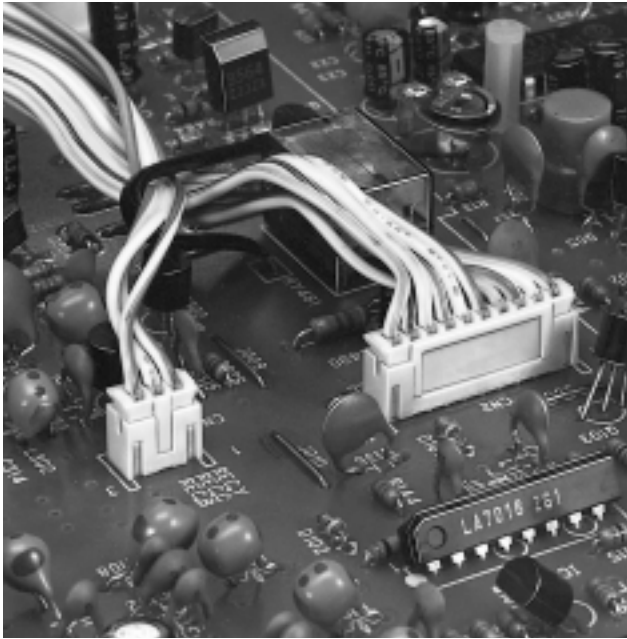
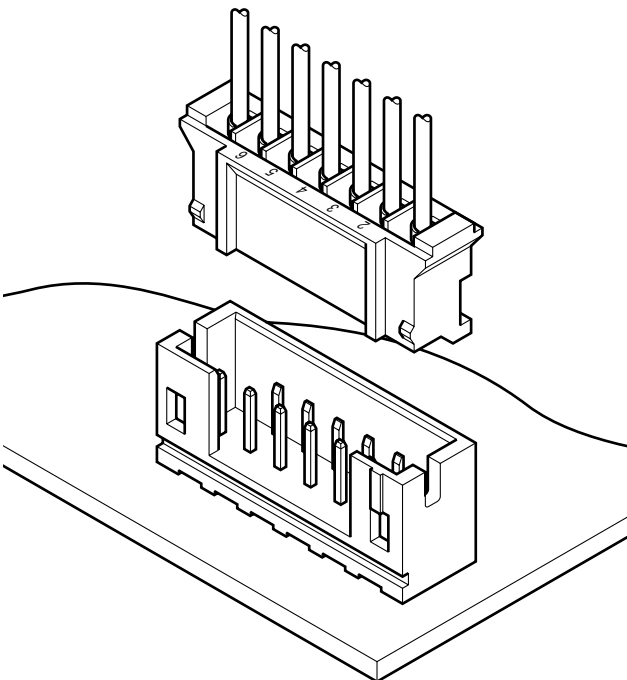


# PH CONNECTOR

Disconnectable Crimp style connectors



**This is a thin, low-profile 2.0mm (.079") pitch connector 7.5mm (.295") in height after mounting and 4.5mm (.177") in width. It is designed to meet the demand for high-density connection of internal wires to printed circuit boards. It is compact, highly reliable and low in cost.**



## Features

### • **Reliable contact**

The contact has long dimples near the center to ensure a good connection at all times, even under conditions of vibration and mechanical abuse, and when used with low voltage and low current circuits.

### • **Easy and effective crimping**

Although the contact is compact, it has a long wire strip holding length of 2.6 +/- 0.4mm (.102" +/- .016"). This long length simplifies automatic crimping and the crimping of shielded wires.

### • **Fully shrouded header**

The fully shrouded header has walls on all four sides to prevent improper connection to the mating housing and to prevent the instruction of flux and other contaminants.

### • **High solderable square post**

The square post is copper-undercoated and tin/lead-plated for superior solderability and for whisker prevention.

### • **Printed circuit board retention mechanism**

The solder side of the header has a retention mechanism that prevents it from floating during soldering. As a result, the header can be positioned accurately.

### • **Compatible with the KR insulation displacement connector**

The same shrouded header can be used for either PH crimp-style connector or KR insulation displacement connector. This allows both types of connector to be used interchangeably without replacing the header.

### • **Surface mount model (SMT)**

This connector is also available in a surface mount configuration. Its housing is made of heat resistant resin so that it is not adversely affected during reflow soldering. Because of its tiny size and ability to be surface mounted, this connector meets the demand for high-density mounting of components inside electronic products.

