



## Product Change Notification / RMES-28FEHU333

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**Date:**

28-Dec-2022

**Product Category:**

Memory

**PCN Type:**

Manufacturing Change

**Notification Subject:**

CCB 4404.002 and CCB 6051 Final Notice: Qualification of ASSH as a new assembly site and as an additional final test site for 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package.

**Affected CPNs:**

[RMES-28FEHU333\\_Affected\\_CPN\\_12282022.pdf](#)

[RMES-28FEHU333\\_Affected\\_CPN\\_12282022.csv](#)

**Notification Text:**

**PCN Status:**Final Notification

**PCN Type:**Manufacturing Change

**Microchip Parts Affected:**Please open one of the files found in the Affected CPNs section.

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

**Description of Change:**Qualification of ASSH as a new assembly site and as an additional final test site for 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package.

**Pre and Post Change Summary:**

	Pre Change	Post Change
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Assembly Site		Microchip Technology Thailand (Branch) (MMT)	ATX Semiconductor (Shanghai)Co. Ltd (ASSH)	
Wire Material		CuPdAu or Au	PdCu	
Die Attach Material		2200D	EN-4900G	
Molding Compound Material		G600V	G700LY	
Lead-Frame Material		C7025	C7025	
Lead-Frame Paddle Size		118 x 87 mils or 82x 82 mils	126 x 87 mils	
Lead finish		Matte tin	NiPdAu	
		Pre change	Post Change	
Final Test Site		Microchip Technology Thailand  (HQ) (MTAI)	Microchip Technology Thailand  (HQ) (MTAI)	ATX Semiconductor (Shanghai)Co. Ltd (ASSH)
Pin 1 Orientation – Tube		White side	White side	Top Left
BQM per Tube		100	100	100
Tube/Bag		160 tube / bag	160 tube / bag	160 tube / bag
Tube	Color	Clear	Clear	Clear
	Size	With minor dimensional changes. See pre and post change for comparison.		
Packaging Method for Tube		See pre and post change for comparison.		
Pin 1 Orientation – TnR		Quadrant 1	Quadrant 1	Quadrant 1
BQM per TnR		2500	2500	2500 or5000
Cover Tape		With minor dimensional changes. See pre and post change for comparison.		
Plastic Reel		With minor dimensional changes. See pre and post change for comparison.		
Packaging Method for Tube		See pre and post change for comparison.		

**Impacts to Data Sheet:**None

**Change Impact**None

**Reason for Change:**To improve manufacturability by qualifying ASSH as a new assembly site and as an additional final test site

**Change Implementation Status:**In progress

**Estimated First Ship Date:**January 10, 2023 (date code: 2302)

Note: Please be advised that after the estimated first ship date customers may receive pre and post

change parts.

#### Time Table Summary:

	December 2022					January 2023				
Workweek	4 9	5 0	5 1	5 2	5 3	01	02	03	04	05
Qual Report Availability					X					
Final PCN Issue Date					X					
Estimated Implementation Date							X			

**Method to Identify Change:**Traceability code

**Qualification Reports:**Please open the attachments included with this PCN labeled as  
PCN\_#\_Qual\_Report\_Assembly

Please open the attachments included with this PCN labeled as PCN\_#\_Qual\_Report\_Final\_Test

**Revision History:December 28, 2022:** Issued final notification. Attached is the qualification report and provided estimated first ship date by January 10, 2023.

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-28FEHU333\\_Pre and Post Change Summary.pdf](#)

[PCN\\_RMES-28FEHU333\\_Qual\\_Report\\_Assembly.pdf](#)

[PCN\\_RMES-28FEHU333\\_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.



**QUALIFICATION REPORT SUMMARY**  
RELIABILITY LABORATORY

**PCN #: RMES-28FEHU333**

**Date**  
**December 8, 2021**

**Qualification of ASSH as a new assembly site and as an additional final test site for 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package.**

**The 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package will be qualify by similarity (QBS).**



**MICROCHIP**

## **PACKAGE QUALIFICATION REPORT**

<b>Purpose</b>	<b>Qualification of ASSH as a new assembly site and as an additional final test site for 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package. The 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package will be qualify by similarity (QBS).</b>
<b>CCB No.</b>	4404 and 4404.002
<b>CN</b>	ES353255
<b>QUAL ID</b>	R2100296 Rev. C
<b>MP CODE</b>	66829Y9CXA00
<b>Part No.</b>	24LC512T-E/ST
<b>Bonding No.</b>	BDE-006431 Rev. 03
<b><u>Package</u></b>	
<b>Type</b>	8L TSSOP
<b>Package size</b>	4.4 mm
<b><u>Lead Frame</u></b>	
<b>Paddle size</b>	126 x 87 mils
<b>Material</b>	C7025
<b>Surface</b>	Roughening
<b>Process</b>	Stamped
<b>Lead Lock</b>	Yes
<b>Part Number</b>	LI-WMA400008-05-00
<b>Treatment</b>	Roughening
<b><u>Material</u></b>	
<b>Epoxy</b>	EN-4900G
<b>Wire</b>	PdCu
<b>Mold Compound</b>	G700LY
<b>Plating Composition</b>	NiPdAu



