



Product Change Notification / MFOL-24JWZC544

Date:

27-Jan-2022

Product Category:

Wireless IC

PCN Type:

Manufacturing Change

Notification Subject:

CCB 4918 Final Notice: Qualification of STAR as an additional final test site for selected Micrel MICRF211xxx, MICRF213xxx and MICRF218xxx device families available in 16L QSOP (.150in) package.

Affected CPNs:

[MFOL-24JWZC544_Affected_CPN_01272022.pdf](#)
[MFOL-24JWZC544_Affected_CPN_01272022.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 Micrel MICRF211xxx, MICRF213xxx and MICRF218xxx device families available in 16L QSOP (.150in) package.

Pre and Post Change Summary:

		Pre Change	Post Change	
Final Test Site		Unisem (M) Berhad Perak, Malaysia (UNIS)	Unisem (M) Berhad Perak, Malaysia (UNIS)	Stars Microelectronics (Thailand) Public Company Limited (STAR)
Base Quantity Multiple (BQM)	Tape and Reel	2500	2500	2500
	Tube	98	98	98
PIN 1 Orientation	Tape and Reel	Quadrant 1	Quadrant 1	Quadrant 1
	Tube	See Pre and Post change comparison.		
Carrier Tape		See Pre and Post change comparison.		
Cover Tape		See Pre and Post change comparison.		
Plastic Reel	Color	Dark Blue		Light Blue
	Dimension	See Pre and Post change comparison.		
Tube	Color	Clear	Clear	
	Dimension	See Pre and Post change comparison.		
Packing Method		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 an additional final test site.

Change Implementation Status:In Progress

Estimated First Ship Date:January 28, 2022 (date code: 2205)

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

Time Table Summary:

	January 2022
--	---------------------

Workweek	2	3	4	5	6
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:

January 27, 2022: Issued final notification.

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-24JWZC544_Qual Report.pdf](#)

[PCN_MFOL-24JWZC544_Pre and Post Change 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.

Affected Catalog Part Numbers (CPN)

MICRF218AYQS

MICRF211AYQS

MICRF213AYQS

MICRF211AYQS-TR

MICRF213AYQS-TR

MICRF218AYQS-TR

FINAL CCB# 4918
PCN #: MFOL-24JWZC544



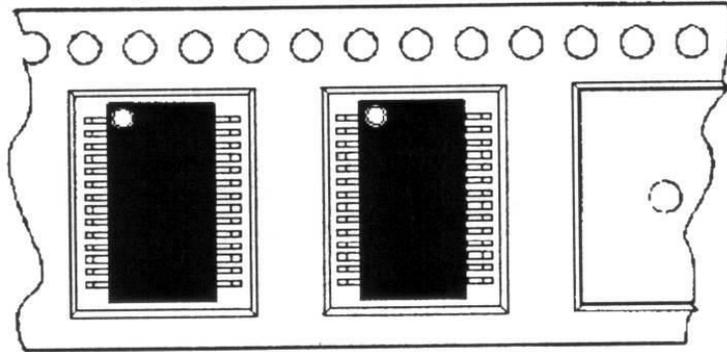
A Leading Provider of Smart, Connected and Secure Embedded Control Solutions



SMART | CONNECTED | SECURE

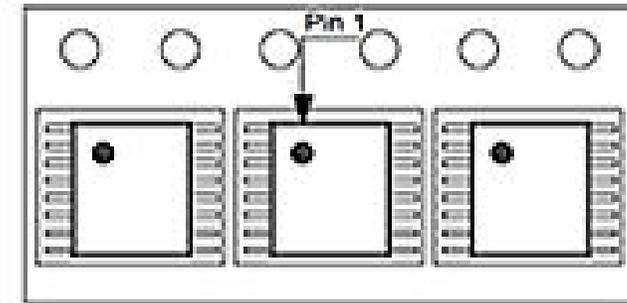
Pre and Post Change Summary – Pin 1 Orientation