## Specifications

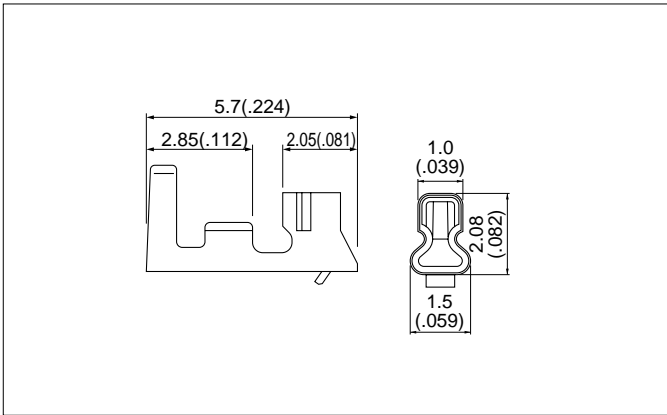
- Current rating: 2A AC, DC (AWG #24)
  - Voltage rating: 100V AC, DC
  - Temperature range: -25°C to +85°C  
(including temperature rise in applying electrical current)
  - Contact resistance: Initial value/10m Ω max.  
After environmental testing/20m Ω max.
  - Insulation resistance: 1,000M Ω min.
  - Withstanding voltage: 800V AC/minute
  - Applicable wire: AWG #32 to #24
  - Applicable PC board thickness: 0.8 to 1.6mm(.031" to .063")
- \* Contact JST for details

## Standards

- Recognized E60389
- 1 Certified LR20812
- 2 R75087

# PH CONNECTOR

## Contact



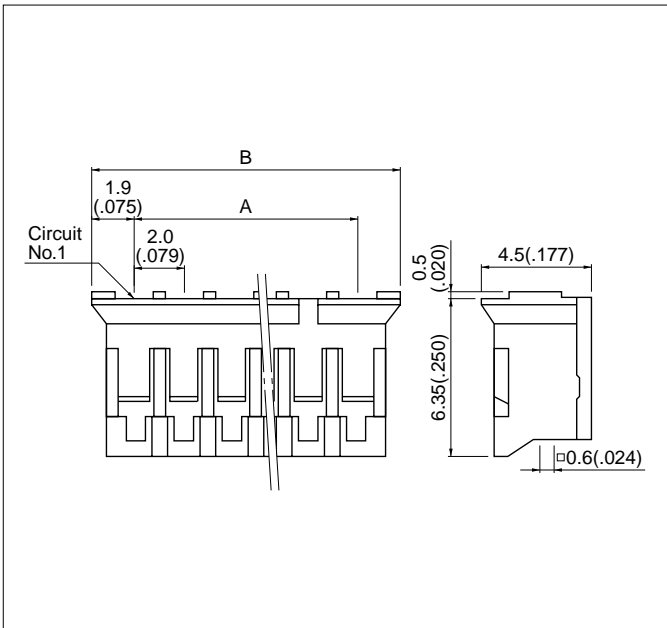
| Model No.             | Applicable wire |          |                          | Q'ty / reel |
|-----------------------|-----------------|----------|--------------------------|-------------|
|                       | mm <sup>2</sup> | AWG #    | Insulation O.D. mm(in.)  |             |
| <b>SPH-002T-P0.5S</b> | 0.05 to 0.22    | 30 to 24 | 0.9 to 1.5(.035 to .059) | 8,000       |
| <b>SPH-004T-P0.5S</b> | 0.032 to 0.08   | 32 to 28 | 0.5 to 0.9(.020 to .035) | 10,000      |

### Material and Finish

Phosphor bronze, tin-plated

- Note: 1. When using AWG#32 or #30 wires, reflow-treated headers (Low insertion force type, Model no. B#B-PH-KL or S#B-PH-KL) are recommendable.  
2. Contact JST for gold-plated contacts.

## Housing



| Circuits | Model No.     | Dimensions mm(in.) |             | Q'ty / box |
|----------|---------------|--------------------|-------------|------------|
|          |               | A                  | B           |            |
| 2        | <b>PHR- 2</b> | 2.0( .079)         | 5.8( .228)  | 1,000      |
| 3        | <b>PHR- 3</b> | 4.0( .157)         | 7.8( .307)  | 1,000      |
| 4        | <b>PHR- 4</b> | 6.0( .236)         | 9.8( .386)  | 1,000      |
| 5        | <b>PHR- 5</b> | 8.0( .315)         | 11.8( .465) | 1,000      |
| 6        | <b>PHR- 6</b> | 10.0( .394)        | 13.8( .543) | 1,000      |
| 7        | <b>PHR- 7</b> | 12.0( .472)        | 15.8( .622) | 1,000      |
| 8        | <b>PHR- 8</b> | 14.0( .551)        | 17.8( .701) | 1,000      |
| 9        | <b>PHR- 9</b> | 16.0( .630)        | 19.8( .780) | 1,000      |
| 10       | <b>PHR-10</b> | 18.0( .709)        | 21.8( .858) | 1,000      |
| 11       | <b>PHR-11</b> | 20.0( .787)        | 23.8( .937) | 1,000      |
| 12       | <b>PHR-12</b> | 22.0( .866)        | 25.8(1.016) | 1,000      |
| 13       | <b>PHR-13</b> | 24.0( .945)        | 27.8(1.094) | 1,000      |
| 14       | <b>PHR-14</b> | 26.0(1.024)        | 29.8(1.173) | 1,000      |
| 15       | <b>PHR-15</b> | 28.0(1.102)        | 31.8(1.252) | 1,000      |
| 16       | <b>PHR-16</b> | 30.0(1.181)        | 33.8(1.331) | 1,000      |

