



**Product Change Notification / MFOL-21ZHLK418**

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**Date:**

19-Sep-2022

**Product Category:**

Wireless IC

**PCN Type:**

Manufacturing Change

**Notification Subject:**

CCB 5033 Final Notice: Qualification of STAR as an additional final test site for selected MICRF229xx and MICRF230xx device families available in 16L QSOP (3.90mm) package.

**Affected CPNs:**

[MFOL-21ZHLK418\\_Affected\\_CPN\\_09192022.pdf](#)  
[MFOL-21ZHLK418\\_Affected\\_CPN\\_09192022.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 STAR as an additional final test site for selected MICRF229xx and MICRF230xx device families available in 16L QSOP (3.90mm) package.

**Pre and Post Change Summary:**

	Pre Change	Post Change

<b>Final Test Site</b>			Unisem (M) Berhad Perak, Malaysia (UNIS)	Unisem (M) Berhad Perak, Malaysia (UNIS)	Stars Microelectronics (Thailand) Public Company Limited (STAR)
<b>Base Quantity Multiple (BQM)</b>	<b>Tape and Reel</b>	<b>(-TR)</b>	2500 units	2500 units	2500 units
		<b>(-T5)</b>	500 units	500 units	500 units
	<b>Tube</b>		98 units	98 units	98 units
<b>PIN 1 Orientation</b>	<b>Tape and Reel</b>		Quadrant 1	Quadrant 1	Quadrant 1
	<b>Tube</b>		See Pre and Post change comparison.		
<b>Carrier Tape</b>			Minor changes See Pre and Post change comparison.		
<b>Cover Tape</b>			Minor changes. See Pre and Post change comparison.		
<b>Plastic Reel</b>	<b>Color</b>		Dark Blue	Light Blue	
	<b>Dimension</b>		No changes. See Pre and Post change comparison.		
<b>Tube</b>	<b>Color</b>		Clear	Clear	
	<b>Dimension</b>		Minor changes. See Pre and Post change comparison.		
<b>Packing Method</b>			See Pre and Post change comparison.		

**Impacts to Data Sheet:**None

**Change Impact:**None

**Reason for Change:**To improve on-time delivery performance by qualifying STAR as additional final test site.

**Change Implementation Status:**In Progress

**Estimated First Ship Date:**September 19, 2022 (date code: 2239)

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

**Time Table Summary:**

	<b>March 2022</b>	<b>September 2022</b>
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	1	11	1	1	3	3	3	3	4
Workweek	0		2	3	6	7	8	9	0
Initial PCN Issue Date		x							
Qual Report Availability								x	
Final PCN Issue Date								x	
Estimated Implementation Date								x	

**Method to Identify Change:**Traceability code

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

**Revision History:**March 07, 2022: Issued initial notification.  
September 19, 2022: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on September 19, 2022. Updated affected CPN list to include catalog part number (CPN) released prior issuance of the Final PCN.

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

## Attachments:

[PCN\\_MFOL-21ZHLK418\\_Qual Report.pdf](#)  
[PCN\\_MFOL-21ZHLK418\\_Pre\\_and\\_Post summary.pdf](#)

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

## Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our **PCN home page** select register then fill in the required fields. You will find instructions about registering for

Microchips PCN email service in the [PCN FAQ](#) section.

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.



**MICROCHIP**

**QUALIFICATION REPORT SUMMARY  
RELIABILITY LABORATORY**

**PCN #: MFOL-21ZHLK418**

**Date:  
April 8, 2022**

**Qualification of STAR as an additional final test site for  
selected MICRF229xx and MICRF230xx device families  
available in 16L QSOP (3.90mm) package.**



**MICROCHIP**  
PACKAGE QUALIFICATION REPORT

**Purpose**      **Qualification of STAR as an additional final test site for selected MICRF229xx and MICRF230xx device families available in 16L QSOP (3.90mm) package.**

**CCB No.**      5033

<b>Test / Evaluation</b>	<b>Test Condition / Parameters</b>	<b>Result</b>
<b>Correlation Plan</b>	<ul style="list-style-type: none"><li>• 33 correlation units of of MICRF229YQS to be tested at UNIS and send to STAR.</li><li>• 3,000 untested units from each package size for yield and bin-to-bin comparison (UNIS to STAR).</li></ul>	Passed

Affected Catalog Part Numbers (CPN)