UNIS



Quadrant 1

STAR



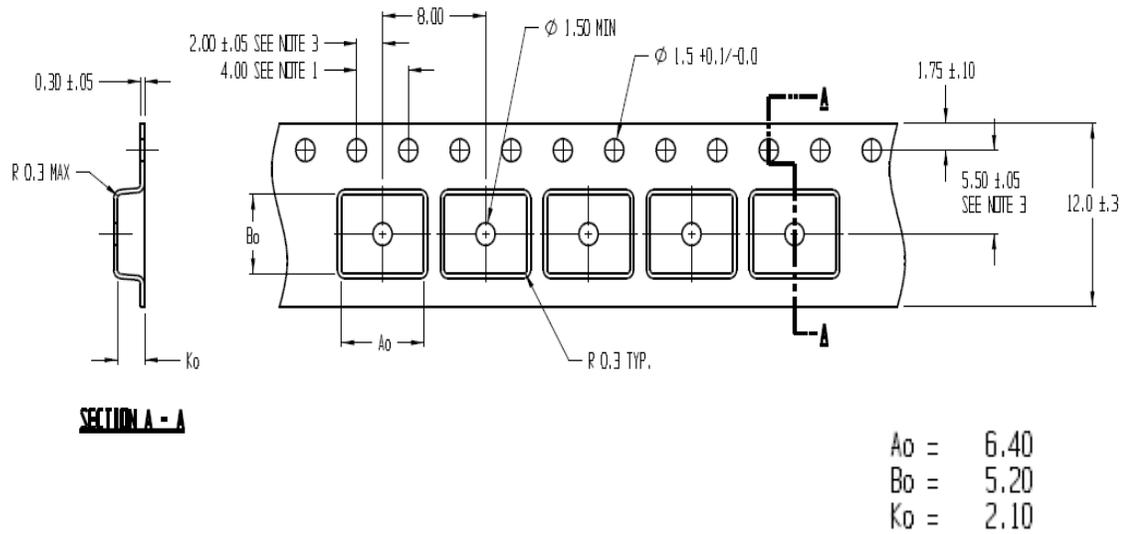
Quadrant 1

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

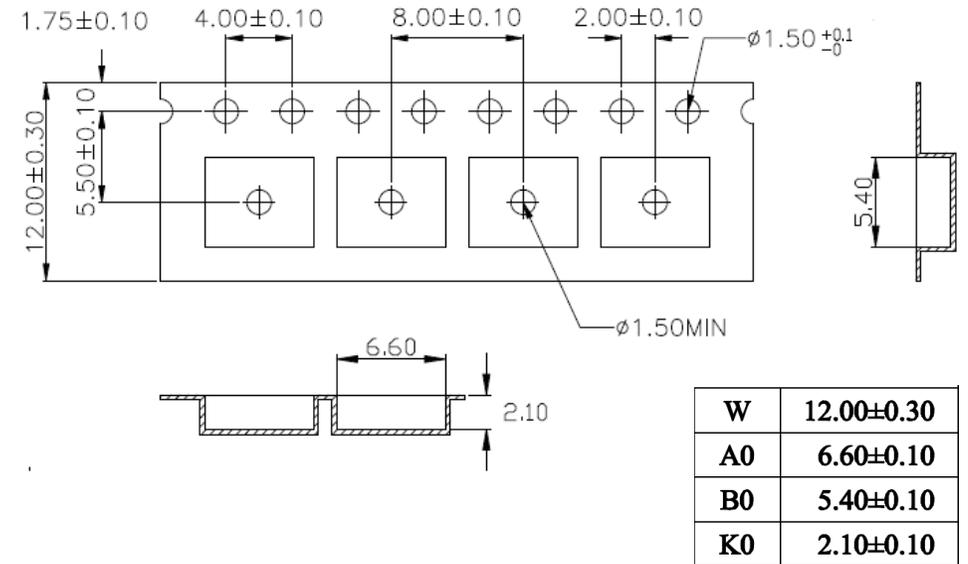
UNIS	STAR
Units per reel: 2500 1 reel per bag	Units per reel: 2500 1 reel per bag

Pre and Post Change Summary - Carrier Tape

UNIS

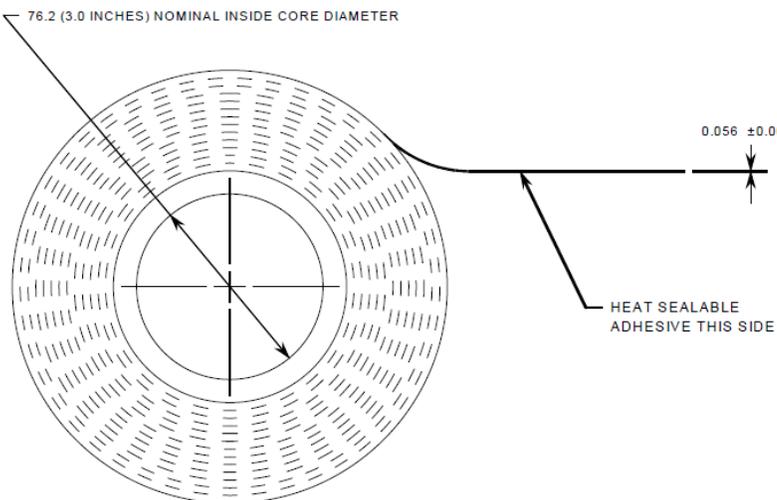
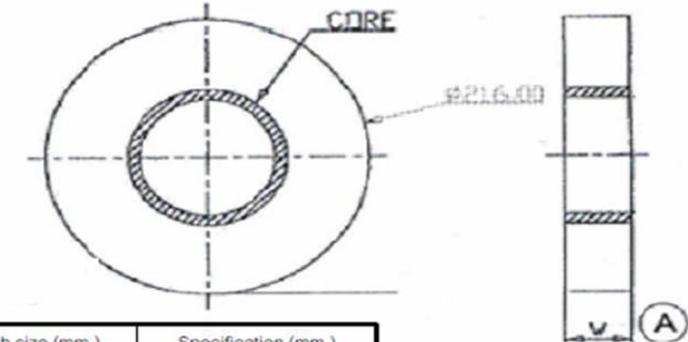


