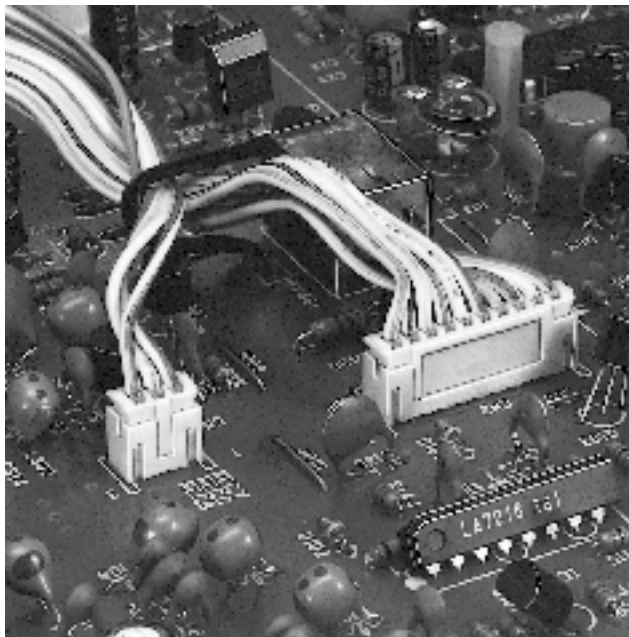
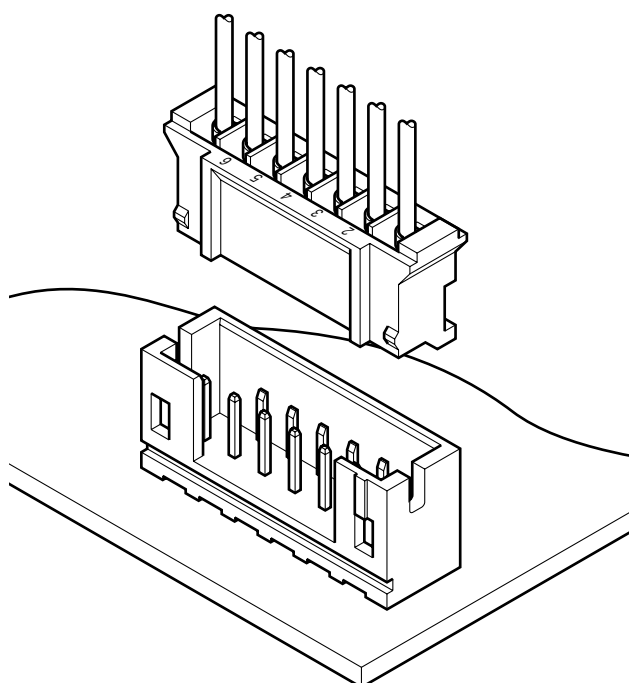




*This is a thin, low-profile 2.0mm (.079") pitch connector 7.5mm (.295") in height after mounting and 4.5mm (.177") in width. It is designed to meet the demand for high-density connection of internal wires to printed circuit boards. It is compact, highly reliable and low in cost.*



## 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: 2.0A 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 file No. E60389



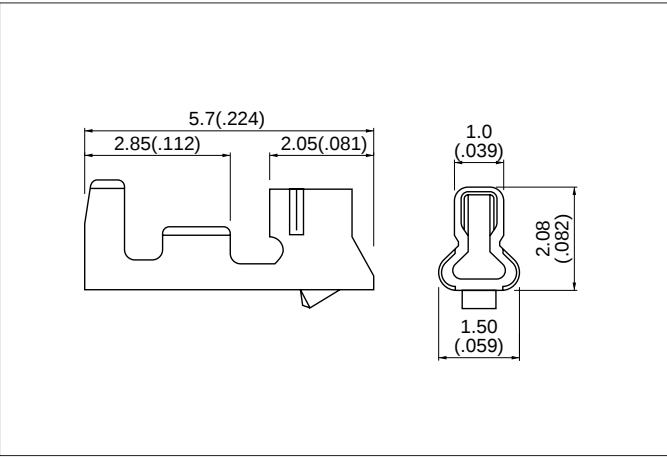
Certified file No. LR20812



File No. R75087 (conforms to DIN/VDE 0627)

