9.2+/-0.010	0.053±0.005	Heat seal	12 mm	9.05+0.05/-0.15	0.050 ±0.010	Heat seal

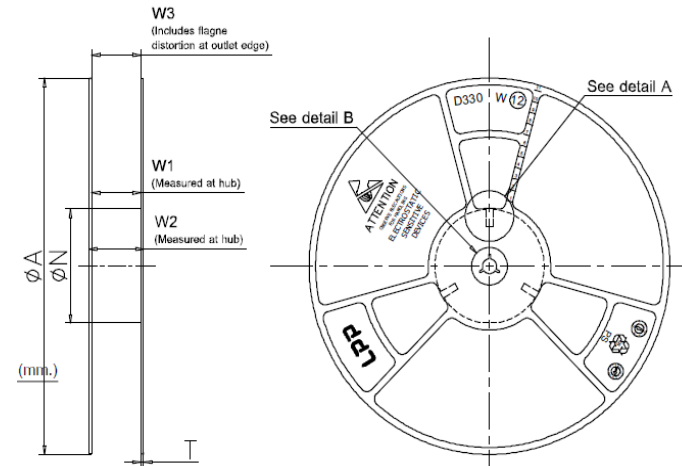
PLASTIC REEL – Minor changes

ANAP



Reel Diameter	Hub	W2 Max (mm)	Color
330 mm	4 inch (100mm)	17.50	White

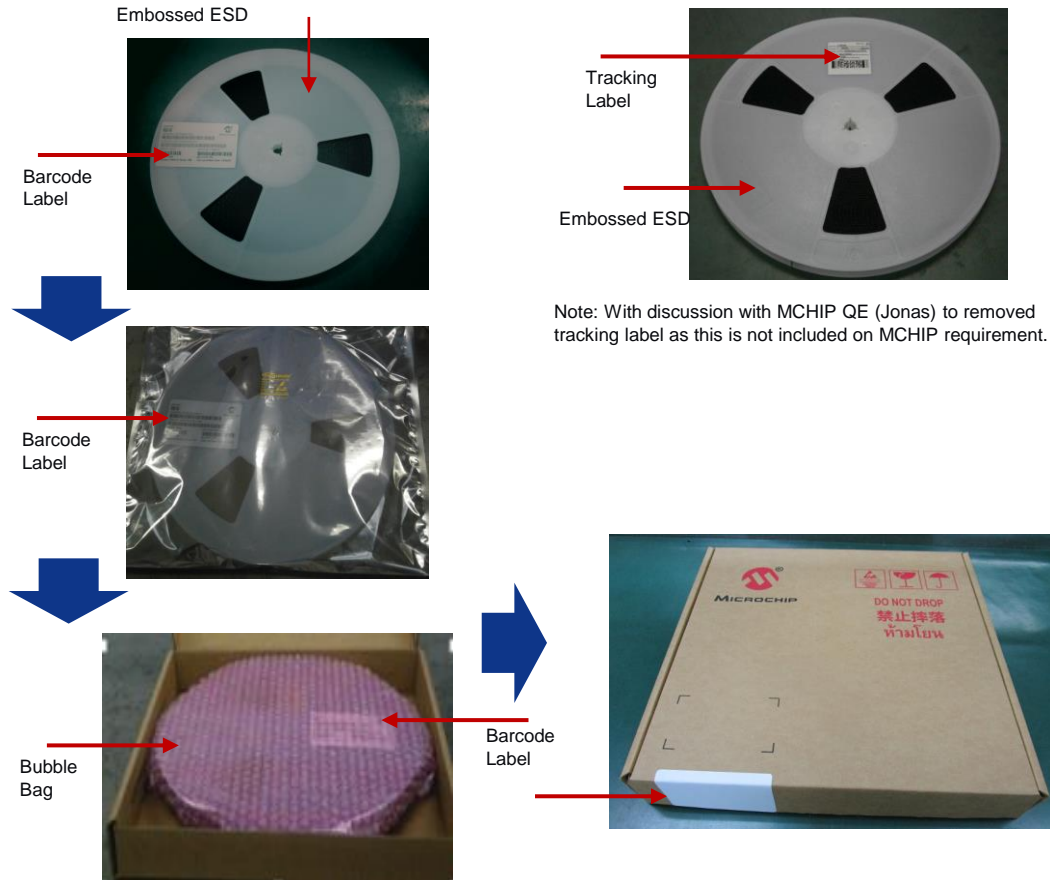
MTAI



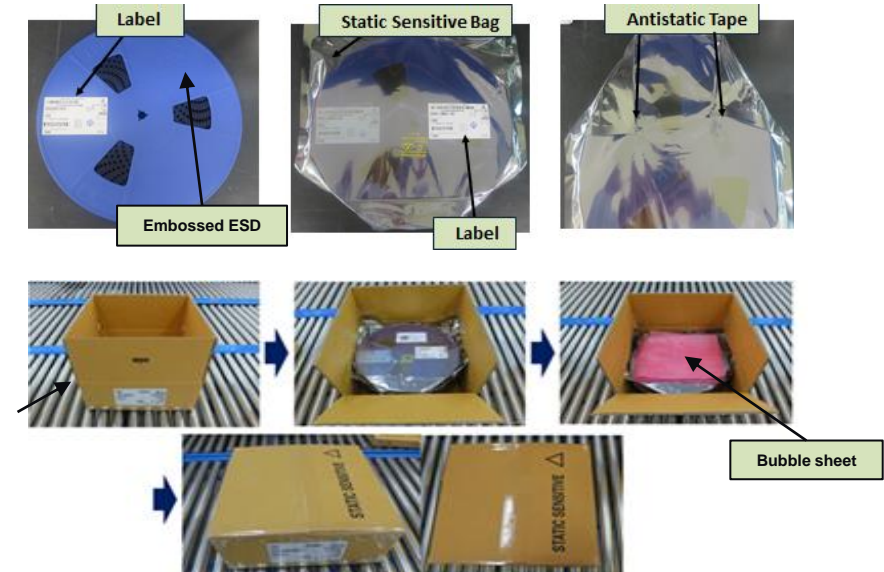
Reel Diameter	Hub	W2 Max (mm)	Color
330 mm	4 inch (100mm)	18.40	Dark Blue

