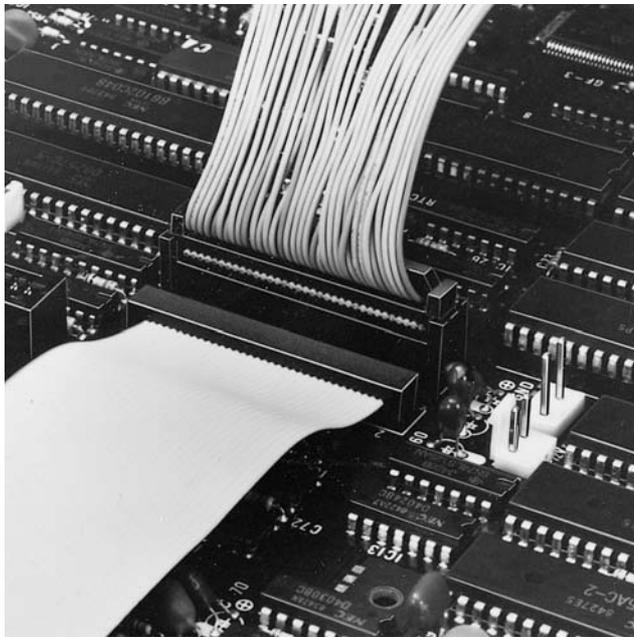
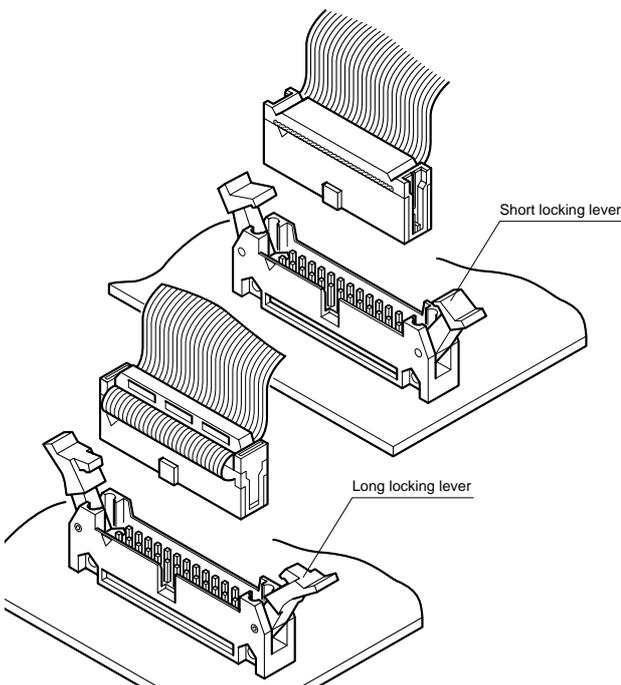


# RA CONNECTOR<IDC>

Disconnectable Insulation displacement connectors for 1.27mm pitch ribbon cables



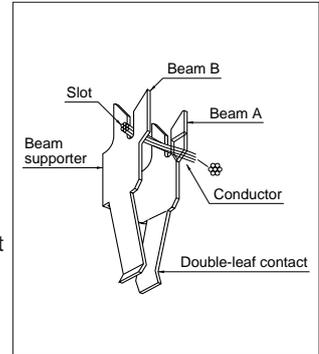
*To keep pace with the rapid developments in electronics, internal and external connection systems are naturally increasing in density. At the same time, labor requirements and overall costs must be minimized. RA connectors meet all of these requirements, while providing increased reliability. These connectors, whose materials, shapes, dimensions, and surface treatments have been carefully selected, are based on the latest technological information that has been accumulated and improved over years of experience in crimping connection technology.*



## Features

### • Twin U-slot ID section

The twin U-slot is the most important IDC element in JST's RA connectors. As shown in the figure, wire conductors are connected between the slots of U-shaped parallel beams, and the distance between each adjacent pair of beams is designed to be one third of the pitch of wire strands.