### Material and Finish

Nylon 66, UL94V-0, natural (white)

<For reference> As the color identification, the following alphabet shall be put in the underlined part.  
For availability, delivery and minimum order quantity, contact JST.

ex. **PHR-2-oo**

(blank)...natural (white)

BK...black R...red TR...tomato red BL...blue Y...yellow

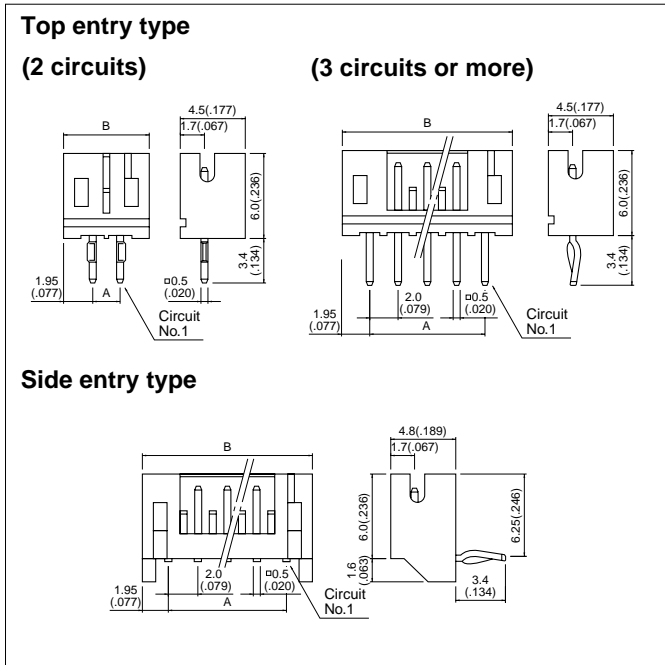
L...lemon yellow M...green D...orange N...brown

P...purple PK...pink H...gray LE...light blue

FY...vivid yellow

## Through-hole type shrouded header

The shrouded headers are interchangeable with those of the KR, KRD and CR insulation displacement connectors.



| Circuits | Model No.          |                    | Dimensions mm(in.) |              | Qty / box      |                 |
|----------|--------------------|--------------------|--------------------|--------------|----------------|-----------------|
|          | Top entry type     | Side entry type    | A                  | B            | Top entry type | Side entry type |
| 2        | <b>B 2B-PH-K-S</b> | <b>S 2B-PH-K-S</b> | 2.0 (.079)         | 5.9 (.232)   | 1,000          | 1,000           |
| 3        | <b>B 3B-PH-K-S</b> | <b>S 3B-PH-K-S</b> | 4.0 (.157)         | 7.9 (.311)   | 1,000          | 1,000           |
| 4        | <b>B 4B-PH-K-S</b> | <b>S 4B-PH-K-S</b> | 6.0 (.236)         | 9.9 (.390)   | 1,000          | 500             |
| 5        | <b>B 5B-PH-K-S</b> | <b>S 5B-PH-K-S</b> | 8.0 (.315)         | 11.9 (.469)  | 1,000          | 500             |
| 6        | <b>B 6B-PH-K-S</b> | <b>S 6B-PH-K-S</b> | 10.0 (.394)        | 13.9 (.547)  | 1,000          | 500             |
| 7        | <b>B 7B-PH-K-S</b> | <b>S 7B-PH-K-S</b> | 12.0 (.472)        | 15.9 (.626)  | 500            | 500             |
| 8        | <b>B 8B-PH-K-S</b> | <b>S 8B-PH-K-S</b> | 14.0 (.551)        | 17.9 (.705)  | 500            | 250             |
| 9        | <b>B 9B-PH-K-S</b> | <b>S 9B-PH-K-S</b> | 16.0 (.630)        | 19.9 (.783)  | 500            | 250             |
| 10       | <b>B10B-PH-K-S</b> | <b>S10B-PH-K-S</b> | 18.0 (.709)        | 21.9 (.862)  | 500            | 250             |
| 11       | <b>B11B-PH-K-S</b> | <b>S11B-PH-K-S</b> | 20.0 (.787)        | 23.9 (.941)  | 500            | 250             |
| 12       | <b>B12B-PH-K-S</b> | <b>S12B-PH-K-S</b> | 22.0 (.866)        | 25.9 (1.020) | 500            | 250             |
| 13       | <b>B13B-PH-K-S</b> | <b>S13B-PH-K-S</b> | 24.0 (.945)        | 27.9 (1.098) | 250            | 250             |
| 14       | <b>B14B-PH-K-S</b> | <b>S14B-PH-K-S</b> | 26.0 (1.024)       | 29.9 (1.177) | 250            | 250             |
| 15       | <b>B15B-PH-K-S</b> | <b>S15B-PH-K-S</b> | 28.0 (1.102)       | 31.9 (1.256) | 250            | 200             |
| 16       | <b>B16B-PH-K-S</b> | <b>S16B-PH-K-S</b> | 30.0 (1.181)       | 33.9 (1.335) | 250            | 200             |

