

# ALPHA<sup>®</sup> EXACTALLOY<sup>®</sup> PREFORMS

Tape and Reel Packaging; Rectangles - Use with Solder Paste

## DESCRIPTION

**ALPHA Exactalloy Preforms** in tape and reel packaging provide an easy to implement method for controlling or increasing solder volume. Tape and reel preforms are specifically targeted at electronic assembly applications. These solder rectangles do not contain flux but rely on flux paste dispensed during the assembly process; or in the case of PCB assembly rely on flux present in solder paste to support reflow. Solder rectangles in tape and reel packaging are placed with standard pick and place equipment. The wide selection of sizes provides maximum flexibility and cost effectiveness, since a single preform can usually be chosen to provide exactly the solder volume needed.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

## FEATURES & BENEFITS

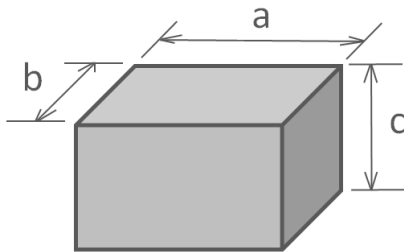
### Features

- Rectangles available in chip capacitor sizes including: 0603, 0402, 0201 and many others
- Do not contain flux, but rely on the flux from solder paste or paste flux for reflow
- Wide alloy flexibility, including common lead free and lead containing alloys used in PCB assembly
- Fast placement utilizing standard equipment
- IEC 60286 Tape and Reel Packaging
- Low Temperature Alloy – Sn42Bi57.6Ag0.4

### Benefits

- Precisely defines solder volume
- Ideal for pin in hole applications – and the elimination of wave soldering
- Reduces flux residues and solder spatter by reducing flux-solder ratio of standard solder paste
- Eliminate the use of step stencils
- Compatible with standard library pick and place routines
- Compatible with standard nozzle sizes
- Preforms available in all standard solder paste alloys

## PRODUCT INFORMATION


**Legend**

a = length  
b = width  
c = thickness

S = Symmetrical  
H = "Half-height"  
B = Customized

| Tolerance (mm)  | a      | b      | c      | x |
|-----------------|--------|--------|--------|---|
| Regular         | ± 0.05 | ± 0.05 | ± 10%  |   |
| Symmetrical (S) | ± 0.03 | ± 0.01 | ± 0.01 |   |
| Customized (B)  | ± 0.03 | ± 0.03 | ± 0.03 |   |

| Size          |       | Dimensions |      |      | Volume          | Dimensions |    |    | Volume           | Pb-Free | Sn-Pb | SnBiAg |
|---------------|-------|------------|------|------|-----------------|------------|----|----|------------------|---------|-------|--------|
|               |       | a          | b    | c    |                 | a          | b  | c  |                  |         |       |        |
| inch          | mm    | mm         |      |      | mm <sup>3</sup> | mil        |    |    | mil <sup>3</sup> |         |       |        |
| <b>0201</b>   | 0503  | 0.47       | 0.28 | 0.28 | 0.037           | 19         | 11 | 11 | 2,249            | ✓       | ✓     | ✓      |
| <b>0202</b>   | 0505  | 0.51       | 0.51 | 0.25 | 0.065           | 20         | 20 | 10 | 3,968            | ✓       | ✓     |        |
| <b>03015S</b> | 06035 | 0.60       | 0.35 | 0.35 | 0.074           | 24         | 14 | 14 | 4,485            | ✓       |       |        |
| <b>0402H</b>  | 1006H | 1.00       | 0.60 | 0.25 | 0.125           | 39         | 24 | 10 | 9,154            | ✓       | ✓     | ✓      |
| <b>0402</b>   | 1005  | 1.00       | 0.50 | 0.50 | 0.250           | 39         | 20 | 20 | 15,256           | ✓       | ✓     | ✓      |
| <b>0402B</b>  | 10055 | 1.00       | 0.55 | 0.55 | 0.303           | 39         | 22 | 22 | 18,460           | ✓       | *     | *      |
| <b>0603H</b>  | 1608H | 1.60       | 0.80 | 0.50 | 0.640           | 63         | 31 | 20 | 39,055           | ✓       | ✓     | ✓      |
| <b>0603</b>   | 1608  | 1.60       | 0.80 | 0.80 | 1.024           | 63         | 31 | 31 | 62,488           | ✓       | ✓     | ✓      |
| <b>0805H</b>  | 2013H | 2.01       | 1.30 | 0.40 | 1.045           | 79         | 51 | 16 | 63,782           | ✓       | ✓     | ✓      |
| <b>0805</b>   | 2013  | 2.01       | 1.30 | 0.76 | 1.986           | 79         | 51 | 30 | 121,186          | ✓       | ✓     | ✓      |
| <b>0805S</b>  | 2013S | 2.01       | 1.30 | 1.30 | 3.397           | 79         | 51 | 51 | 207,292          | ✓       | ✓     | *      |
| <b>1406</b>   | 3515  | 3.56       | 1.52 | 0.77 | 4.167           | 140        | 60 | 30 | 254,263          | ✓       | ✓     | *      |