**MICROCHIP**

**PACKAGE QUALIFICATION REPORT**

**Manufacturing Information**

Assembly Lot No.	Wafer Lot No.	Date Code
ASSH214600052.000	U08D921068648.300	2107KG8
ASSH214500170.000	U08D921068648.300	2106KE6
ASSH214600051.000	U08D921068648.300	2107KG3

**Result**      ☒ Pass      ☐ Fail      ☐ \_\_\_\_\_

8L TSSOP assembled by ASSH 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
<b><u>Precondition</u></b> <b><u>Prior Perform</u></b> <b><u>Reliability Tests</u></b> <b>(At MSL Level 1)</b>	<b>Electrical Test:</b> +25°C, 85°C and 125°C System: NEXTEST_PT	JESD22-A113	693(0)	693		Good Devices
	Bake 150°C, 24 hrs System: CHINEE	JIP/ IPC/JEDEC		693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH	J-STD-020D		693		
	3x Convection-Reflow 265°C max  System: Vitronics Soltec MR1243			693		
	<b>Electrical Test:</b> +25°C, 85°C and 125°C System: NEXTEST_PT			0/693	Pass	



# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	<b>Stress Condition:</b> -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +85°C and 125°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
	<b>Stress Condition:</b> -65°C to +150°C, 1000 Cycles System: TABAI ESPEC TSA-70H			231		
	<b>Electrical Test:</b> +85°C and 125°C System: NEXTEST_PT		231(0)	0/231	Pass	
	<b>Bond Strength:</b> Wire Pull (> 4.00 grams) Bond Shear (> 18.00 grams)		15 (0)	0/15	Pass	
			15 (0)	0/15	Pass	
UNBIASED-HAST	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
	<b>Stress Condition:</b> +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	<b>Electrical Test:</b> + 25°C System: NEXTEST_PT		231(0)	0/231	Pass	
HAST	<b>Stress Condition:</b> +130°C/85%RH, 96 hrs. <b>Bias Volt:</b> 5.0 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	<b>Electrical Test:</b> +25°C, 85°C and 125°C System: NEXTEST_PT		231(0)	0/231	Pass	77 units / lot
	<b>Stress Condition:</b> +130°C/85%RH,192 hrs. <b>Bias Volt:</b> 5.0 Volts System: HAST 6000X			231		
	<b>Electrical Test:</b> +25°C, 85°C and 125°C System: NEXTEST_PT		231(0)	0/231	Pass	
	<b>Bond Strength:</b> Wire Pull (> 4.00 grams) Bond Shear (> 18.00 grams)		15 (0)	0/15	Pass	
			15 (0)	0/15	Pass	

# PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
<b>High Temperature Storage Life</b>	<b>Stress Condition:</b> Bake 175°C, 504 hrs System: SHEL LAB	JESD22- A103		45		45 units
	<b>Electrical Test:</b> +25°C, 85°C and 125°C System: NEXTEST_PT		45(0)	0/45	Pass	
	<b>Stress Condition:</b> Bake 175°C, 1008 hrs System: SHEL LAB			45		
	<b>Electrical Test:</b> +25°C, 85°C and 125°C System: NEXTEST_PT		45(0)	0/45	Pass	
	<b>Bond Strength:</b> Wire Pull (> 4.00 grams) Bond Shear (> 18.00 grams)		15 (0) 15 (0)	0/15 0/15	Pass Pass	
<b>Bond Strength Data Assembly</b>	Wire Pull (> 4.00 grams)	Mil. Std. 883-2011	30 (0) Wires	0/30	Pass	
	Bond Shear (> 18.00 grams)	CDF-AEC- Q100-001	30 (0) bonds	0/30	Pass	

# CCB 4404.002 and CCB 6051

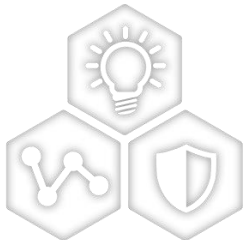
## Leadframe comparison

### PCN #: RMES-28FEHU333



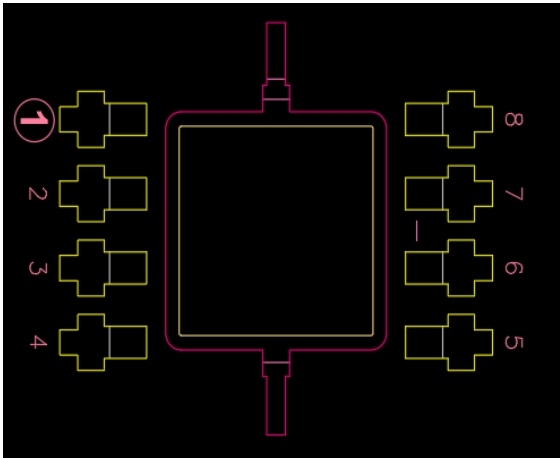
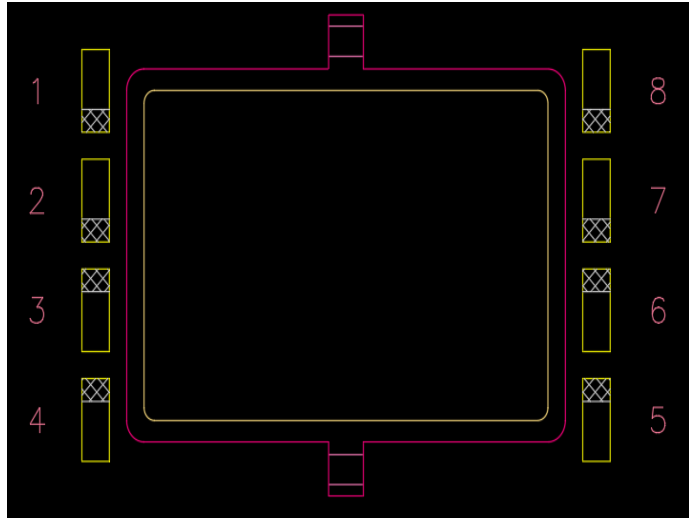
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# Pre and Post Change Summary – Lead Frame comparison