MICRF229YQS

MICRF230YQS

MICRF229YQS-T5

MICRF229YQS-TR

MICRF230YQS-T5

MICRF230YQS-TR

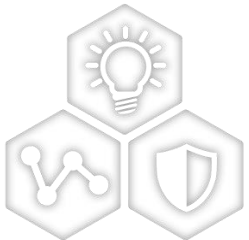
MICRF229YQS-HS-TR

**CCB# 5033**  
**PCN# MFOL-21ZHLK418**



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SMART | CONNECTED | SECURE

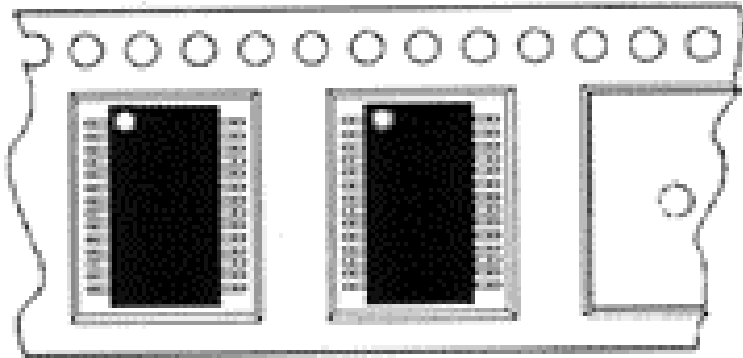


# Pre and Post Change Summary – Base Quantity Multiple (BQM) per reel

UNIS	STAR
<p data-bbox="333 482 983 615">(-TR) Units per reel: 2500 1 reel per bag</p>	<p data-bbox="1536 482 2186 615">(-TR) Units per reel: 2500 1 reel per bag</p>
<p data-bbox="351 711 970 843">(-T5) Units per reel: 500 1 reel per bag</p>	<p data-bbox="1549 711 2168 843">(-T5) Units per reel: 500 1 reel per bag</p>

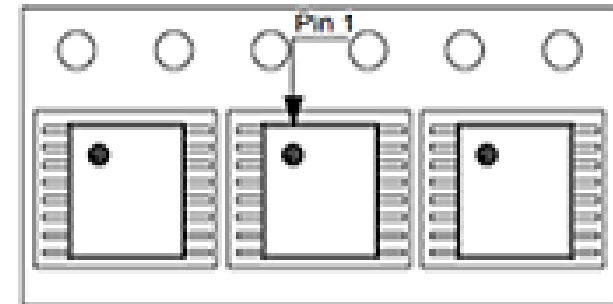
# Pre and Post Change Summary – Pin 1 Orientation