\* Production will depend on market demand, please check with your local sales representative for availability.

**APPLICATION GUIDELINES**

ALPHA Exactalloy Tape and Reel Preforms Rectangles, when placed in solder paste or paste flux, precisely control solder volume. They can be used in a variety of electronic assembly applications including, increasing solder volume on both PCB pads and plated through holes. Only a portion of the preform needs to be in contact with the solder paste, providing significant implementation flexibility. Lead free preforms should contact the solder paste with at least 25% of the preform. Lead containing parts should contact the solder paste with at least 10% of the preform.

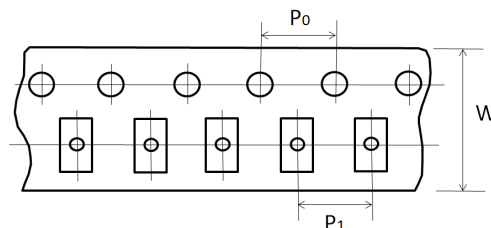
As a quick reference, the preform can be up to **4 times** the volume of the solder paste without diluting the flux excessively in AIR reflow or a stretch up to **10 times** under N2 reflow environment.

**TECHNICAL DATA**

| Standard    | Alloy Designation |                          | Melting or Solidus / Liquidus Temp °C |
|-------------|-------------------|--------------------------|---------------------------------------|
| J-STD-006B  | Pb-free           | SAC305 / 387 / 357 / 405 | 217 to 221                            |
|             | Low-temp          | Sn42Bi57.6Ag0.4          | 138 / 139                             |
|             | High-Reliability  | Innotot                  | 206 to 218                            |
|             | Sn-Pb             | Sn63Pb37 / Sn62Pb36Ag2   | 179 to 183                            |
| Proprietary | Low Silver        | SACX Plus 0307           | 217 to 228                            |

\* Also available in other or special alloys on request.

| Packaging (IEC-60286-x) |    |          |     |
|-------------------------|----|----------|-----|
| Carrier Tape Width      |    | 8mm      |     |
| Pitch                   | P0 |          | 4mm |
|                         | P1 | ≤ 0402   | 2mm |
|                         |    | ≥ 0402   | 4mm |
| Reel Size               |    | 7" & 13" |     |



**SAFETY & WARNING**

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available at AlphaAssembly.com**

**STORAGE**

The parts are packaged in ESD safe reels. When properly stored (ambient temperatures and dry), the warranty period is 2 years.

**CONTACT INFORMATION**

**To confirm this document is the most recent version, please contact  
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www.macdermidalpha.com**

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|--|---|---|
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|--|---|---|

Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE . Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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