### Material and Finish

Post: Brass, copper-undercoated, tin/lead-plated  
Wafer: Nylon 66, UL94V-0, natural (white)

<For reference> As the color identification, the following alphabet shall be put in the underlined part. For availability, delivery and minimum order quantity, contact JST.

ex. **B2B-PH-K-oo**

S...natural (white)

BK...black R...red TR...tomato red

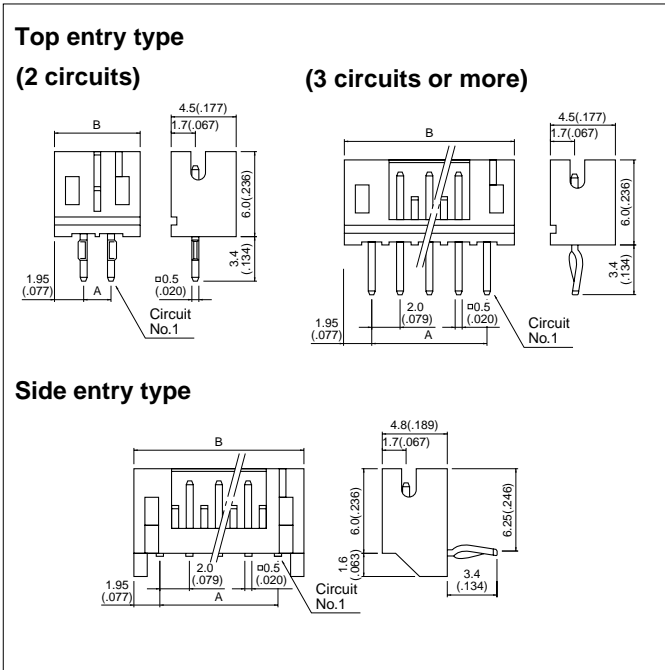
E...blue Y...yellow L...lemon yellow M...green