STAR



Plant	W (mm.) ±0.3	P (mm.) ±0.1 or Specific	A ₀ ±0.1 or Specific	B ₀ ±0.1 or Specific	K ₀ ±0.1 or Specific
UNIS	12.00	8	6.40	5.20	2.10
STAR	12.00	8	6.60	5.40	2.10

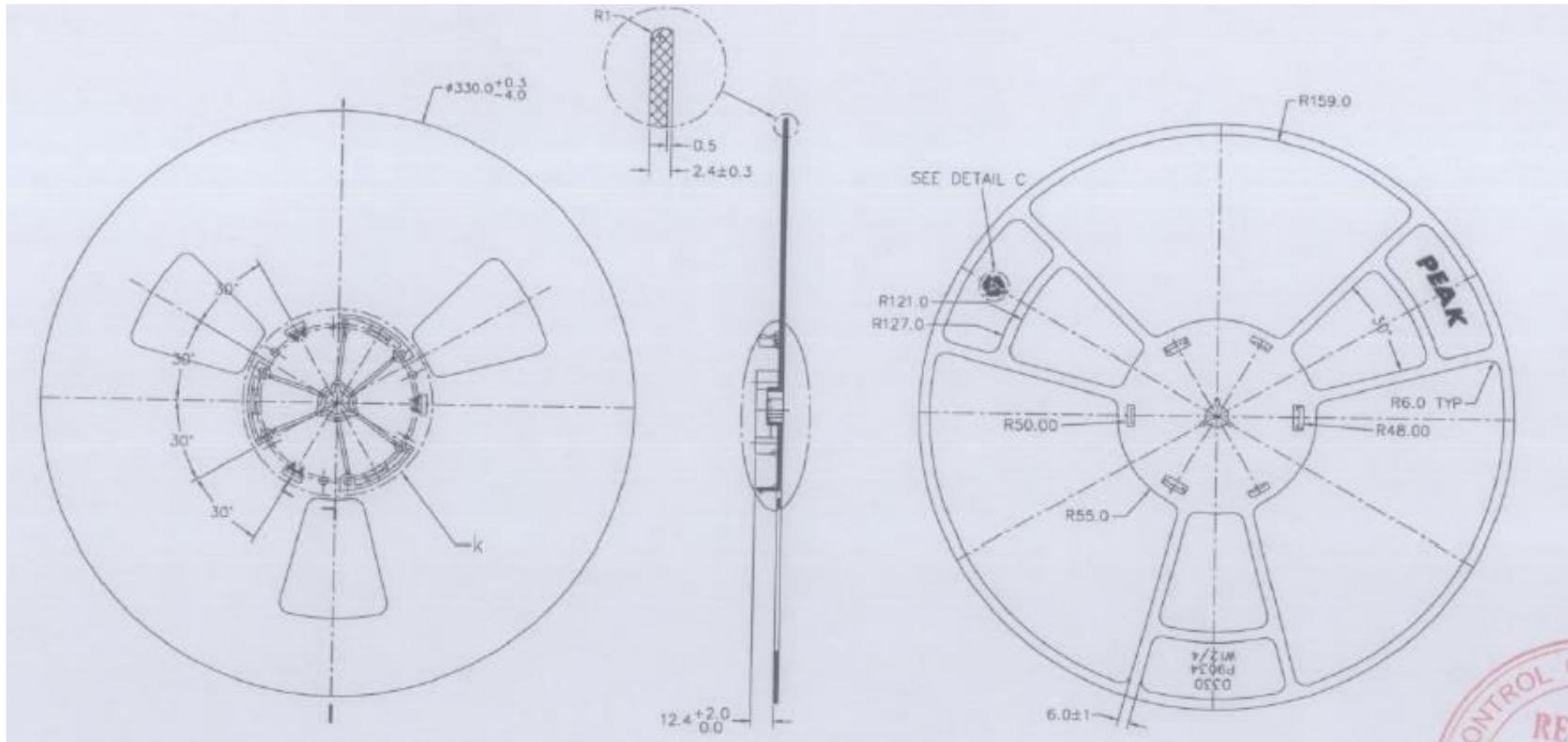
Pre and Post Change Summary - Cover Tape