# PH CONNECTOR

## Contact



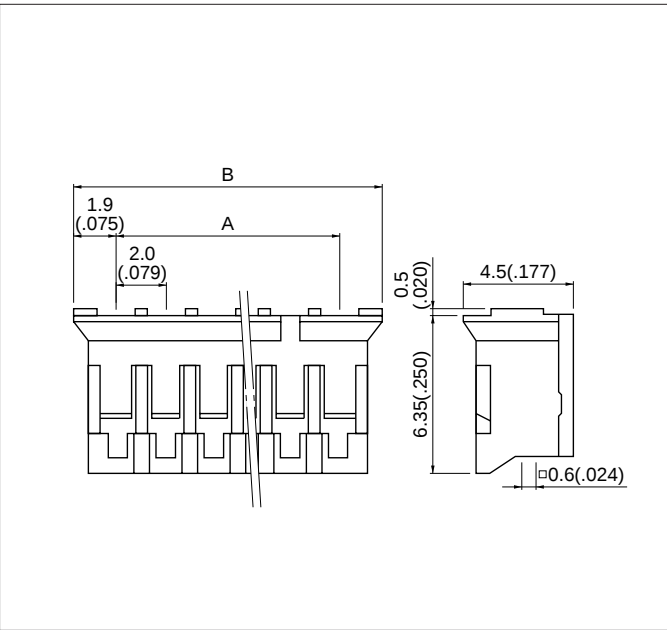
| Model No.      | Applicable wire |          |                          | Q'ty / reel |
|----------------|-----------------|----------|--------------------------|-------------|
|                | mm <sup>2</sup> | AWG #    | Insulation O.D.mm(in.)   |             |
| SPH-002T-P0.5S | 0.05 to 0.22    | 30 to 24 | 0.9 to 1.5(.035 to .059) | 8,000       |
| SPH-004T-P0.5S | 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: SPH-004T-P0.5S is not TÜV approved.

## Housing



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

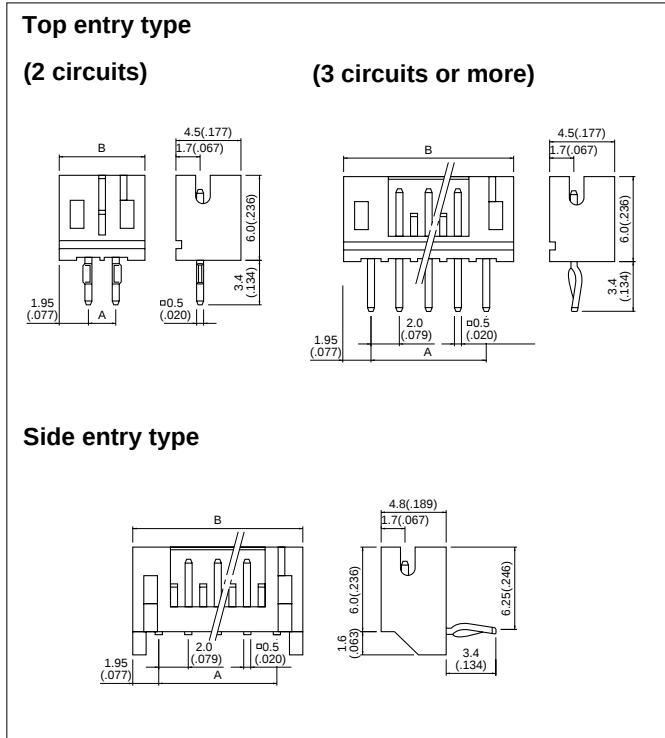
### Material and Finish

Nylon 66, UL94V-0, natural (white)

Note: PHR-16 is not TÜV approved.

## Through-hole type shrouded header

The shrouded headers are interchangeable with those of the KR, KRD and CR insulation displacement connectors (see pages 139, 141 & 137)