D...orange N...brown P...purple PK...pink H...gray

LE...light blue FY...vivid yellow (blank)...ivory

# PH CONNECTOR

## Through-hole type shrouded header <Low insertion force type>



| Circuits | Model No.         |                   | Dimensions mm(in.) |              | Q'ty / box     |                 |
|----------|-------------------|-------------------|--------------------|--------------|----------------|-----------------|
|          | Top entry type    | Side entry type   | A                  | B            | Top entry type | Side entry type |
| 2        | <b>B 2B-PH-KL</b> | <b>S 2B-PH-KL</b> | 2.0 (.079)         | 5.9 (.232)   | 1,000          | 1,000           |
| 3        | <b>B 3B-PH-KL</b> | <b>S 3B-PH-KL</b> | 4.0 (.157)         | 7.9 (.311)   | 1,000          | 1,000           |
| 4        | <b>B 4B-PH-KL</b> | <b>S 4B-PH-KL</b> | 6.0 (.236)         | 9.9 (.390)   | 1,000          | 500             |
| 5        | <b>B 5B-PH-KL</b> | <b>S 5B-PH-KL</b> | 8.0 (.315)         | 11.9 (.469)  | 1,000          | 500             |
| 6        | <b>B 6B-PH-KL</b> | <b>S 6B-PH-KL</b> | 10.0 (.394)        | 13.9 (.547)  | 1,000          | 500             |
| 7        | <b>B 7B-PH-KL</b> | <b>S 7B-PH-KL</b> | 12.0 (.472)        | 15.9 (.626)  | 500            | 500             |
| 8        | <b>B 8B-PH-KL</b> | <b>S 8B-PH-KL</b> | 14.0 (.551)        | 17.9 (.705)  | 500            | 250             |
| 9        | <b>B 9B-PH-KL</b> | <b>S 9B-PH-KL</b> | 16.0 (.630)        | 19.9 (.783)  | 500            | 250             |
| 10       | <b>B10B-PH-KL</b> | <b>S10B-PH-KL</b> | 18.0 (.709)        | 21.9 (.862)  | 500            | 250             |
| 11       | <b>B11B-PH-KL</b> | <b>S11B-PH-KL</b> | 20.0 (.787)        | 23.9 (.941)  | 500            | 250             |
| 12       | <b>B12B-PH-KL</b> | <b>S12B-PH-KL</b> | 22.0 (.866)        | 25.9 (1.020) | 500            | 250             |
| 13       | <b>B13B-PH-KL</b> | <b>S13B-PH-KL</b> | 24.0 (.945)        | 27.9 (1.098) | 250            | 250             |
| 14       | <b>B14B-PH-KL</b> | <b>S14B-PH-KL</b> | 26.0 (1.024)       | 29.9 (1.177) | 250            | 250             |
| 15       | <b>B15B-PH-KL</b> | <b>S15B-PH-KL</b> | 28.0 (1.102)       | 31.9 (1.256) | 250            | 200             |
| 16       | -                 | <b>S16B-PH-KL</b> | 30.0 (1.181)       | 33.9 (1.335) | -              | 200             |

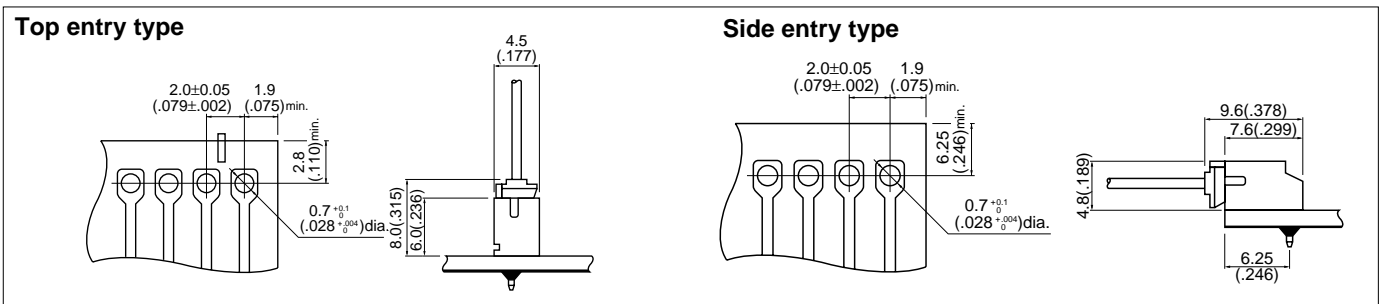
### Material and Finish

Post: Phosphor bronze, copper-undercoated, tin/lead-plated (reflow-treated)  
 Wafer: Nylon 66, UL94V-0, gray

<For reference> As the color identification, the following alphabet shall be put in the underlined part.  
 For availability, delivery and minimum order quantity, contact JST.

ex. **B2B-PH-KL-oo**  
 (blank)...gray  
 R...red E...blue S...natural (white)

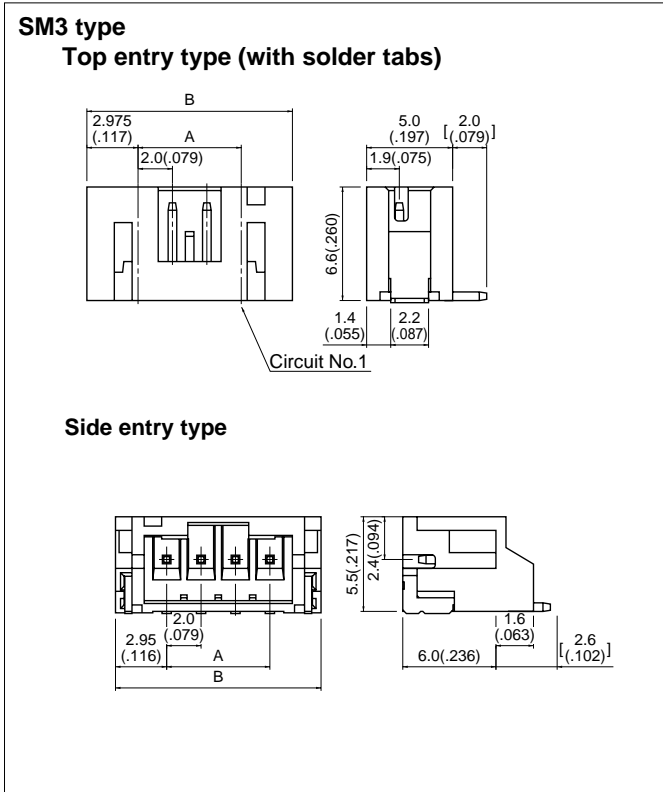
## Through-hole type PC board layout (viewed from soldering side) and Assembly layout