UNIS



Quadrant 1

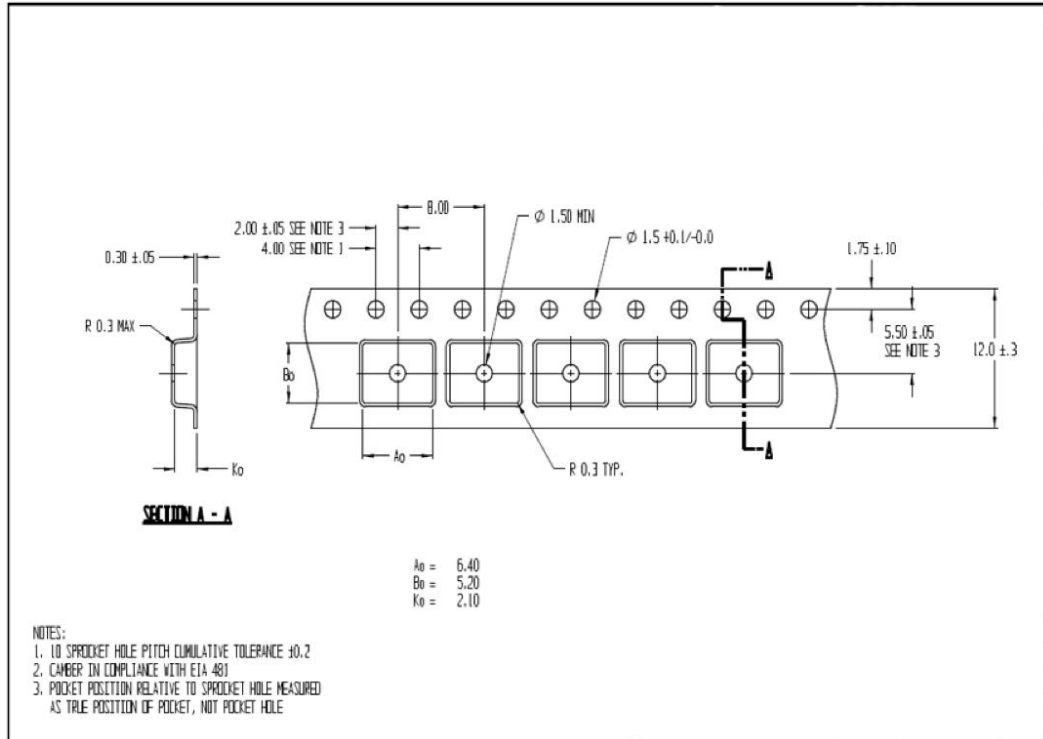
STAR



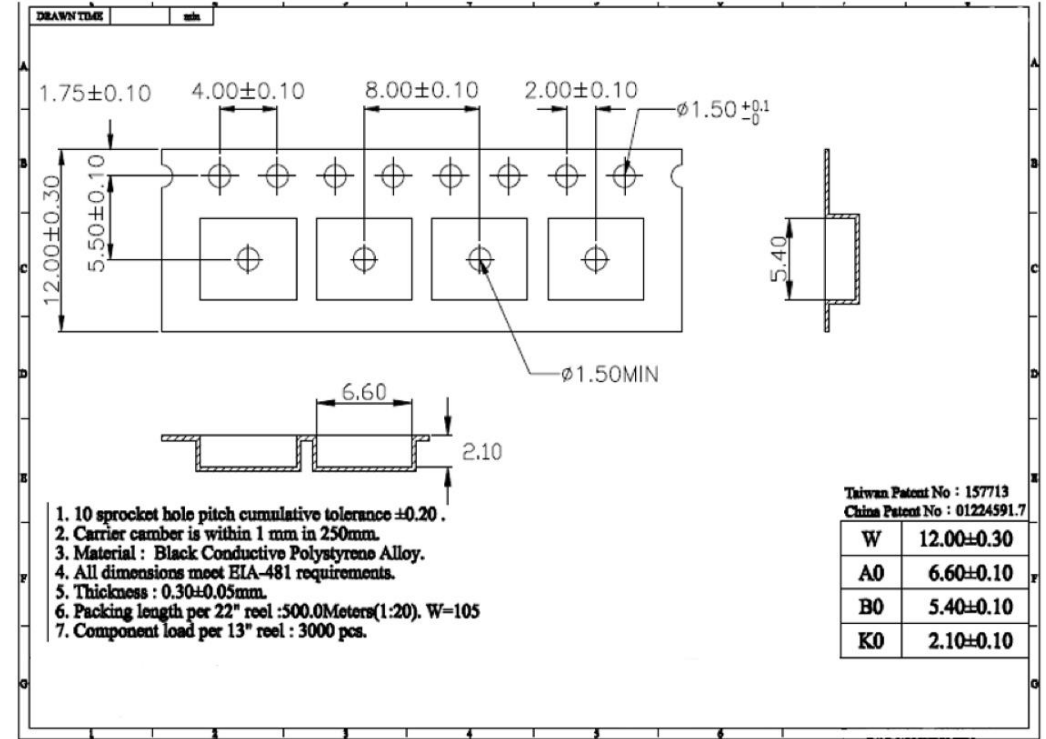
Quadrant 1

# Pre and Post Change Summary - Carrier Tape

## UNIS

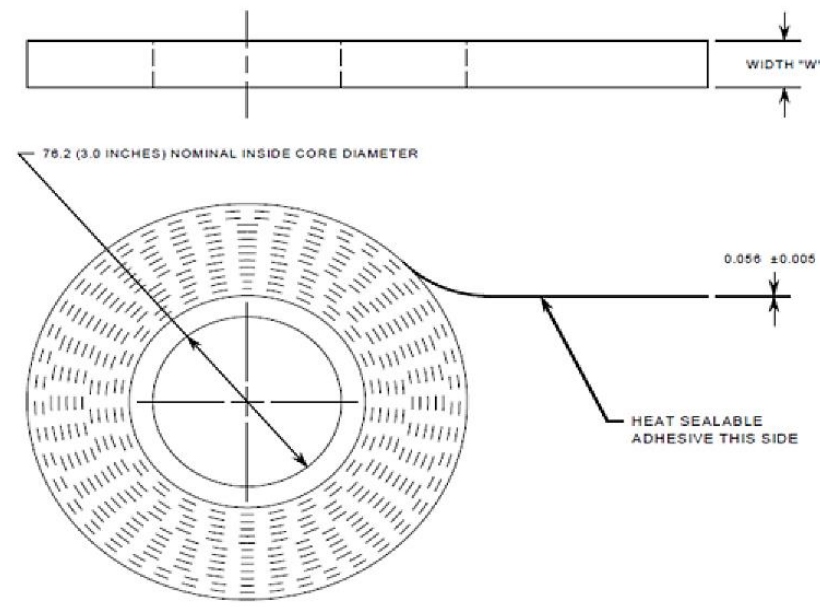
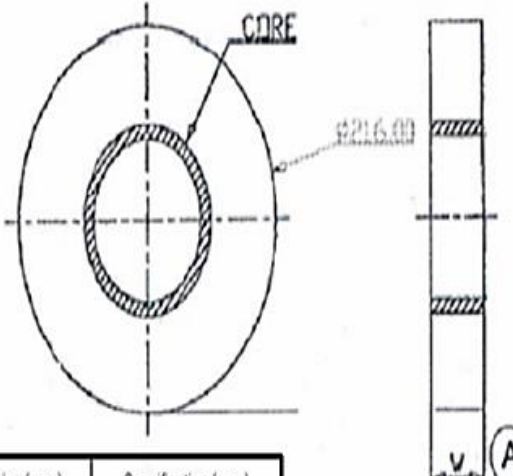