| Cir-<br>cuits | Model No.            |                       | Dimensions mm(in.) |             | Q'ty / box           |                       |
|---------------|----------------------|-----------------------|--------------------|-------------|----------------------|-----------------------|
|               | Top<br>entry<br>type | Side<br>entry<br>type | A                  | B           | Top<br>entry<br>type | Side<br>entry<br>type |
| 2             | <b>B 2B-PH-K</b>     | <b>S 2B-PH-K</b>      | 2.0( .079)         | 5.9( .232)  | 1,000                | 1,000                 |
| 3             | <b>B 3B-PH-K</b>     | <b>S 3B-PH-K</b>      | 4.0( .157)         | 7.9( .311)  | 1,000                | 1,000                 |
| 4             | <b>B 4B-PH-K</b>     | <b>S 4B-PH-K</b>      | 6.0( .236)         | 9.9( .390)  | 1,000                | 500                   |
| 5             | <b>B 5B-PH-K</b>     | <b>S 5B-PH-K</b>      | 8.0( .315)         | 11.9( .469) | 1,000                | 500                   |
| 6             | <b>B 6B-PH-K</b>     | <b>S 6B-PH-K</b>      | 10.0( .394)        | 13.9( .547) | 1,000                | 500                   |
| 7             | <b>B 7B-PH-K</b>     | <b>S 7B-PH-K</b>      | 12.0( .472)        | 15.9( .626) | 500                  | 500                   |
| 8             | <b>B 8B-PH-K</b>     | <b>S 8B-PH-K</b>      | 14.0( .551)        | 17.9( .705) | 500                  | 250                   |
| 9             | <b>B 9B-PH-K</b>     | <b>S 9B-PH-K</b>      | 16.0( .630)        | 19.9( .783) | 500                  | 250                   |
| 10            | <b>B10B-PH-K</b>     | <b>S10B-PH-K</b>      | 18.0( .709)        | 21.9( .862) | 500                  | 250                   |
| 11            | <b>B11B-PH-K</b>     | <b>S11B-PH-K</b>      | 20.0( .787)        | 23.9( .941) | 500                  | 250                   |
| 12            | <b>B12B-PH-K</b>     | <b>S12B-PH-K</b>      | 22.0( .866)        | 25.9(1.020) | 500                  | 250                   |
| 13            | <b>B13B-PH-K</b>     | <b>S13B-PH-K</b>      | 24.0( .945)        | 27.9(1.098) | 250                  | 250                   |
| 14            | <b>B14B-PH-K</b>     | <b>S14B-PH-K</b>      | 26.0(1.024)        | 29.9(1.177) | 250                  | 250                   |
| 15            | <b>B15B-PH-K</b>     | <b>S15B-PH-K</b>      | 28.0(1.102)        | 31.9(1.256) | 250                  | 200                   |
| 16            | <b>B16B-PH-K</b>     | <b>S16B-PH-K</b>      | 30.9(1.181)        | 33.9(1.335) | 250                  | 200                   |

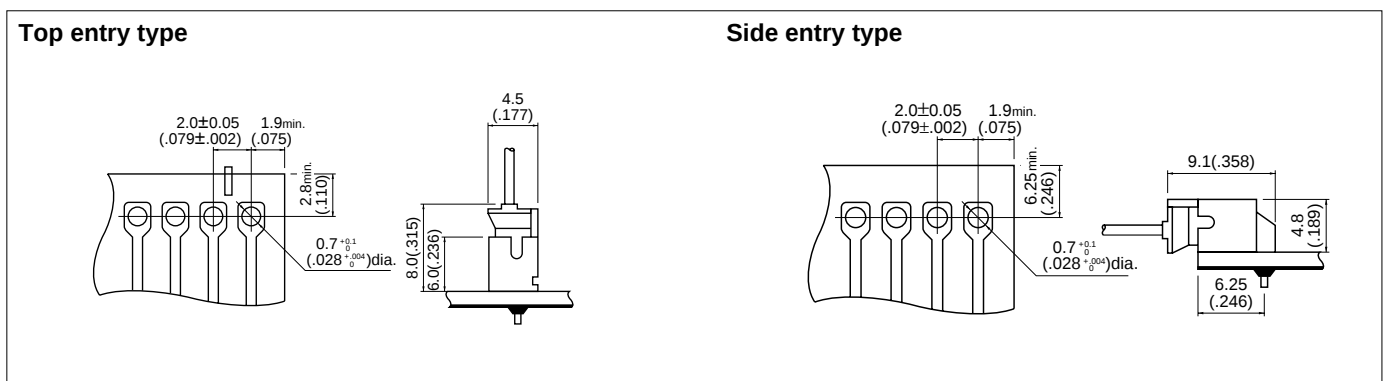
### Material and Finish

Post: Brass, copper-undercoated, tin/lead-plated  
Wafer: Nylon 66, UL94V-0, ivory

### Note:

- When ordering a natural-colored (white) shrouded header, please specify a model number with suffix "S" (Example: B3B-PH-K-S).
- 16-circuit headers are not TÜV approved.