Note:  
 1. Tolerances are non-cumulative:  $\pm 0.05\text{mm}(\pm .002")$  for all centers.  
 2. Hole dimensions differ according to the kind of printed circuit board and piercing method. If printed circuit boards made of hard material such as FR-4 are used, the hole dimensions should be larger. The hole dimensions shown above are reference values.  
 Contact JST for details.

## SMT type shrouded header

- The shrouded headers are interchangeable with those of the KR, KRD and CR insulation displacement connectors.
- SMT type shrouded headers are not TÜV approved.



| Circuits | Model No.              |                        | Dimensions mm(in.) |                |                 | Q'ty / reel |
|----------|------------------------|------------------------|--------------------|----------------|-----------------|-------------|
|          | Top entry type         | Side entry type        | A                  | B              |                 |             |
|          |                        |                        |                    | Top entry type | Side entry type |             |
| 2        | <b>B</b> 2B-PH-SM3-TB  | <b>S</b> 2B-PH-SM3-TB  | 2.0 (.079)         | 7.95 (.313)    | 7.9 (.311)      | 1,000       |
| 3        | <b>B</b> 3B-PH-SM3-TB  | <b>S</b> 3B-PH-SM3-TB  | 4.0 (.157)         | 9.95 (.392)    | 9.9 (.390)      | 1,000       |
| 4        | <b>B</b> 4B-PH-SM3-TB  | <b>S</b> 4B-PH-SM3-TB  | 6.0 (.236)         | 11.95 (.470)   | 11.9 (.469)     | 1,000       |
| 5        | <b>B</b> 5B-PH-SM3-TB  | <b>S</b> 5B-PH-SM3-TB  | 8.0 (.315)         | 13.95 (.549)   | 13.9 (.547)     | 1,000       |
| 6        | <b>B</b> 6B-PH-SM3-TB  | <b>S</b> 6B-PH-SM3-TB  | 10.0 (.394)        | 15.95 (.628)   | 15.9 (.626)     | 1,000       |
| 7        | <b>B</b> 7B-PH-SM3-TB  | <b>S</b> 7B-PH-SM3-TB  | 12.0 (.472)        | 17.95 (.707)   | 17.9 (.705)     | 1,000       |
| 8        | <b>B</b> 8B-PH-SM3-TB  | <b>S</b> 8B-PH-SM3-TB  | 14.0 (.551)        | 19.95 (.785)   | 19.9 (.783)     | 1,000       |
| 9        | <b>B</b> 9B-PH-SM3-TB  | <b>S</b> 9B-PH-SM3-TB  | 16.0 (.630)        | 21.95 (.864)   | 21.9 (.862)     | 1,000       |
| 10       | <b>B</b> 10B-PH-SM3-TB | <b>S</b> 10B-PH-SM3-TB | 18.0 (.709)        | 23.95 (.943)   | 23.9 (.941)     | 1,000       |
| 11       | <b>B</b> 11B-PH-SM3-TB | —                      | 20.0 (.787)        | 25.95(1.022)   | 25.9(1.020)     | 1,000       |
| 12       | <b>B</b> 12B-PH-SM3-TB | <b>S</b> 12B-PH-SM3-TB | 22.0 (.866)        | 27.95(1.100)   | 27.9(1.098)     | 1,000       |
| 13       | <b>B</b> 13B-PH-SM3-TB | <b>S</b> 13B-PH-SM3-TB | 24.0 (.945)        | 29.95(1.179)   | 29.9(1.177)     | 1,000       |
| 14       | <b>B</b> 14B-PH-SM3-TB | <b>S</b> 14B-PH-SM3-TB | 26.0(1.024)        | 31.95(1.258)   | 31.9(1.256)     | 1,000       |
| 15       | <b>B</b> 15B-PH-SM3-TB | <b>S</b> 15B-PH-SM3-TB | 28.0(1.102)        | 33.95(1.337)   | 33.9(1.335)     | 1,000       |
| 16       | <b>B</b> 16B-PH-SM3-TB | —                      | 30.0(1.181)        | 35.95(1.415)   | 35.9(1.413)     | 1,000       |