## STAR



Plant	W (mm.) $\pm 0.3$	P (mm.) $\pm 0.1$ or Specific	$A_0 \pm 0.1$ or Specific	$B_0 \pm 0.1$ or Specific	$K_0 \pm 0.1$ or Specific
UNIS	12.00	8	6.40	5.20	2.10
STAR	12.00	8	6.60	5.40	2.10

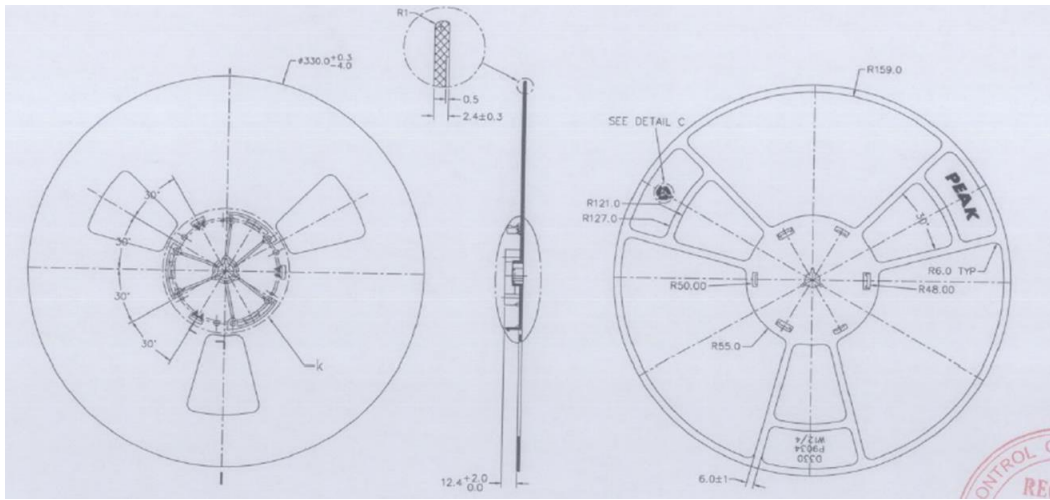
# Pre and Post Change Summary - Cover Tape

UNIS	STAR																																										
 <p>76.2 (3.0 INCHES) NOMINAL INSIDE CORE DIAMETER</p> <p>WIDTH "W"</p> <p>0.056 ± 0.005</p> <p>HEAT SEALABLE ADHESIVE THIS SIDE</p> <p><b>NOTE:</b></p> <ol style="list-style-type: none"> <li>1. REEL TO CONTAIN 300 METERS OF SPLICE FREE MATERIAL.</li> <li>2. MATERIAL: ANTISTATIC POLYESTER FILM.</li> <li>3. COLOR: TRANSPARENT, PALE BLUE.</li> <li>4. THESE WIDTHS ARE ALSO AVAILABLE IN 500 METER LENGTHS.</li> </ol>	 <table border="1" data-bbox="1426 456 1860 685"> <thead> <tr> <th>Specification</th> <th>Maximum</th> <th>Minimum</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>Width (mm)</td> <td>9.20 +/- 0.10 mm</td> <td>9.23 mm</td> <td>9.16 mm</td> <td>9.20 mm</td> </tr> <tr> <td>Thickness (mm)</td> <td>0.056 +/- 0.005 mm</td> <td>0.053 mm</td> <td>0.053 mm</td> <td>0.053 mm</td> </tr> <tr> <td>Top Surface Resistivity</td> <td>1.0E+9 to 9.9E+10 ohms/sq</td> <td>4.4E+9 ohms/sq</td> <td>4.1E+9 ohms/sq</td> <td>4.3E+9 ohms/sq</td> </tr> <tr> <td>Adhesive Surface Resistivity</td> <td>1.0E+9 to 9.9E+10 ohms/sq</td> <td>3.8E+9 ohms/sq</td> <td>3.1E+9 ohms/sq</td> <td>3.5E+9 ohms/sq</td> </tr> <tr> <td>Peel Strength</td> <td>55 +/- 15 grams</td> <td>49.0 grams</td> <td>47.0 grams</td> <td>48.0 grams</td> </tr> <tr> <td>Haze</td> <td>75% Max</td> <td>57.2</td> <td>57.1</td> <td>57.15</td> </tr> </tbody> </table> <table border="1" data-bbox="1783 785 2165 1013"> <thead> <tr> <th>Width size (mm.)</th> <th>Specification (mm.)</th> </tr> </thead> <tbody> <tr> <td>5.3</td> <td>5.2 - 5.4</td> </tr> <tr> <td>9.2</td> <td>9.1 - 9.3</td> </tr> <tr> <td>13.3</td> <td>13.2 - 13.4</td> </tr> </tbody> </table>	Specification	Maximum	Minimum	Average	Width (mm)	9.20 +/- 0.10 mm	9.23 mm	9.16 mm	9.20 mm	Thickness (mm)	0.056 +/- 0.005 mm	0.053 mm	0.053 mm	0.053 mm	Top Surface Resistivity	1.0E+9 to 9.9E+10 ohms/sq	4.4E+9 ohms/sq	4.1E+9 ohms/sq	4.3E+9 ohms/sq	Adhesive Surface Resistivity	1.0E+9 to 9.9E+10 ohms/sq	3.8E+9 ohms/sq	3.1E+9 ohms/sq	3.5E+9 ohms/sq	Peel Strength	55 +/- 15 grams	49.0 grams	47.0 grams	48.0 grams	Haze	75% Max	57.2	57.1	57.15	Width size (mm.)	Specification (mm.)	5.3	5.2 - 5.4	9.2	9.1 - 9.3	13.3	13.2 - 13.4
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Plant	Carrier Tape Width	Cover Tape Width	Thickness	Color	Sealing mythology
UNIS	12mm	9.20	0.056	Clear	Heat Sealing
STAR	12mm	9.20	0.050	Clear	Heat Sealing