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



### Note:

- Tolerances are non-cumulative  $\pm 0.05\text{mm}(\pm .002")$  for all centers.
- 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.

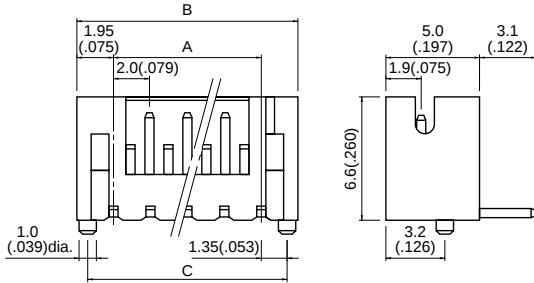
# PH CONNECTOR

## SMT type shrouded header

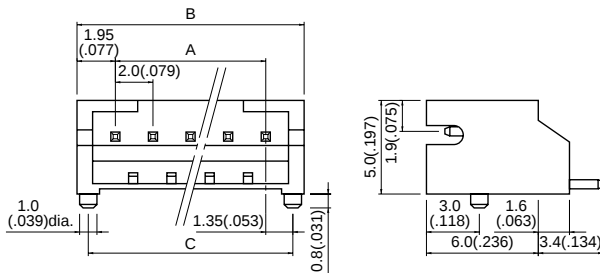
- The shrouded headers are interchangeable with those of the KR, KRD and CR insulation displacement connectors (see pages 139, 141 & 137).
- SMT type shrouded headers are not TÜV approved.

### SM type

#### Top entry type

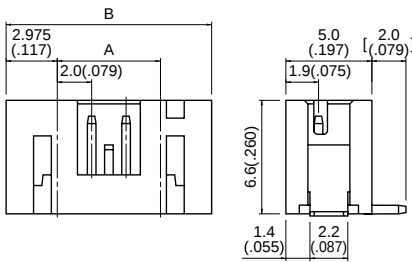


#### Side entry type

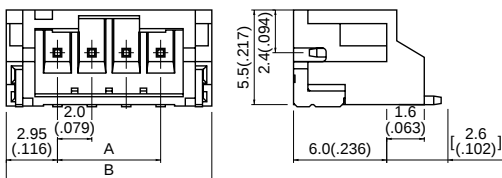


### SM3 type

#### Top entry type



#### Side entry type



| Cir-<br>cuits | Model No.         |                    | Dimensions mm(in.) |            |            | Q'ty /<br>box |
|---------------|-------------------|--------------------|--------------------|------------|------------|---------------|
|               | Top entry<br>type | Side entry<br>type | A                  | B          | C          |               |
| 2             | <b>B2B-PH-SM</b>  | –                  | 2.0(.079)          | 5.9(.232)  | 4.7(.185)  | 1,000         |
| 4             | <b>B4B-PH-SM</b>  | –                  | 6.0(.236)          | 9.9(.390)  | 8.7(.343)  | 500           |
| 5             | –                 | <b>S 5B-PH-SM</b>  | 8.0(.315)          | 11.9(.469) | 10.7(.421) | 500           |
| 7             | <b>B7B-PH-SM</b>  | <b>S 7B-PH-SM</b>  | 12.0(.472)         | 15.9(.626) | 14.7(.579) | 500           |
| 10            | –                 | <b>S10B-PH-SM</b>  | 18.0(.709)         | 21.9(.862) | 20.7(.815) | 250           |
| 11            | –                 | <b>S11B-PH-SM</b>  | 20.0(.787)         | 23.9(.941) | 22.7(.894) | 250           |

#### Material and Finish

Post: Brass nickel-undercoated, tin-plated  
Wafer: PPS, UL94V-0, natural (dark brown)