### Material and Finish

Post: Copper alloy, copper-undercoated, tin/lead-plated  
 Wafer: Nylon 46, UL94V-0, natural (white)  
 Solder tab: Brass, copper-undercoated, tin/lead-plated

### Note:

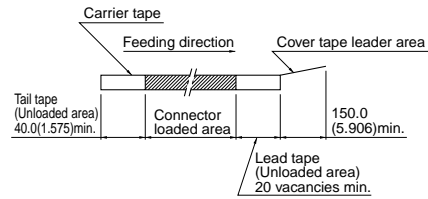
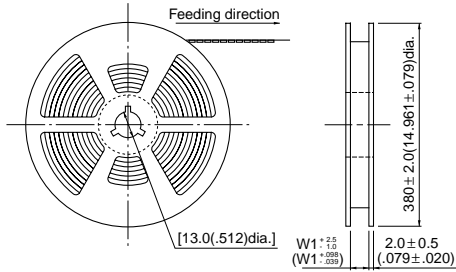
1. The products listed above are supplied on embossed-tape.
2. Contact JST for the top entry type headers with suction cap.

<For reference> As the color identification, the following alphabet shall be put in the underlined part. For availability, delivery and minimum order quantity, contact JST.

ex. **B**2**B**-PH-SM3-oo-TB  
 (blank)...natural (white)  
 R...red E...blue

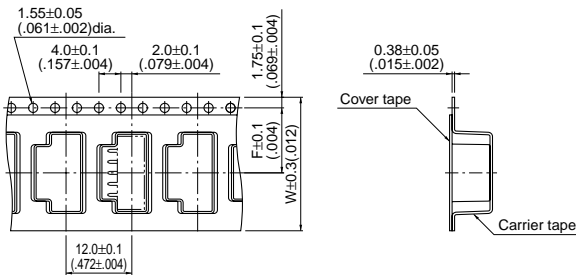
# PH CONNECTOR

## Taping specifications of SM3 type shrouded headers



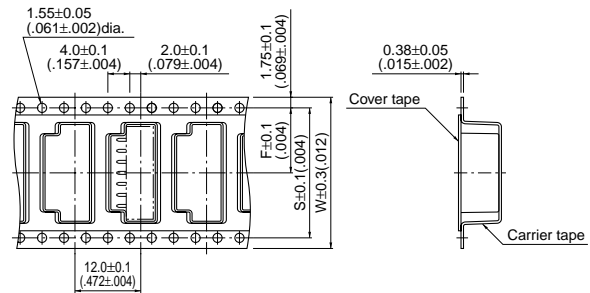
### Top entry type (2 to 6 circuits)

Feeding direction



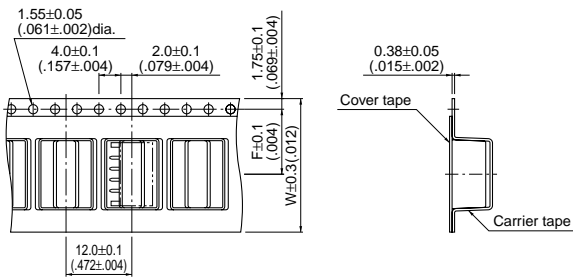
### Top entry type (7 to 16 circuits)

Feeding direction



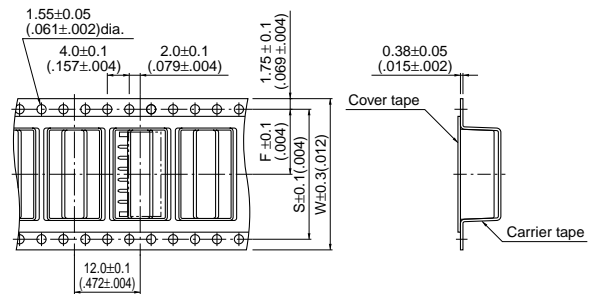
### Side entry type (2 to 6 circuits)