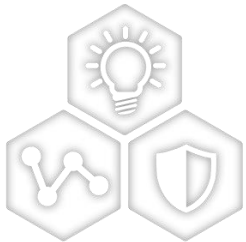
MMT_Assembly			ASSH_Assembly																			
																						
<table><tr><td>Lead Frame Material</td><td colspan="2">C7025</td></tr><tr><td>Lead-Frame Paddle Size</td><td>118 x 87 mils</td><td>82x 82 mils</td></tr><tr><td>Lead finish</td><td colspan="2">Matte tin</td></tr></table>			Lead Frame Material	C7025		Lead-Frame Paddle Size	118 x 87 mils	82x 82 mils	Lead finish	Matte tin		<table><tr><td>Lead Frame Material</td><td colspan="2">C7025</td></tr><tr><td>Lead-Frame Paddle Size</td><td colspan="2">126 x 87 mils</td></tr><tr><td>Lead finish</td><td colspan="2">NiPdAu</td></tr></table>		Lead Frame Material	C7025		Lead-Frame Paddle Size	126 x 87 mils		Lead finish	NiPdAu	
Lead Frame Material	C7025																					
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Lead finish	Matte tin																					
Lead Frame Material	C7025																					
Lead-Frame Paddle Size	126 x 87 mils																					
Lead finish	NiPdAu																					

# **CCB 4404.002 and CCB 6051 Packing Materials for Tube PCN #: RMES-28FEHU333**



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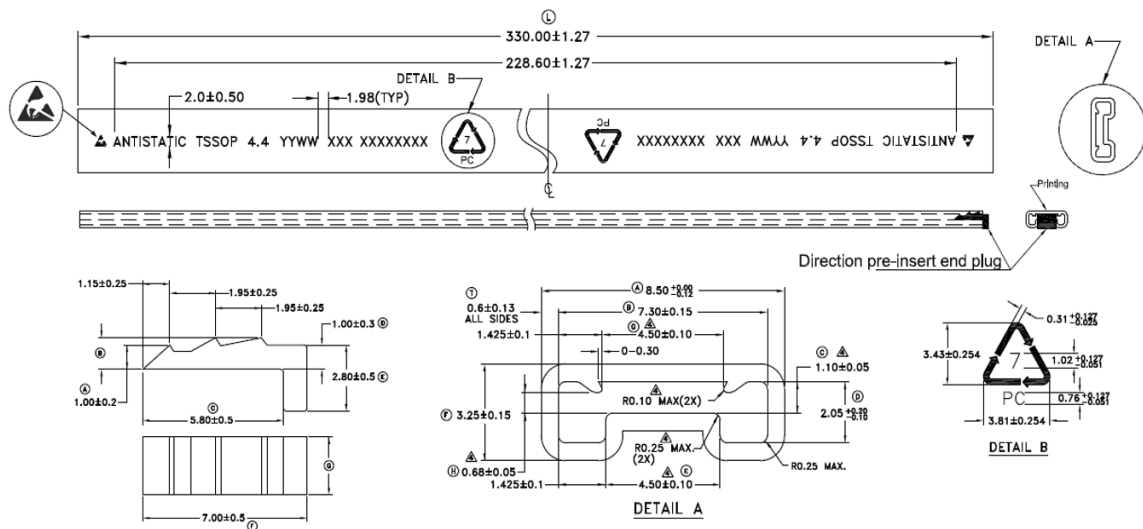
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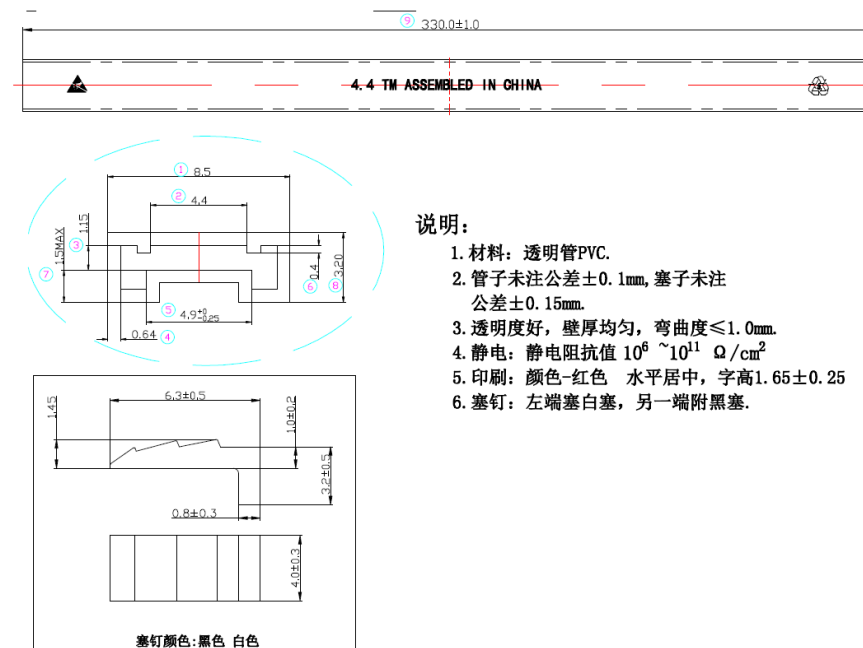
SMART | CONNECTED | SECURE