# Pre and Post Change Summary – Plastic Reel

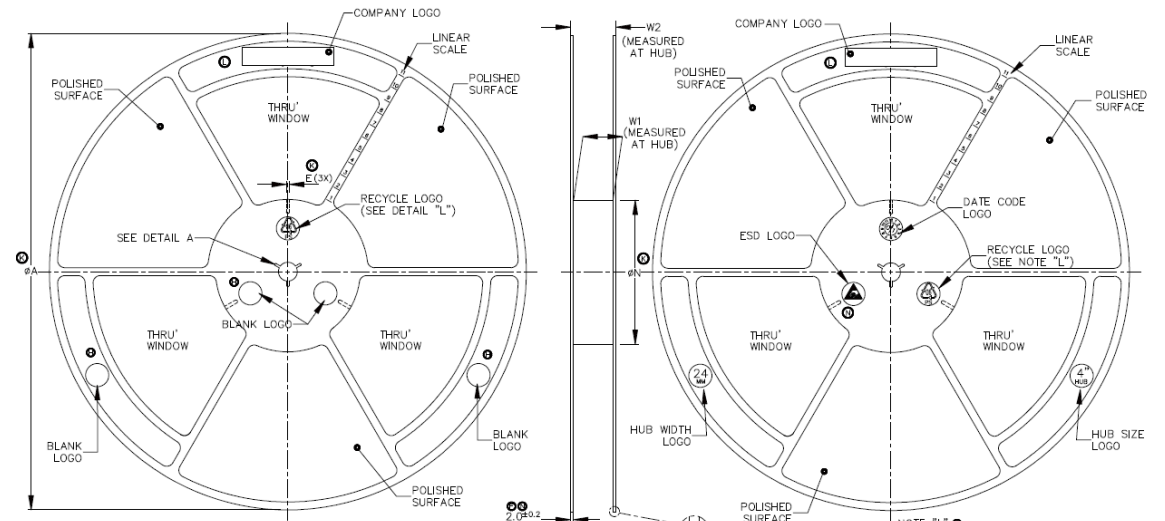
## UNIS



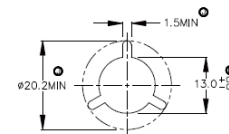
### NOTES:

- UNLESS OTHERWISE SPECIFIED
1. MATERIAL: POLYSTYRENE(BLUE)
  2. ANTISTATIC COATED
  3. FLANGE WARPAGE : 3 MM MAXIMUM
  4. ALL DIMENSIONS ARE IN MM
  5. ESD – SURFACE RESISTIVITY  
–  $10^8$  TO  $10^{11}$  OHMS/SQ
  6. GENERAL TOLERANCE :  $-X.X = \pm 0.4$  ,  $-X.XX = \pm 0.20$
  7. TOTAL THICKNESS OF REEL: 18.4 MAX
  8. PART NO: P9034

## STAR








TAPE WIDTH	PRODUCT SPECIFICATIONS				
	Ø PA ±2.0	Ø RN ±2.0	W1	W2 (MAX)	E (MIN)
08MM	330	100	8.4 ± 0.2	14.4	2.5
12MM	330	100	12.4 ± 0.2	18.4	2.5
16MM	330	100	16.4 ± 0.2	22.4	2.5
24MM	330	100	24.4 ± 0.2	30.4	2.5
32MM	330	100	32.4 ± 0.2	38.4	2.5