Feeding direction



### Side entry type (7 to 15 circuits)

Feeding direction

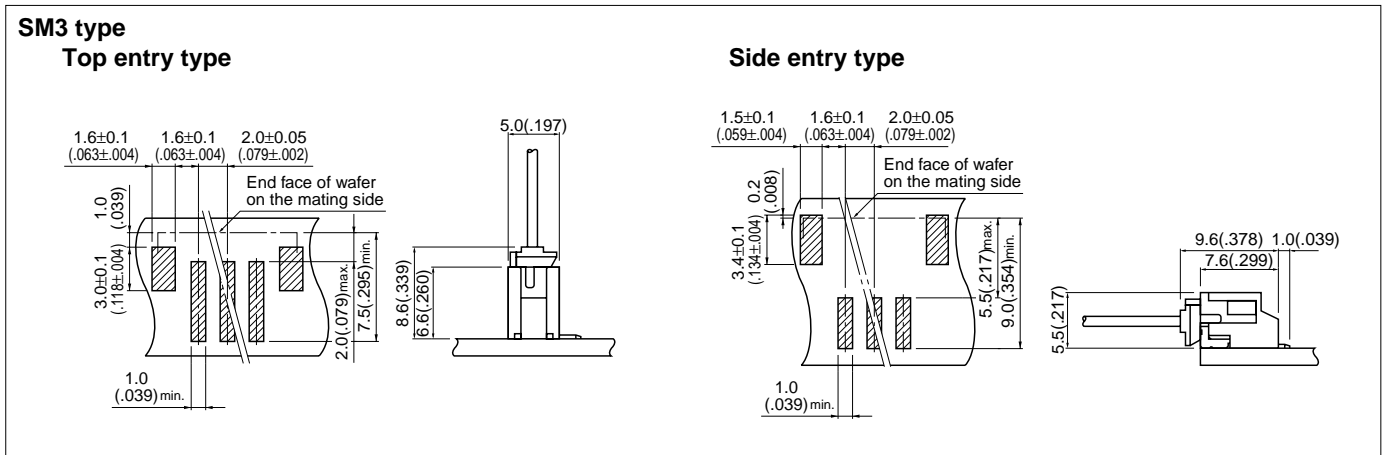


| Circuits        | Taping dimensions mm(in.) |             |             | Reel dimensions mm(in.) | Q'ty / reel |       |
|-----------------|---------------------------|-------------|-------------|-------------------------|-------------|-------|
|                 | F                         | S           | W           | W1                      |             |       |
| Top entry type  | 2 to 3                    | 7.5( .295)  | —           | 16.0( .630)             | 17.5( .689) | 1,000 |
|                 | 4 to 6                    | 11.5( .453) | —           | 24.0( .945)             | 25.5(1.004) | 1,000 |
|                 | 7 to 9                    | 14.2( .559) | 28.4(1.118) | 32.0(1.260)             | 33.5(1.319) | 1,000 |
|                 | 10 to 14                  | 20.2( .795) | 40.4(1.591) | 44.0(1.732)             | 45.5(1.791) | 1,000 |
|                 | 15 to 16                  | 26.2(1.031) | 52.4(2.063) | 56.0(2.205)             | 57.5(2.264) | 1,000 |
| Side entry type | 2 to 3                    | 7.5( .295)  | —           | 16.0( .630)             | 17.5( .689) | 1,000 |
|                 | 4 to 6                    | 11.5( .453) | —           | 24.0( .945)             | 25.5(1.004) | 1,000 |
|                 | 7 to 9                    | 14.2( .559) | 28.4(1.118) | 32.0(1.260)             | 33.5(1.319) | 1,000 |
|                 | 10 to 14                  | 20.2( .795) | 40.4(1.591) | 44.0(1.732)             | 45.5(1.791) | 1,000 |
|                 | 15                        | 26.2(1.031) | 52.4(2.063) | 56.0(2.205)             | 57.5(2.264) | 1,000 |

#### Note:

- Specifications conform to JIS C 0806. The tape width, connector loading recess square hole dimensions, etc. are determined by the number of circuits and external shape of the connector to be loaded.
- Specifications are subject to change without prior notice.

## SMT type PC board layout (viewed from component side) and Assembly layout



**Note:**

1. Tolerances are non-cumulative:  $\pm 0.05\text{mm} (\pm .002")$  for all centers.
2. The dimensions above should serve as a guideline. Contact JST for details.

## Applicator for the semi-automatic press AP-K2N

| Contact               | Crimp applicator MKS-L(-10) |                      | Compact crimp applicator MKS-LS |                      | Strip-crimp applicator MKS-SC |
|-----------------------|-----------------------------|----------------------|---------------------------------|----------------------|-------------------------------|
|                       | with safety cover           | without safety cover | with safety cover               | without safety cover | with safety cover             |
| <b>SPH-002T-P0.5S</b> | APLMK SPH002-05S            | APLNC SPH002-05S     | APLMKLS SPH002-05S              | APLLSNC SPH002-05S   | APLSC SPH002-05S              |
| <b>SPH-004T-P0.5S</b> | APLMK SPH004-05S            | APLNC SPH004-05S     | -                               | -                    | APLSC SPH004-05S              |