UNIS	STAR																																																																																							
 <table border="1" style="margin-top: 20px; border-collapse: collapse; width: 100%;"> <thead> <tr> <th>PART NO.</th> <th>WIDTH "W"</th> </tr> </thead> <tbody> <tr><td>AA05305NP</td><td>5.3±0.1mm</td></tr> <tr><td>AA05405NP</td><td>5.4±0.1mm</td></tr> <tr><td>AA09205NP</td><td>9.2±0.1mm</td></tr> <tr><td>AA09505NP</td><td>9.5±0.1mm</td></tr> <tr><td>AA13105NP</td><td>13.1±0.1mm</td></tr> <tr><td>AA13305NP</td><td>13.3±0.1mm</td></tr> <tr><td>AA13405NP</td><td>13.4±0.1mm</td></tr> <tr><td>AA21005NP</td><td>21.0±0.1mm</td></tr> <tr><td>AA21305NP</td><td>21.3±0.1mm</td></tr> <tr><td>AA25505NP</td><td>25.5±0.1mm</td></tr> <tr><td>AA37505NP</td><td>37.5±0.1mm</td></tr> <tr><td>AA49505NP</td><td>49.5±0.1mm</td></tr> <tr><td>AA65505NP</td><td>65.5±0.15mm</td></tr> <tr><td>AA81505NP</td><td>81.5±0.15mm</td></tr> <tr><td>AA97505NP</td><td>97.5±0.20mm</td></tr> <tr><td>AA11355NP</td><td>113.5±0.20mm</td></tr> <tr><td>AA12955NP</td><td>129.5±0.25mm</td></tr> <tr><td>AA14555NP</td><td>145.5±0.25mm</td></tr> <tr><td>AA16155NP</td><td>161.5±0.30mm</td></tr> <tr><td>AA17755NP</td><td>177.5±0.30mm</td></tr> <tr><td>AA19355NP</td><td>193.5±0.30mm</td></tr> </tbody> </table> <p style="margin-top: 20px;">NOTE:</p> <ol style="list-style-type: none"> 1. REEL TO CONTAIN 300 METERS OF SPLICE FREE MATERIAL. 2. MATERIAL: ANTISTATIC POLYESTER FILM. 3. COLOR: TRANSPARENT, PALE BLUE. 4. THESE WIDTHS ARE ALSO AVAILABLE IN 500 METER LENGTHS. 	PART NO.	WIDTH "W"	AA05305NP	5.3±0.1mm	AA05405NP	5.4±0.1mm	AA09205NP	9.2±0.1mm	AA09505NP	9.5±0.1mm	AA13105NP	13.1±0.1mm	AA13305NP	13.3±0.1mm	AA13405NP	13.4±0.1mm	AA21005NP	21.0±0.1mm	AA21305NP	21.3±0.1mm	AA25505NP	25.5±0.1mm	AA37505NP	37.5±0.1mm	AA49505NP	49.5±0.1mm	AA65505NP	65.5±0.15mm	AA81505NP	81.5±0.15mm	AA97505NP	97.5±0.20mm	AA11355NP	113.5±0.20mm	AA12955NP	129.5±0.25mm	AA14555NP	145.5±0.25mm	AA16155NP	161.5±0.30mm	AA17755NP	177.5±0.30mm	AA19355NP	193.5±0.30mm	 <table border="1" style="margin-top: 20px; border-collapse: collapse; width: 100%;"> <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> <table border="1" style="margin-top: 20px; border-collapse: collapse; width: 100%;"> <thead> <tr> <th></th> <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>0.063 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>	Width size (mm.)	Specification (mm.)	5.3	5.2 – 5.4	9.2	9.1 – 9.3	13.3	13.2 – 13.4		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	0.063 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
PART NO.	WIDTH "W"																																																																																							
AA05305NP	5.3±0.1mm																																																																																							
AA05405NP	5.4±0.1mm																																																																																							
AA09205NP	9.2±0.1mm																																																																																							
AA09505NP	9.5±0.1mm																																																																																							
AA13105NP	13.1±0.1mm																																																																																							
AA13305NP	13.3±0.1mm																																																																																							
AA13405NP	13.4±0.1mm																																																																																							
AA21005NP	21.0±0.1mm																																																																																							
AA21305NP	21.3±0.1mm																																																																																							
AA25505NP	25.5±0.1mm																																																																																							
AA37505NP	37.5±0.1mm																																																																																							
AA49505NP	49.5±0.1mm																																																																																							
AA65505NP	65.5±0.15mm																																																																																							
AA81505NP	81.5±0.15mm																																																																																							
AA97505NP	97.5±0.20mm																																																																																							
AA11355NP	113.5±0.20mm																																																																																							
AA12955NP	129.5±0.25mm																																																																																							
AA14555NP	145.5±0.25mm																																																																																							
AA16155NP	161.5±0.30mm																																																																																							
AA17755NP	177.5±0.30mm																																																																																							
AA19355NP	193.5±0.30mm																																																																																							
Width size (mm.)	Specification (mm.)																																																																																							
5.3	5.2 – 5.4																																																																																							
9.2	9.1 – 9.3																																																																																							
13.3	13.2 – 13.4																																																																																							
	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	0.063 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																																																																																				