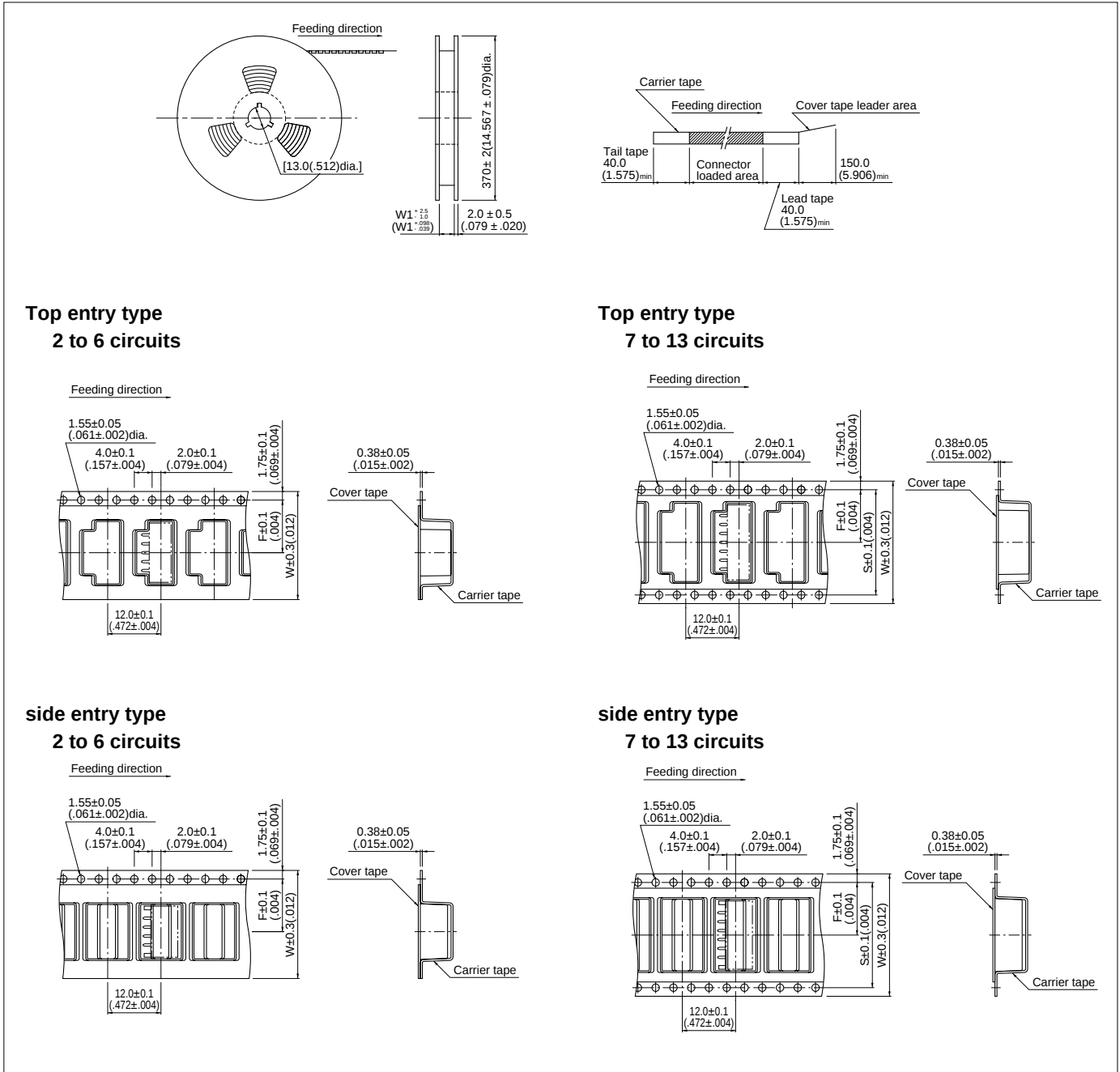
| Cir-<br>cuits | Model No.             |                       | Dimensions mm(in.) |             | Q'ty /<br>reel |
|---------------|-----------------------|-----------------------|--------------------|-------------|----------------|
|               | Top entry<br>type     | Side entry<br>type    | A                  | B           |                |
| 2             | <b>B 2B-PH-SM3-TB</b> | <b>S 2B-PH-SM3-TB</b> | 2.0(.079)          | 7.9(.311)   | 1,000          |
| 3             | <b>B 3B-PH-SM3-TB</b> | <b>S 3B-PH-SM3-TB</b> | 4.0(.157)          | 9.9(.390)   | 1,000          |
| 4             | <b>B 4B-PH-SM3-TB</b> | <b>S 4B-PH-SM3-TB</b> | 6.0(.236)          | 11.9(.469)  | 1,000          |
| 5             | <b>B 5B-PH-SM3-TB</b> | <b>S 5B-PH-SM3-TB</b> | 8.0(.315)          | 13.9(.547)  | 1,000          |
| 6             | <b>B 6B-PH-SM3-TB</b> | <b>S 6B-PH-SM3-TB</b> | 10.0(.394)         | 15.9(.626)  | 1,000          |
| 7             | <b>B 7B-PH-SM3-TB</b> | <b>S 7B-PH-SM3-TB</b> | 12.0(.472)         | 17.9(.705)  | 1,000          |
| 8             | <b>B 8B-PH-SM3-TB</b> | <b>S 8B-PH-SM3-TB</b> | 14.0(.551)         | 19.9(.783)  | 1,000          |
| 9             | <b>B 9B-PH-SM3-TB</b> | <b>S 9B-PH-SM3-TB</b> | 16.0(.630)         | 21.9(.862)  | 1,000          |
| 10            | <b>B10B-PH-SM3-TB</b> | <b>S10B-PH-SM3-TB</b> | 18.0(.709)         | 23.9(.941)  | 1,000          |
| 11            | <b>B11B-PH-SM3-TB</b> | –                     | 20.0(.787)         | 25.9(1.020) | 1,000          |
| 12            | <b>B12B-PH-SM3-TB</b> | <b>S12B-PH-SM3-TB</b> | 22.0(.866)         | 27.9(1.098) | 1,000          |
| 13            | <b>B13B-PH-SM3-TB</b> | <b>S13B-PH-SM3-TB</b> | 24.0(.945)         | 29.9(1.177) | 1,000          |
| 14            | –                     | <b>S14B-PH-SM3-TB</b> | 26.0(1.024)        | 31.9(1.256) | 1,000          |