## TUBE (8L TSSOP)

## MTAI\_Test



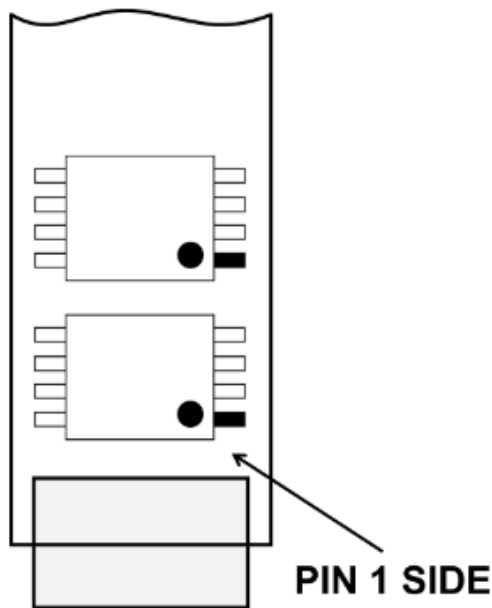
# ASSH\_Test



Location	Tube Length (mm)	Tube Color	BQM	Tube/Bag
MTAI	330.00 ±1.27	Clear	100	160
ATXSH (ASSH)	330 ± 0.1	Clear	100	160

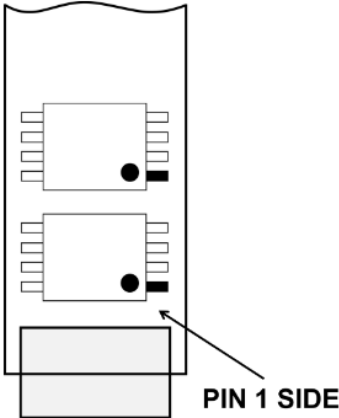
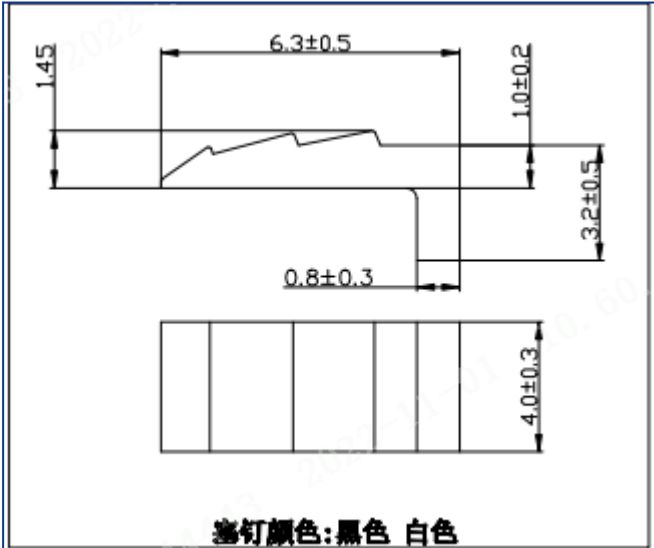
# TUBE (8L TSSOP) – Pin 1 Orientation & Plug / Pin Color

## MTAI\_Test



Media	Pin1 Side	Opposite Side
Plug	WHITE	YELLOW

## ASSH\_Test



Media	Pin1 Side	Opposite Side
Plug	White	Black





# TUBE Packing Method for Non dry Pack (MSL-1)

MTAI_Test	ASSH_Test
<p data-bbox="104 436 715 465"><u>Non-Dry pack for MSOP/TSSOP/QFN/DFN in tubes</u></p> <div data-bbox="112 501 1210 733"></div> <p data-bbox="547 811 828 856">No inner box</p>	<div data-bbox="1294 448 2377 739"></div> <p data-bbox="1717 828 1997 873">No inner box</p>

# Packing Method of Outer carton for TUBE for Non dry Pack (MSL-1)

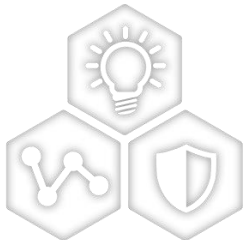
MTAI_Test			ASSH_Test		
Carton	Dimension W x L x H (cm)	Number of Bag/carton	Carton	Dimension W x L x H (cm)	Number of Bag/carton
M01-031 (H1)	18x37.5x4.4	Partial bag	1	36.8X17.9X7	2
M01-032 (H5)	18x37.5x7	1	2	36.5X17.5X16	4
M01-033 (H0)	18x37x16	3	3	36.5X35X16.5	6
M01-015 (B8)	35.5x35.5x16.5	4			