ARBOR HOLE  
DETAIL A  
SCALE 3:1

- NOTE "L"
- ANTISTATIC (ALL COLORS)
  - STATIC DISSIPATIVE (BLACK)
  - CONDUCTIVE (BLACK)
- NOTE:
1. GENERIC PRODUCT.
  2. FOR PRODUCT DRAWING ONLY.
  3. SANDBLAST ALL SURFACE UNLESS OTHERWISE STATED.
  4. MOLD 2

# Pre and Post Change Summary – Packing Method

UNIS	STAR
 <p>Microchip Barcode label</p>	
 <p>Front: ESD LOGO, Customer Barcode Label, Adhesive ESD tape Back: Adhesive ESD tape</p>	
 <p>Front: ESD LOGO, Customer Barcode Label, Antistatic Bubble bag Back: Antistatic Bubble bag</p>	
 <p>Customer Barcode Label, Clear Tape, MES ID with red sticker</p>	 <p>Packing in Reel 13 Inch → Insert Reel in static shielding bag → Packing in box → Put label</p>

- 1) Peak 13" Blue Reel - D330-P9034-W12/4 (P/N: 47370032)
- 2) Microchip Barcode label (P/N: 50320185)
- 3) 12mm Protective band (P/N: 47560001)

- Front:
- 1) Static Shield Bag 16"X16" (P/N: 50020046)
  - 2) Microchip Standard Barcode Label (P/N:50320185) at below ESD Logo
- Back:
- 1)Seal Antistatic shield bag with adhesive ESD tape.

- 1)Quantity/box = 1 reel
- 2) Use antistatic bubble bag sheet fill in the space if much space inside the box

- 1) Microchip Box = M02-009 Brown-Pizza-13" (P/N: 50080187)
- 2) Microchip Standard Barcode Label (P/N:50320185) at left side of box opening
- 3) Red sticker with MES ID at right side of box opening
- 4) Seal box opening with clear tape at the middle

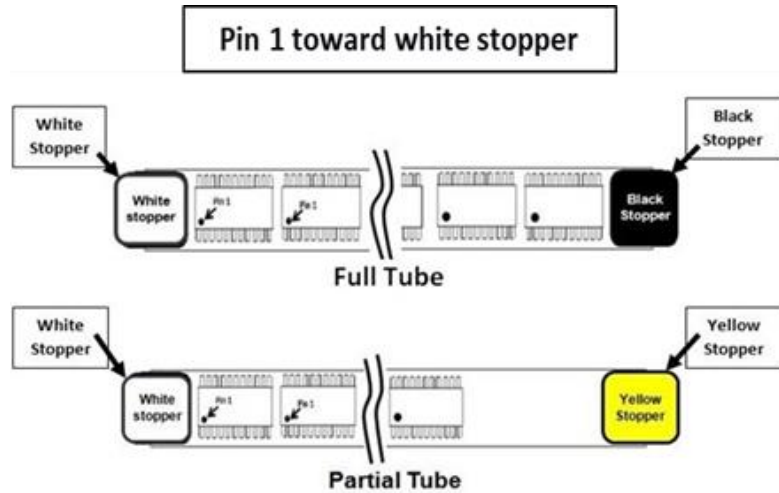
(Note: Remove red sticker with MES ID before ship to customer)

# Pre and Post Change Summary – Tube Base Quantity Multiple (BQM) per tube

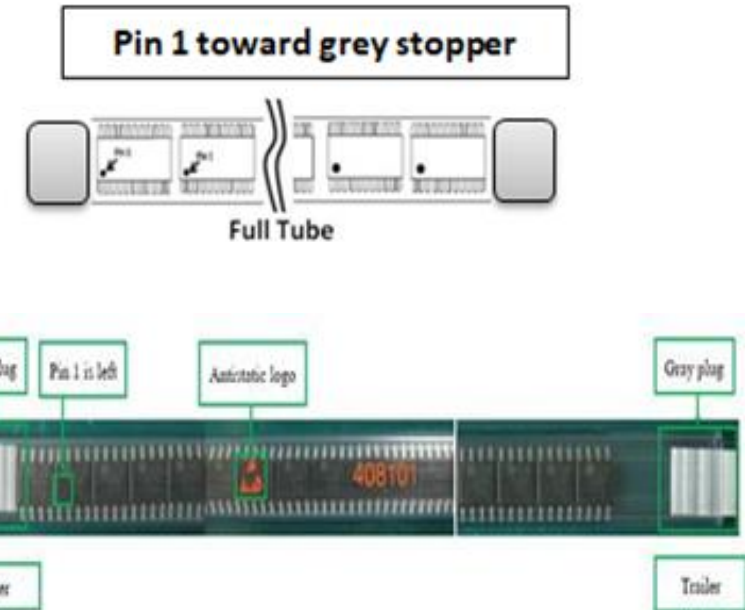
UNIS	STAR
Units per tube: 98	Units per tube: 98