#### Material and Finish

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

Note: The products listed above are supplied on embossed-tape.

## Taping specifications of SM3 type shrouded headers



| 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 13 | 20.2(.795)                | 40.4(1.591) | 44.0(1.732) | 45.5(1.791)             | 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 13 | 20.2(.795)                | 40.4(1.591) | 44.0(1.732) | 45.5(1.791)             | 1,000       |

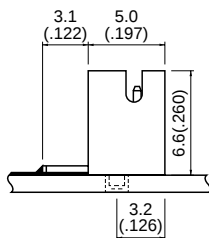
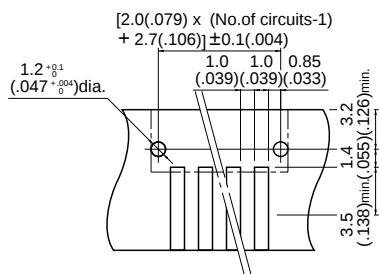
Note: Specifications conform to JIS C 0806. The tape width, connector loading recess square hole dimensions, etc. are determined by the number of circuits and external shape of the connector to be loaded.

# PH CONNECTOR

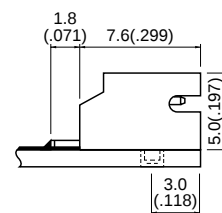
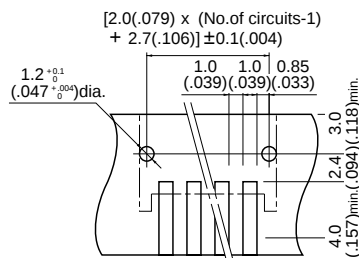
## SMT type PC board layout (viewed from component side) and Assembly layout -----

### SM type

#### Top entry type

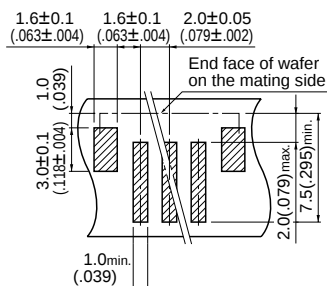


#### Side entry type

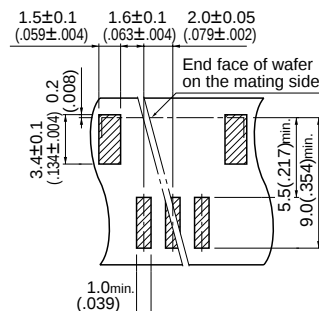


### SM3 type

#### Top entry type



#### Side entry type



#### 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.