Plant	Carrier Tape Width	Cover Tape Width	Thickness	Color	Sealing mythology
UNIS	12mm	9.20 +/-0.1mm	0.056+/-0.005	Clear	Heat Sealing
STAR	12mm	9.20 +/-0.3mm	0.050+/-0.005	Clear	Heat Sealing

Pre and Post Change Summary - Plastic Reel

UNIS

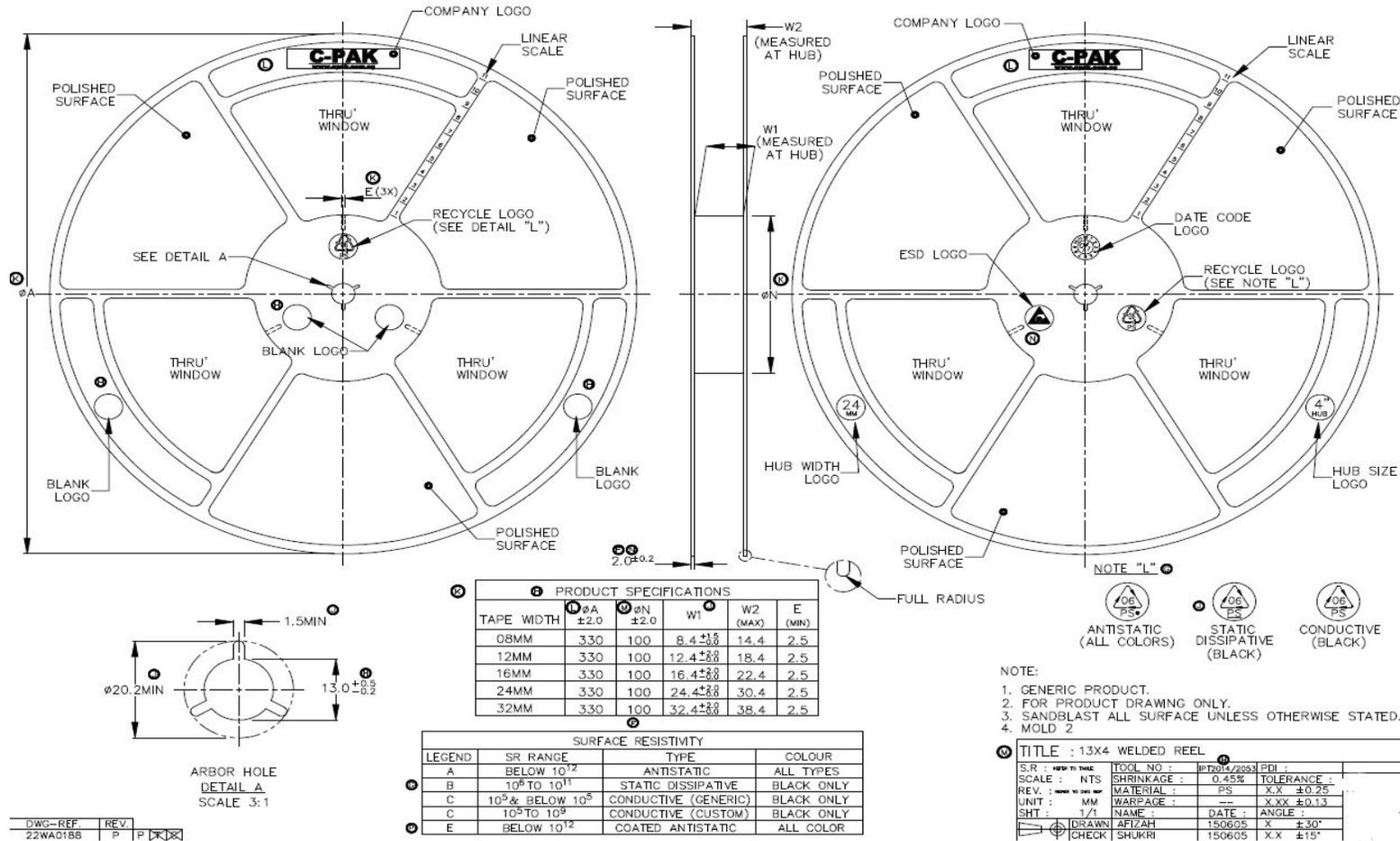


NOTES:

- 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= ± 0.4 , -X.XX= ± 0.20
 7. TOTAL THICKNESS OF REEL: 18.4 MAX
 8. PART NO: P9034

Pre and Post Change Summary - Plastic Reel

STAR



Pre and Post Change Summary – Packing Method

UNIS



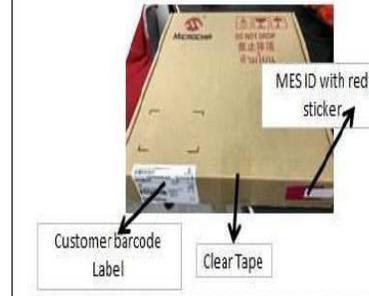
- 1) Peak 13" Blue Reel - D330-P9034-W12/4 (P/N: 47370032)
- 2) Microchip Barcode label (P/N: 50320185)
- 3) 12mm Protective band (P/N: 47560001)



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



- 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.



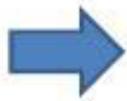
- 1) Microchip Box = M02-009 Brown-Pizza-13" (P/N: 50080187)
 - 2) Microchip Standard Barcode Label (P/N:50320185) at left side of box opening
 - 3) Red sticker with MES ID at right side of box opening
 - 4) Seal box opening with clear tape at the middle
- (Note: Remove red sticker with MES ID before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

Pre and Post Change Summary – Packing Method

STAR



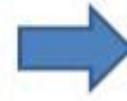
Packing in Reel 13 Inch



Insert Reel in static shielding bag



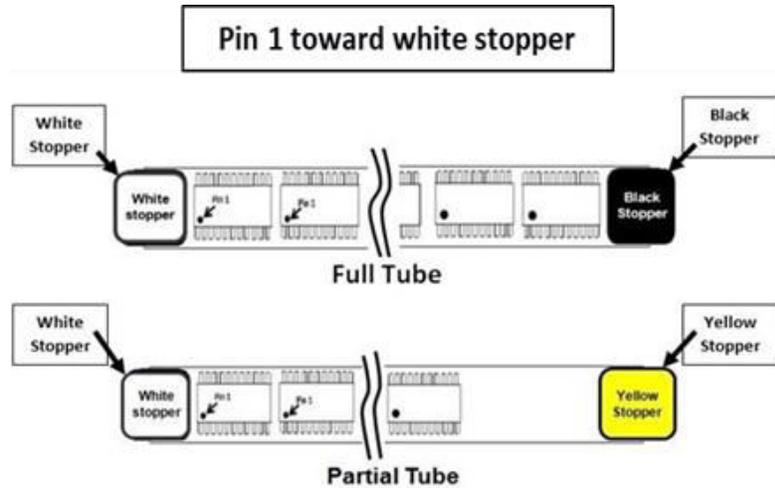
Packing in box



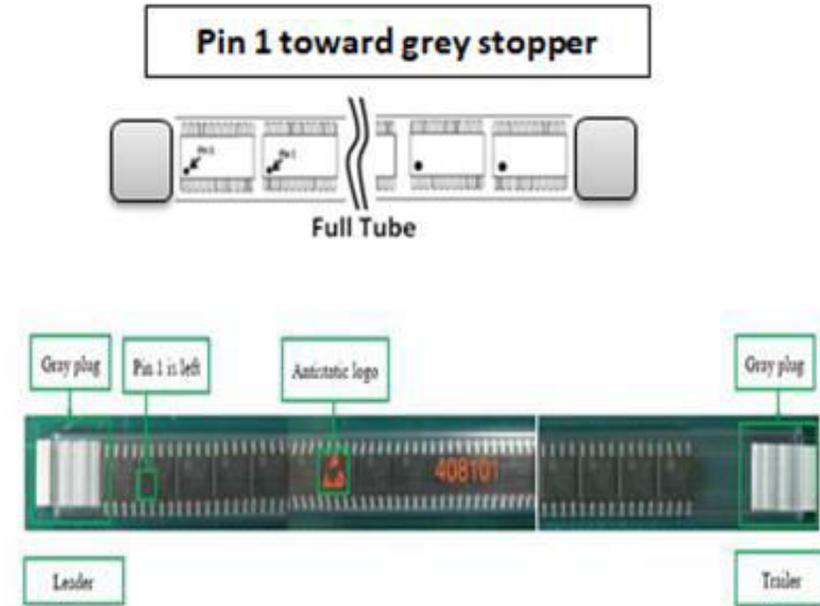
Put label

Pre and Post Change Summary – Tube (Pin1 Orientation)