# Pre and Post Change Summary – Tube (Pin1 Orientation)

## UNIS



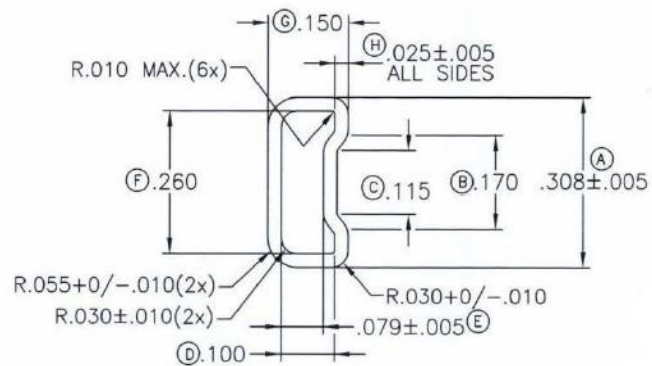
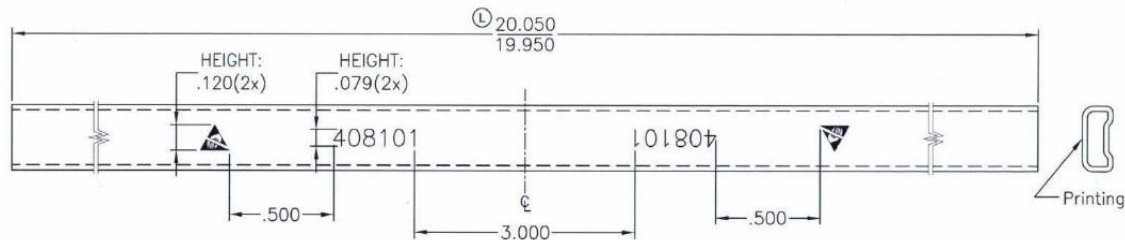
## STAR



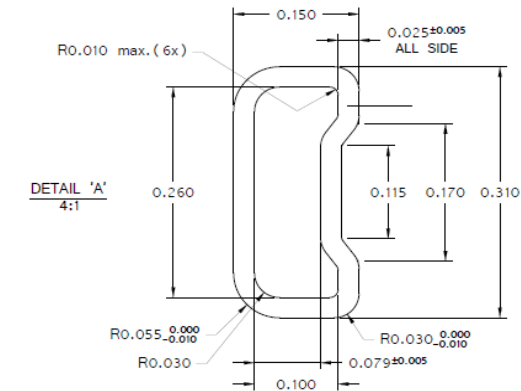
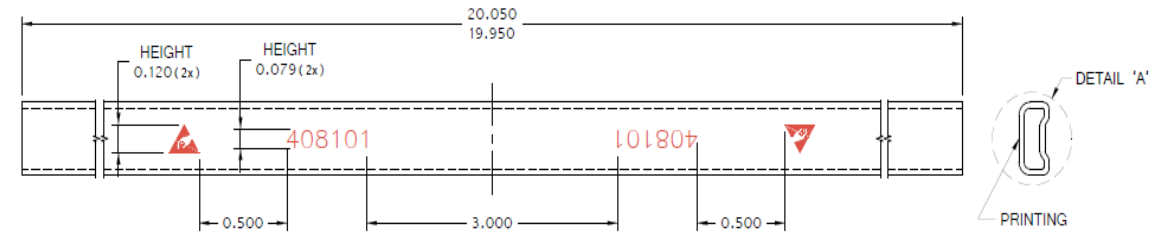