**CCB 4404.002 and CCB 6051**  
**Packing Materials for Tape and**  
**Reel (TnR)**  
**PCN #: RMES-28FEHU333**



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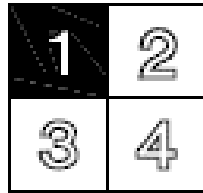
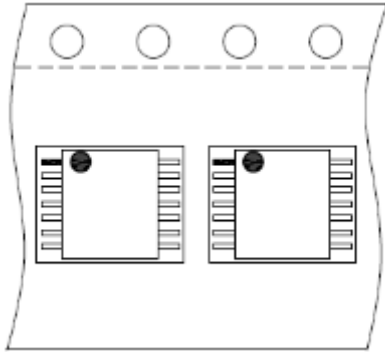
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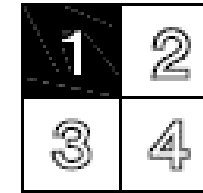
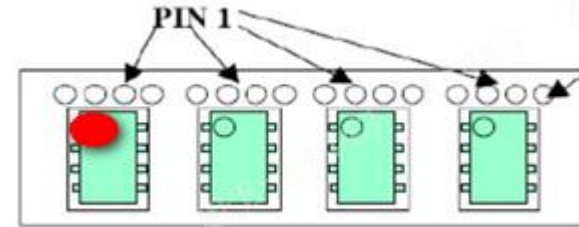
# Pin1 Orientation Quadrant in Tape and Reel