UNIS



STAR

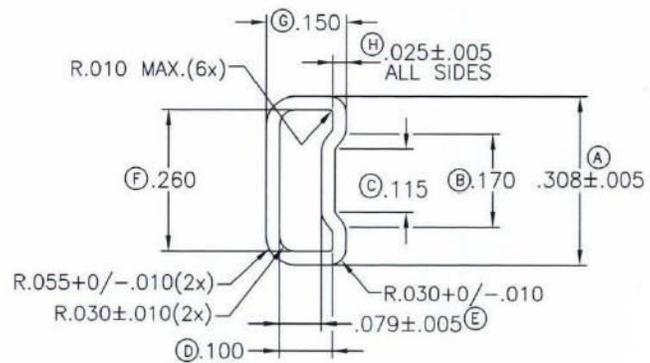
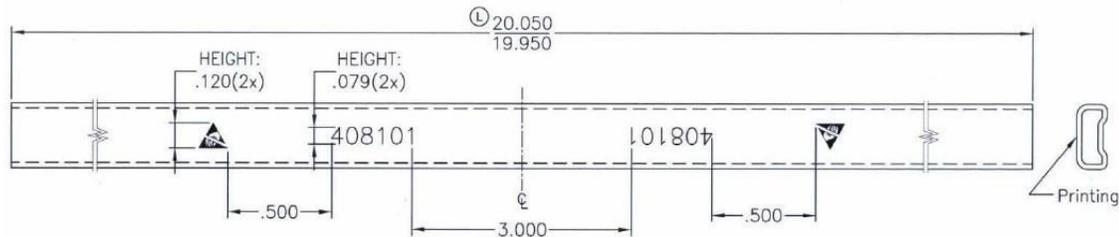


Pre and Post Change Summary – Tube Base Quantity Multiple (BQM) per tube

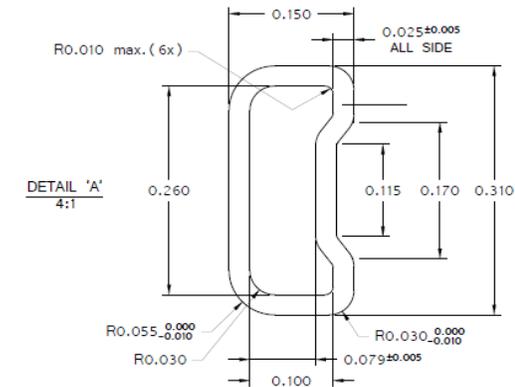
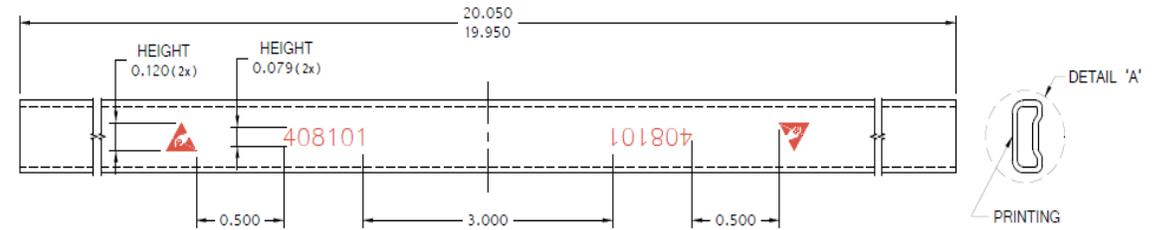
UNIS	STAR
Units per tube: 98	Units per tube: 98

Pre and Post Change Summary – Packing Tube dimension

UNIS



STAR



Plant	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

<p>OSOP Clear Tube (P/N: 408101/47220001)</p> <p>Full Tube: White Stopper, Black Stopper</p> <p>Partial Tube: White Stopper, Yellow Stopper</p>	<p>1) 1 Tube = Max 98 units 2) Tube = ITW SOICN Clear (P/N: 47220001) 3) End plug</p> <p>Full tube: - White (P/N: 47260090) - Black (P/N: 47260012) Partial Tube: - White (P/N: 47260090) - Yellow (FT00063)</p> <p>Note: Pin 1 menghalo ke White Pin</p>
<p>Meratakan sebelum balut bubble bag</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</p> <p>Note: Meratakan tube sebelum balut bubble bag.</p>