# Pre and Post Change Summary – Packing Tube dimension

## UNIS



## STAR



Plant	Tube Color
UNIS	Clear
STAR	Clear

# Pre and Post Change Summary – Tube Plug Color

UNIS	STAR
Full Tube: White – Black Partial Tube: White – Yellow	Grey-Grey

# Pre and Post Change Summary – Tube Packing Method

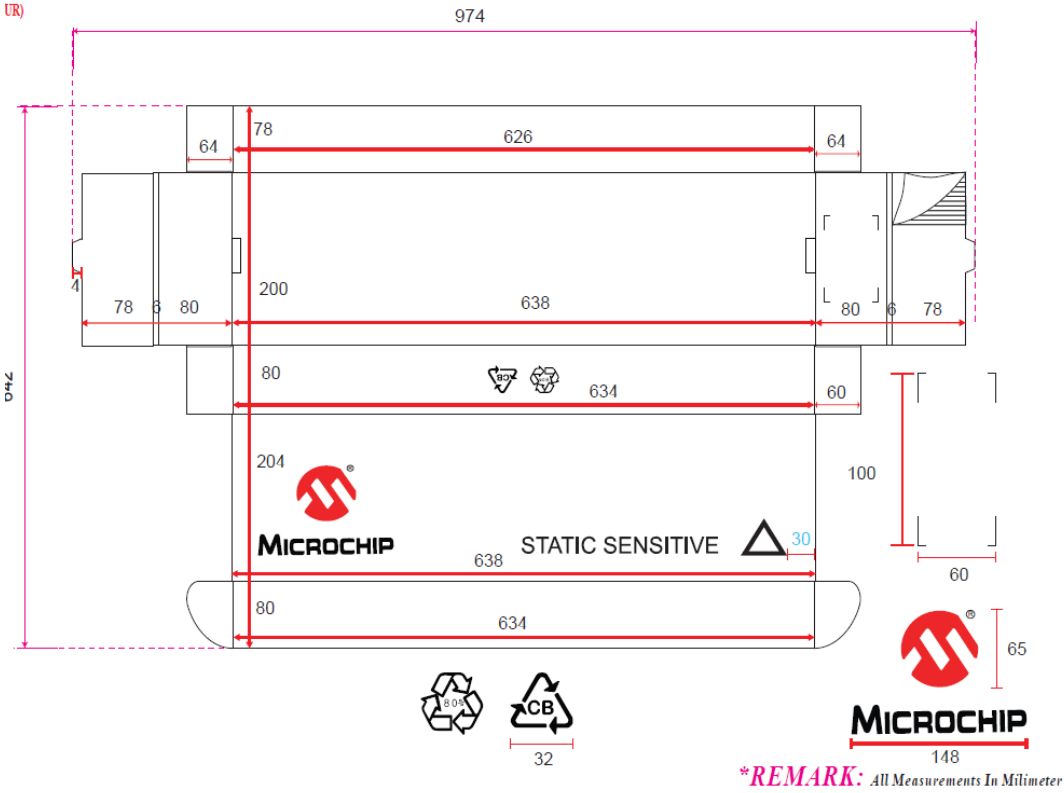

## UNIS

## STAR

	<p>1) 1 Tube = Max 98 units                  2) Tube = ITW SOICN Clear (P/N: 47220001)                  3) End plug                  Full tube:                  - White (P/N: 47260090) - Black (P/N: 47260012)                  Partial Tube:                  - White (P/N: 47260090) - Yellow (FT00063)                  Note: Pin 1 mengahala ke White Pin</p>
	<p>1) 1 Bundle = Max 150 Tubes                  2) Bubble bag sheet wrap on both end side of tube and seal with adhesive ESD tape                  Note: Meratakan tube sebelum balut bubble bag</p>
	<p>1) Antistatic Shield Bag 12\"X32\" (P/N: 50020053)                  2) 1 Bag = 1 bundle = Max 150 Tubes                  3) Microchip Barcode Label (P/N: 50320185) on front of Antistatic Shield Bag                  4) Seal the excess Antistatic shield bag with ESD adhesive tape at the back</p>
	<p>1) Microchip Box = M02-011 Big Tube Inner\" Brown (P/N: 50080188)                  2) 1 box = Max 1 bag                  3) Use anti-static bubble bag sheet to fill the space if much space inside the box</p>
	<p>1) Microchip Barcode Label (P/N: 50320185) at the right side of box                  2) Seal the box opening with 2 x clear tapes                  3) Tamper-Proof Seal at the middle of box opening                  (Note: Remove MES ID with red sticker before ship to customer)</p>



# Pre and Post Change Summary – Inner Box Size

UNIS	STAR
 <p>Technical drawing of the UNIS inner box showing dimensions in millimeters. The overall length is 974 mm. Key dimensions include: 64 mm (width of top flaps), 78 mm (width of top flaps), 626 mm (length of top flaps), 64 mm (width of bottom flaps), 78 mm (width of bottom flaps), 638 mm (length of bottom flaps), 80 mm (width of side flaps), 200 mm (length of side flaps), 634 mm (length of side flaps), 80 mm (width of side flaps), 60 mm (width of side flaps), 100 mm (height of side flaps), 60 mm (width of side flaps), 204 mm (height of side flaps), 638 mm (length of side flaps), 30 mm (width of side flaps), 80 mm (width of side flaps), 634 mm (length of side flaps), 65 mm (height of side flaps), 32 mm (width of side flaps), 148 mm (width of side flaps).</p> <p>Logos and text on the drawing include: MICROCHIP, STATIC SENSITIVE, and a triangle symbol. A remark states: <i>*REMARK: All Measurements In Millimeter</i></p>	 <p>Photograph of the STAR inner box, showing the MICROCHIP logo, the text "DO NOT BEND OR JERK THE BOX", "STATIC SENSITIVE", and a triangle symbol.</p> <p>Size 22x3.5 Inch</p>