

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

Tape and Reel Packaging; Rectangles-Use with Solder Paste

Automotive

## DESCRIPTION

Preforms can also be used as a means of eliminating wave soldering. For example, in most automotive electronics assembly wave solder exists solely to solder connectors onto the PCB, as the rest of the assembly is now produced with the SMT reflow process. Concerns about achieving acceptable holefill prevent the user from eliminating this extra soldering stage, even though wave is often the cause of most defects and reliability hazards. Most connectors are now available as reflow capable, which enables the reflow soldering of these devices, thus eliminating wave soldering. 100% hole fill is routinely achieved with a wide variety of pin and hole ratios, even for thick PCBs, by the use of "Tape and Reel" delivered Preforms. These Preforms complement the printed solder paste to provide adequate and predictable solder volume for reliable through-hole connector attach in Automotive Electronics.

## FEATURES & BENEFITS

### Features

- ✓ Rectangles 1406, 1206, 0805, 0603, 0402, 03015, 0202, 0201 sizes, as well as many others, for use with solder paste
- ✓ Do not contain flux, but rely on the flux in solder paste for reflow
- ✓ Wide alloy flexibility, including common lead free and lead containing alloys used in PCB assembly
- ✓ Half height devices available – 0402H, 0603H & 0805H – ideal for placement under low standoff connectors
- ✓ Fast placement utilizing standard equipment
- ✓ 7" and 13" standard IEC reels available
- NEW Low Temperature Alloy – Sn42Bi57.6Ag0.4

### Benefits

- ✓ Accelerates time to market by solving solder insufficiency issues without PCB layout changes
- ✓ Precisely increase solder volume in paste applications
- ✓ Ideal for pin in hole applications – and the elimination of wave soldering
- ✓ Reduces flux residues by reducing flux-solder ratio of standard solder paste
- ✓ Reduces flux spattering and mid chip solder balls by eliminating the need for overprinting 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

## APPLICATION

ALPHA Exactalloy Tape and Reel Preforms, when placed in solder paste, precisely increase solder volume. 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.

**For applications that require a large preform inserted into a small paste deposit, use Ultra-Core™ flux core preforms. Please contact your Alpha representative for more information about flux core preforms. A separate Technical Bulletin is available.**

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an Alent plc Company

ALPHA Global Headquarters  
300 Atrium Drive, Somerset, NJ 08873 USA • 1-800-367-5460 • www.alpha.alent.com

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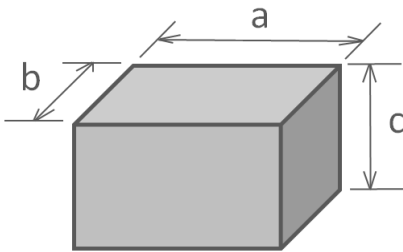
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## SAFETY

Consult the MSDS for additional safety information, and for toxicity data on alloys containing lead and silver.

## PRODUCT INFORMATION



### Legend

a = length

b = width

c = thickness

S = Symmetrical

H = "Half-height"

B = Customized

### Tolerance (mm)

Regular

Symmetrical (S)

	a	b	c
Regular	± 0.05	± 0.05	± 10%
Symmetrical (S)	± 0.03	± 0.01	± 0.01

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>			
0201S	0403	0.44	0.28	0.28	0.034	17	11	11	2,105	✓		
0202	0505	0.51	0.51	0.25	0.065	20	20	10	3,968	✓	✓	
03015S	06035	0.60	0.35	0.35	0.074	24	14	14	4,485	✓		
0402H	1006	1.00	0.60	0.25	0.150	39	24	10	9,154	✓	✓	*
0402	1005	1.00	0.50	0.50	0.250	39	20	20	15,256	✓	✓	✓
0402B	10055	1.00	0.55	0.55	0.303	39	22	22	18,460	✓	✓	*
0603H	1608H	1.60	0.80	0.50	0.640	63	31	20	39,055	✓	✓	*
0603	1608	1.60	0.80	0.80	1.024	63	31	31	62,488	✓	✓	✓
0805H	2013H	2.01	1.30	0.40	1.045	79	51	16	63,782	✓	✓	*
0805	2013	2.01	1.30	0.76	1.986	79	51	30	121,186	✓	✓	✓
0805S	2013S	2.01	1.30	1.30	3.397	79	51	51	207,292	✓	✓	*
1206	3015	3.00	1.47	0.77	3.396	118	58	30	207,218	✓	✓	*
1406	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

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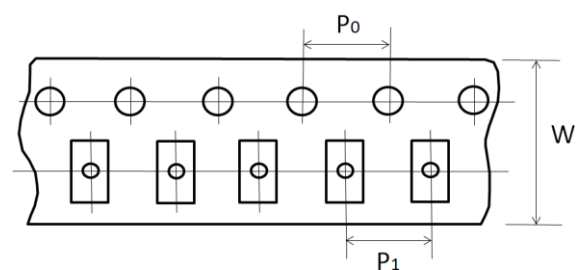
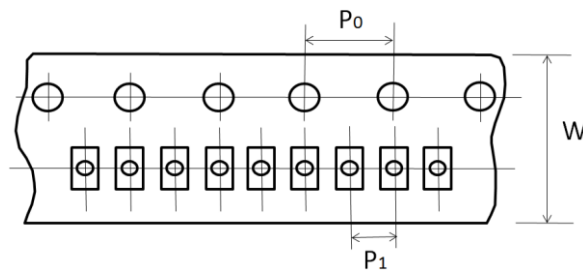
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## TECHNICAL DATA

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

Packaging			
Carrier Tape Width		8mm	
Pitch	P0		4mm
	P1	≤ 0402	2mm
		≥ 0402	4mm
Reel Size			7" & 13"



## PACKAGING & STORAGE

The parts are packaged in ESD safe reels. When properly stored (ambient Temperatures and dry) a shelf life of 1 year is guaranteed.



Ihr Vertriebspartner/ Votre représentant:

Hilpert electronics AG  
Täfernstrasse 29  
5405 Baden-Dättwil  
Schweiz / Suisse

Tel: +41 56 483 25 25  
Fax: +41 56 483 25 20  
Mail: office@hilpert.ch  
Web: www.hilpert.ch