T/R NON-DRY PACK

ANAP



MTAI (MSL 1 – no inner box)



Carton Box	Dimension
M01-012 (B1)	35.5x35.5x2.8 cm (Max 1 Reel)
M01-013 (B2)	35.5x35.5x4 cm (Max 2 Reel)
M01-014 (B3)	35.5x35.5x6 cm (Max 3 Reel)
M01-015 (B8)	35.5x35.5x16.5 cm (Max 8 Reel)
M01-011 (TT)	36.5x38x39.5 cm (Max 15 Reel)



MICROCHIP

QUALIFICATION REPORT SUMMARY

PCN #: LIAL-12WRCV778

**Date:
December 08, 2020**

**Qualification of MTAI as an additional final test site for
selected Atmel AT24C0xC, AT24C128C, AT24C16C,
AT24C256C, AT24C32D and AT24C64D device families
available in 8L SOIC package.**

Purpose: Qualification of MTAI as a additional final test site for selected Atmel AT24C0xC, AT24C128C, AT24C16C, AT24C256C, AT24C32D and AT24C64D device families available in 8L SOIC package.

CCB No.: 3280.002

Test / Evaluation	Test Conditions / Parameters	Results / Remarks
Datalog / Bin Comparison	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Perform GR&R. Site 1: Nextest_PT vs Nextest_SSV2t Platform 	PASSED
Yield correlation	<ul style="list-style-type: none"> Lot Validation, Good vs. rejects comparison. (5000 pcs). Accept ± 2% yield difference 	PASSED
Rejects verification	<ul style="list-style-type: none"> 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



MICROCHIP

**QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY**

PCN#: LIAL-12WRCV778

Date

June 24, 2017

**Qualification of MTAI as an additional assembly site for
selected Atmel AT24C0xC, AT24C128C, AT24C16C,
AT24C256C, AT24C32D and AT24C64D device families available
in 8L SOIC package.**



MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose	Qualification of MTAI as an additional assembly site for selected Atmel AT24C0xC, AT24C128C, AT24C16C, AT24C256C, AT24C32D and AT24C64D device families available in 8L SOIC package.
CN	ES098794
QUAL ID	Q17084 Rev A
CCB	2927.001
MP CODE	DEDX2YC2XA00
Part No.	24LC512T-E/SN
Bonding No.	BDM-001302 Rev. A
<u>Package</u>	
Type	8L SOIC
Package size	150 mils
<u>Lead Frame</u>	
Paddle size	95 x 130 mils
Material	CDA194
Surface	Bare Cu paddle
Process	Stamped
Lead Lock	Yes
Part Number	10100842
Treatment	Roughened
<u>Material</u>	
Epoxy	8390A
Wire	Au
Mold Compound	G600V
Plating Composition	Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer No.	Date Code
MTAI180702622.000	GRSM417152115.300	1719PE7
MTAI180702623.000	GRSM417152115.340	1719PE8
MTAI180703101.000	GRSM417152115.300	1719U5E

Result

Pass Fail _____

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-020D 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-020D)	IPC/JEDEC C J-STD-020D	135	0/135	Pass	

Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :+25°C,85°C and 125°C System: NEXTEST_PT	JESD22-A113	693(0)	693	Pass	Good Devices
	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 System: Vitronics Soltec MR1243			693		
	Electrical Test :+25°C,85°C and 125°C System: NEXTEST_PT			0/693		

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	Stress Condition: -65°C to +150°C, 500 Cycles System : TABAI ESPEC TSA-70H	JESD22-A104	231(0)	231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
	Electrical Test: + 85°C System: NEXTEST_PT			0/231		
	Bond Strength: Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)			15 (0) 0/15 15 (0) 0/15		
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118	231(0)	231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
	Electrical Test: +25°C System: NEXTEST_PT			0/231		
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: 5.5 Volts System: HAST 6000X	JESD22-A110	231(0)	231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
	Electrical Test: +25°C,85°C and 125°C System: NEXTEST_PT			0/231		
High Temperature Storage Life	Stress Condition: Bake 175°C, 504 hrs System: SHEL LAB	JESD22-A103	45(0)	45	Pass	45 units
	Electrical Test :+25°C,85°C and 125°C System: NEXTEST_PT			0/45		

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Solderability Temp 215°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000 Solder Dipping: Solder Temp.215°C Solder material: SnPb Sn63,Pb37 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22 22 0/22	Pass	
Solderability Temp 245°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000 Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	JESD22B-102E	22 (0)	22 22 0/22	Pass	
Bond Strength Data Assembly	Wire Pull (> 2.5 grams) Bond Shear (>15.00 grams)	M2011 JESD22-B116	30 (0) Wires 30 (0) bonds	0/30 0/30	Pass Pass	