<p>Customer Barcode Label</p> <p>ESD Logo</p> <p>ESD adhesive tape</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>Clear Tape</p> <p>Tamper Proof Seal</p> <p>MES ID with red sticker</p> <p>Customer Barcode Label</p> <p>DON'T</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</p> <p>(Note: Remove MES ID with red sticker before ship to customer)</p>

Pre and Post Change Summary – Tube Packing Method

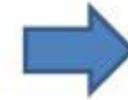
STAR



Packing units in tube



Insert Tube in ESD bag

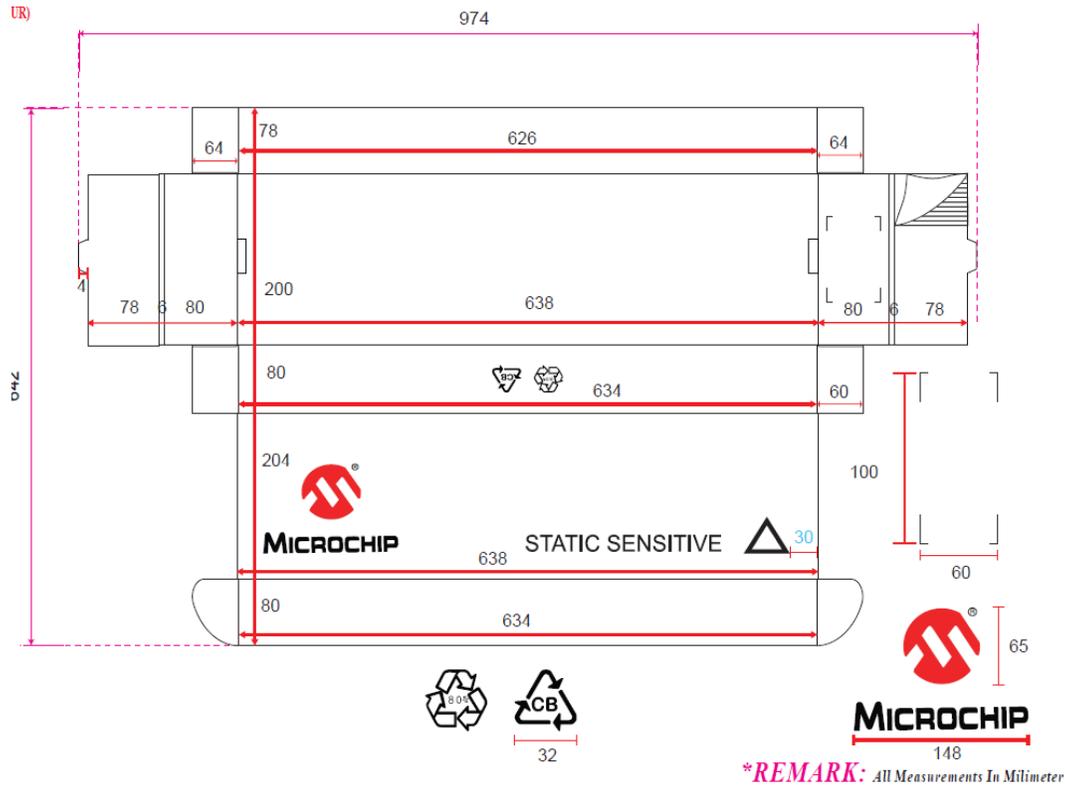


Insert bag in inner box

Pre and Post Change Summary – Inner Box Size

UNIS

STAR



Size 22x3.5 Inch





MICROCHIP

**QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY**

PCN #: MFOL-24JWZC544

**Date:
December 11, 2021**

**Qualification of STAR as an additional final test site for
selected Micrel MICRF211xxx, MICRF213xxx and
MICRF218xxx, device families available in 16L QSOP
(.150in) package.**



MICROCHIP
PACKAGE QUALIFICATION REPORT

Purpose **Qualification of STAR as an additional final test site for selected Micrel MICRF211xxx, MICRF213xxx and MICRF218xxx, device families available in 16L QSOP (.150in) package.**

CCB No. 4918

Test / Evaluation	Test Condition / Parameters	RESULT
Original Final Test Site Correlation	Run 3,000 devices to the test flows at the original site.	Passed - 100% For the Yield and Bin correlation
Destination FT Site Correlation	Send 3,000 tested parts to the destination test site.	Passed - 100% For the Yield and Bin correlation
Parametric comparison	Using 33 units from the 3K sample, compare all parametric test deltas.	Passed