MTAI\_Test



Quadrant 1

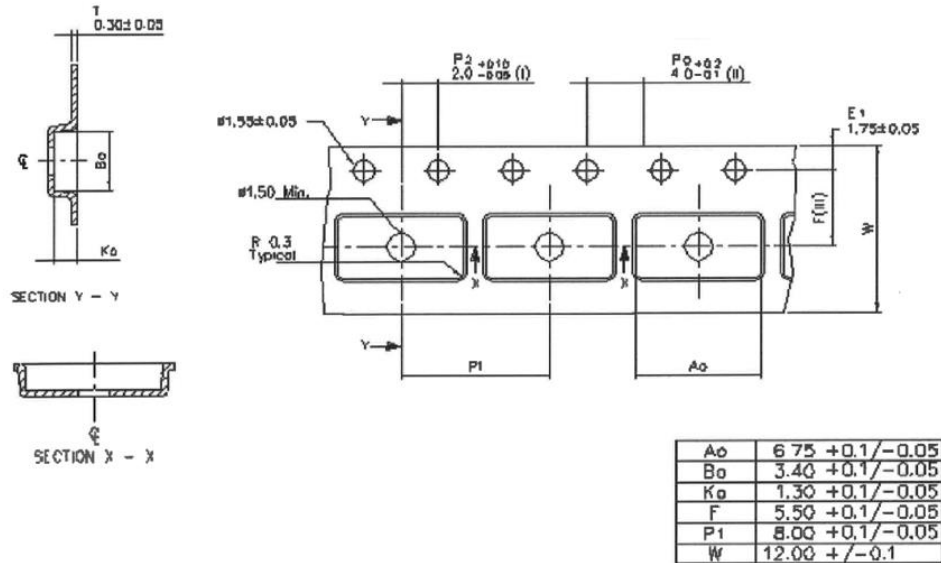
ASSH\_Test



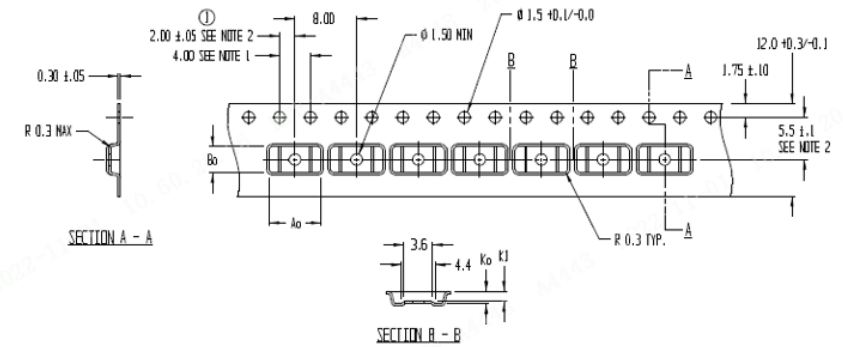
Quadrant 1

# Carrier Tape (8L TSSOP)

## MTAI\_Test



## ASSH\_Test



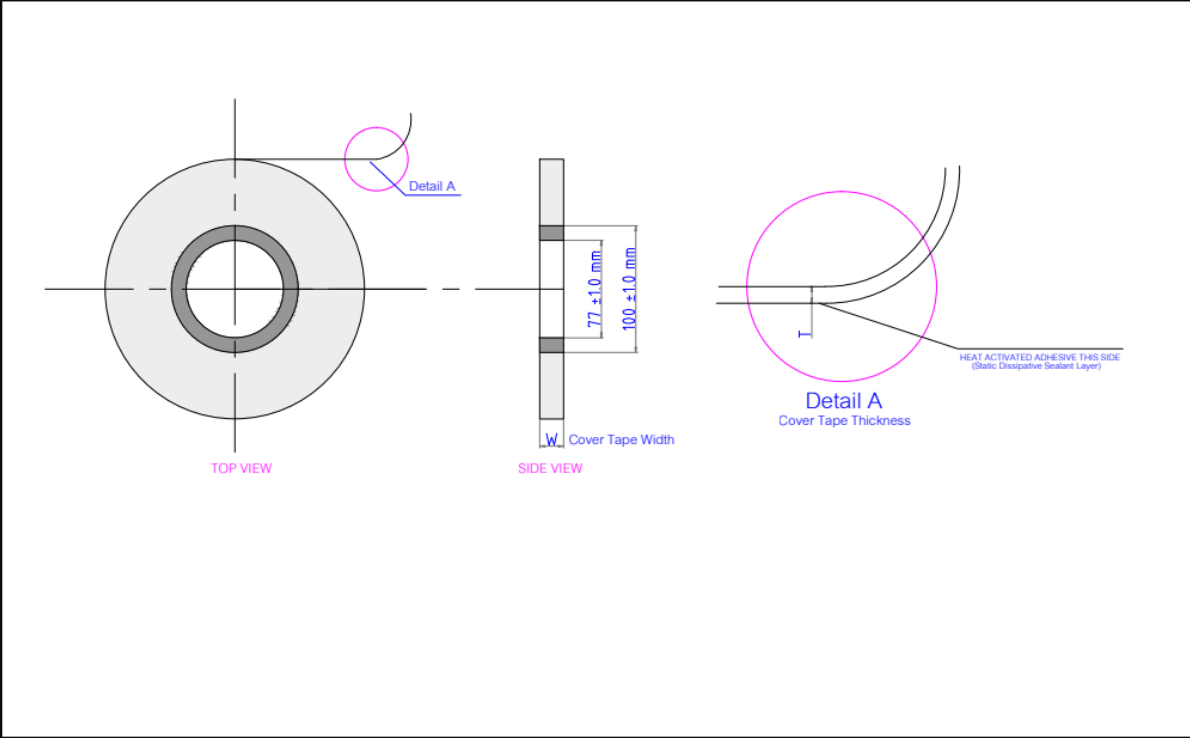
- NOTES:
1. TO SPROCKET HOLE PITCH CUMULATIVE TOLERANCE  $\pm 0.2$
  2. POCKET POSITION RELATIVE TO SPROCKET HOLE MEASURED AS TRUE POSITION OF POCKET, NOT POCKET HOLE
  3. A0 AND B0 ARE CALCULATED ON A PLANE AT A DISTANCE "R" ABOVE THE BOTTOM OF THE POCKET.

A0 = 6.80  
B0 = 3.40  
K0 = 1.60  
K1 = 1.20

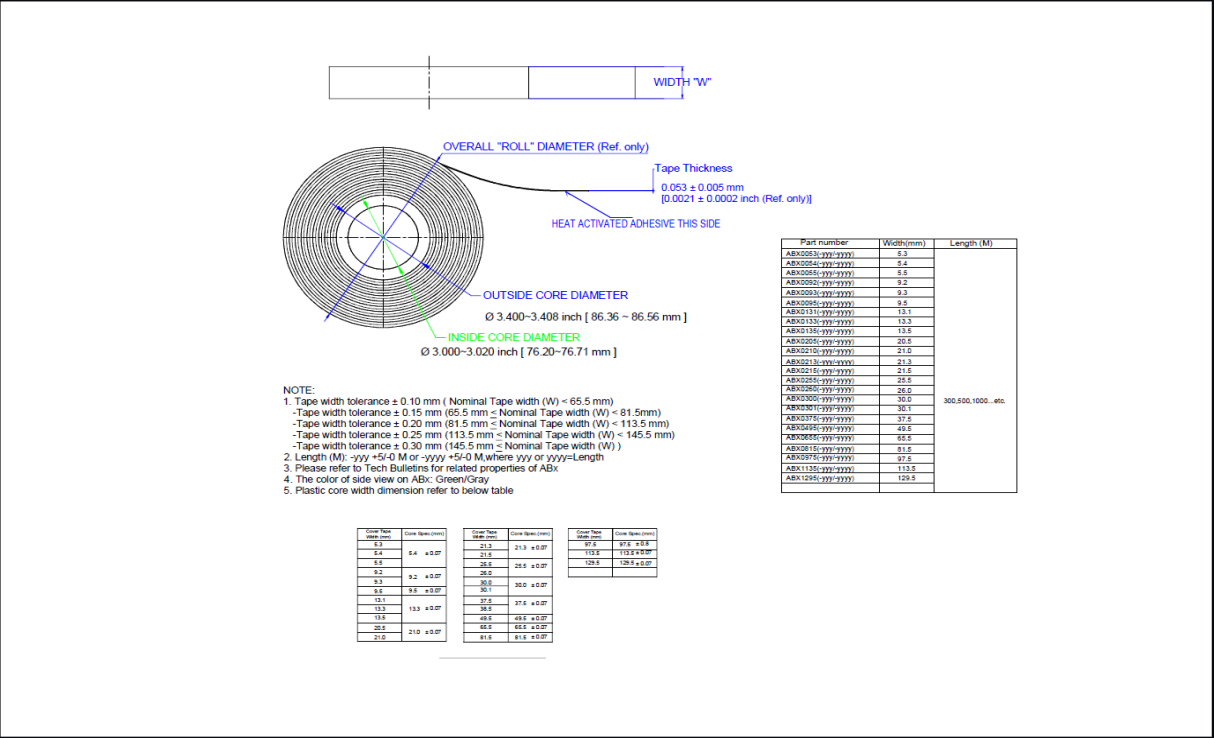
Plant	W (mm.)	P (mm.)	A0 (mm.)	B0 (mm.)	K0 (mm.)	K1 (mm.)	Thickness	BQM
MTAI	12.00 ±0.10	8 +0.1/-0.05	6.75 +0.1/-0.05	3.4 +0.1/-0.05	1.3 +0.1/-0.05	-	0.30±0.05	2500
ATXSH (ASSH)	12+0.3/-0.1	8+/-0.2	6.8+/-0.2	3.4+/-0.2	1.6+/-0.2	1.2+/-0.2	0.3+/-0.05	2500 or 5000

# Cover Tape (8L TSSOP)

## MTAI\_Test



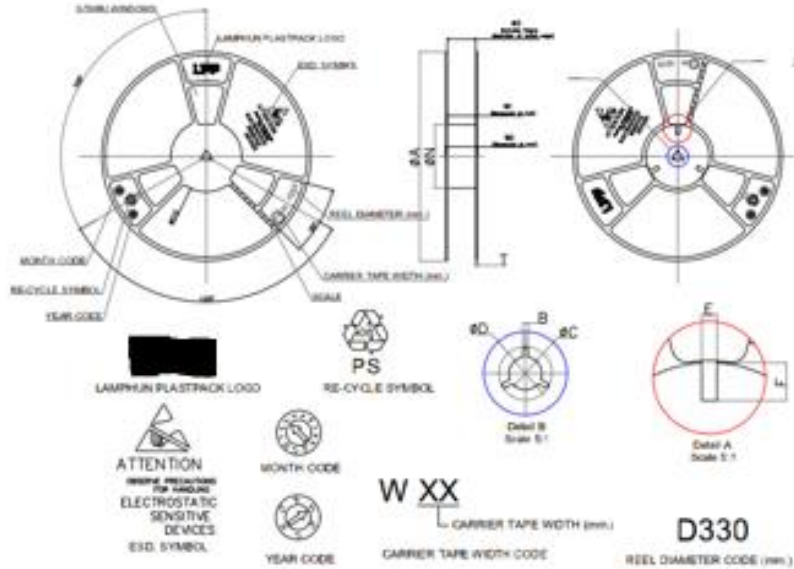
## ASSH\_Test



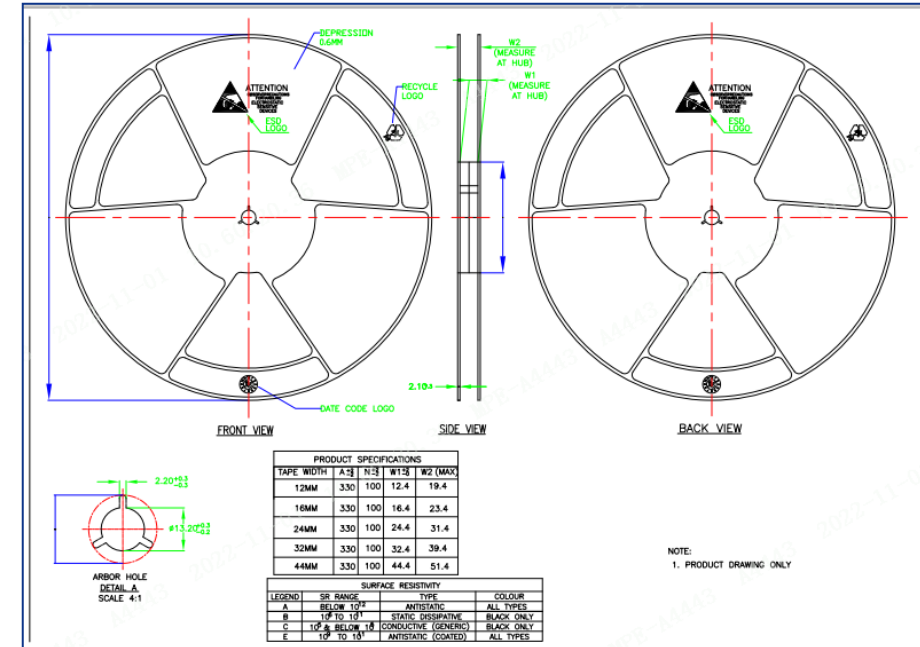
Plant	Width W (mm.)	Thickness T (mm.)	Colour	Sealing Methodology
MTAI	9.05 +0.05/-0.15	0.050 ±0.010	Clear	Heat Seal
ATXSH (ASSH)	9.2+/-0.1	0.053+/-0.005	Clear	Heat Seal

# Plastic Reel (8L TSSOP)

## MTAI\_Test



## ASSH\_Test



Plant	Reel Diameter (mm.)	Reel Hub Size (mm)	Reel Width Max (mm.)	Colour
MTAI	330 +/- 2.0	100 +/- 2.0	18.40 Max	Dark Blue
ATXSH (ASSH)	330+/-2	100+/-2	19.4 MAX	White

# TAPE & REEL Packing Static Sensitive Bag for Non dry Pack (MSL-1)

# MTAI\_Test

The diagram shows a rectangular bag with a 'Supershield' logo and a caution label. Dimensions are labeled: A for WIDTH, B for SEAL, and B for LENGTH. The bag is shown in a perspective view.

A small diagram showing a cross-section of the film with a dimension line labeled 'Thickness'.

## STATIC SHIELDING FILM (BAG)

Note:

- (1) Printing Color: Yellow
- (2) Thickness: 3mils +/- 10% (0.3)
- (3) Specification Reference: MS-15090
- (4) MM: Month code
- (5) YYYY: Year code

ITEM	MEDIA	WIDTH (+5/-0 MM)	LENGTH (+5/-0 MM)	SEAL (+/-2 MM)	WCHP P/N
1	TUBE	160	650	10	24000002
2	T/R	220	300	10	24000042
3	T/R	370	420	10	24000023
4	TRAY	280	560	10	24000061

# ASSH\_Test

The diagram shows a rectangular bag with dimensions: 370mm width, 460mm length, and 10±2mm seal. An arrow indicates the '开口方向' (Opening Direction).

注意:

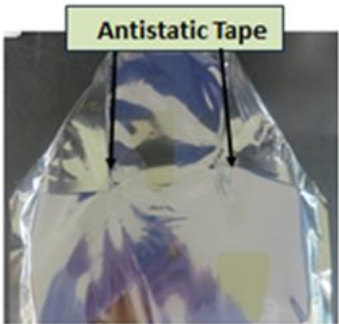
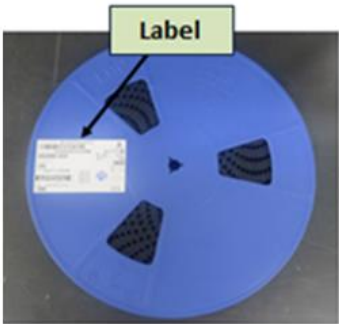
1. 单位: MM
2. 公差: 三封10±2
3. 厚度公差: 0.075±10%
4. 尺寸公差: ±5
5. 材质: VMPET/CPE

Plant	Length (mm)	Width (mm)	Thickness (mils)	Colour
MTAI	420 +5.0/-0.0	370 +5.0/-0.0	3.0 ±0.3	Transparent
ATXSH (ASSH)	460+/-5	370+/-5	3+/-0.3	Transparent



# T/R Packing Method for Non dry Pack (MSL-1)

## MTAI\_Test



No inner box

Reel/Bag

1

## ASSH\_Test



No inner box

Reel/Bag

1

# Packing method of Outer carton for T/R for Non dry Pack (MSL-1)

## MTAI\_Test

Carton	Dimension W x L x H (cm)	Number of reel per carton (Reel diameter (D) = 330mm)
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

### Example



Packing for tape and reel in carton box B2 (DWG-M01-013) / B3 (DWG-M01-014).



Packing for tape and reel in carton box B8 (DWG-M01-015).



Packing for tape and reel in carton box TT (DWG-M01-011)

## ASSH\_Test

Carton	Dimension W x L x H (mm)	Number of reel per carton (Reel diameter (D) = 330mm)
1	357X356X42	1
2	365X350X165	8
3	384X362X385	15



Affected Catalog Part Numbers (CPN)

24LC256-E/ST  
24AA256-E/ST  
24FC256-E/ST  
24LC256-I/ST  
24AA256-I/ST  
24FC256-I/ST  
24LC256T-I/ST  
24AA256T-I/ST  
24FC256T-I/ST  
24LC256T-E/ST  
24LC256T-E/STNOK  
24AA256T-E/ST  
24FC256T-E/ST



# **QUALIFICATION REPORT SUMMARY**

**PCN #: RMES-28FEHU333**

**Date:  
November 28, 2022**

**Qualification of ASSH as a new assembly site and as an additional final test site for 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package. The 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package will be qualify by similarity (QBS).**

**Purpose:** Qualification of ASSH as a new assembly site and as an additional final test site for 24AA256, 24LC256 and 24FC256 device families available in 8L TSSOP (4.4mm) package.

**CCB #:** 6051

Test Name	Test Conditions	Result / Remarks
Test Program Checkout	DLOGS for (1) DUTREAD (2) Sigpage (3) Fuse Read (4) Benchmark	<b>Passed</b>
Correlation Test / Site-to-site Verification	Correlation Pattern vs Actual Strip Maps are TALLY	<b>Passed</b>
Correlation lot	Run 1 qualification lot with 2849 units at currently qualified test site (original site – MTAI) to be retested at new test site (destination site – ASSH)	<b>Passed</b>