### • Two-die processing and selective gold plating

Two precision dies are used to blank and form the contacts. After the first die blanks the contacts, they are gold plated at crucial points. Then, the contacts are formed by the second die. This eliminates unnecessary gold-plating and overall costs are minimized. This innovation is another example of our industry-leading technology.

### • Selective gold-plated posts

Header posts are also selectively gold-plated. While square wire material is used for production of conventional posts in loose pieces, continuous flat strip is used for production of our post in chain form. This allows selective gold-plating and provides cost reduction.

### • Cost-efficient

JST's unique technology allows it to produce connectors that are extremely reliable and cost-efficient.

### • Interchangeable cables and connectors

RA connectors fit commercially available 1.27 mm pitch flat ribbon cables. A variety of ribbon cables are offered according to the purpose. Moreover, the RA series receptacles and header are interchangeable with the similar type of connectors commercially available. Contact JST before procuring cables and other manufacturer's mating connectors.

\* Refer to "General Instruction and Notice when using Terminals and Connectors" at the end of this catalog.

\* Contact JST for details.

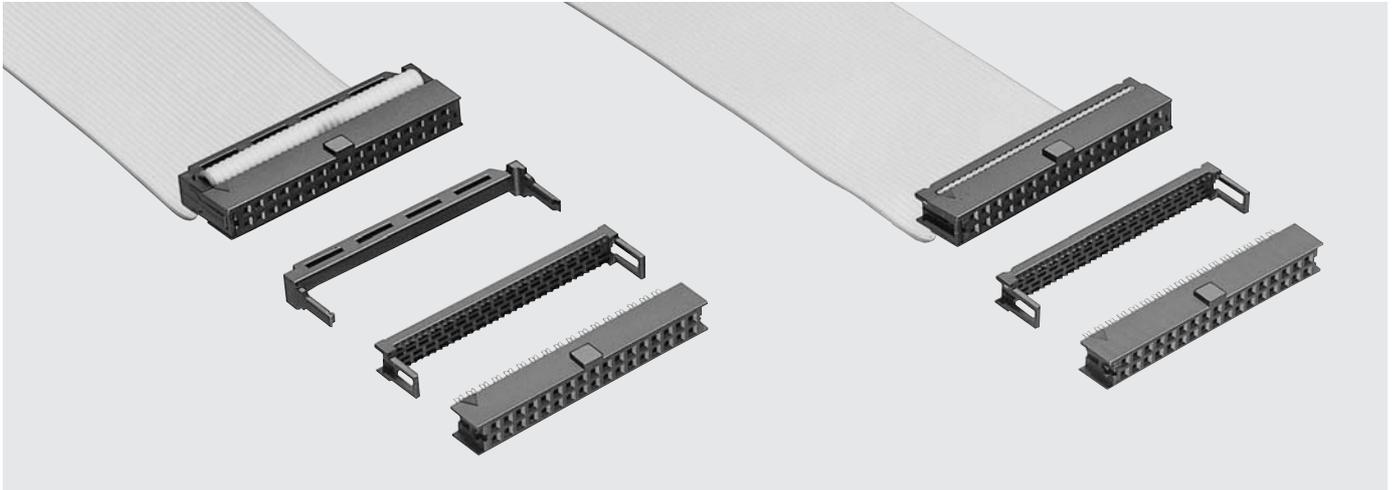
\* Compliant with RoHS.

## Standards

Recognized E60389

Certified LR20812

## Receptacle



## Specifications

### Characteristics

|                       |  |
|-----------------------|--|
| Current rating        | 1.0 A AC, DC   |
| Voltage rating        | 300 V AC, DC   |
| Temperature range     | (including temperature rise in applying electrical current)<br>-55°C to +125°C (gold-plated)<br>-55°C to +105°C (tin-plated)                           |
| Contact resistance    | Initial value/10 mΩ max. (gold-plated)<br>40 mΩ max. (tin-plated)<br>After environmental tests/<br>15 mΩ max. (gold-plated)<br>50 mΩ max. (tin-plated) |
| Insulation resistance | 5,000 MΩ min.  |
| Withstanding voltage  | 500 VAC/5 seconds  |
| Applicable wire       | AWG #28, 1.27 mm pitch ribbon cable  |

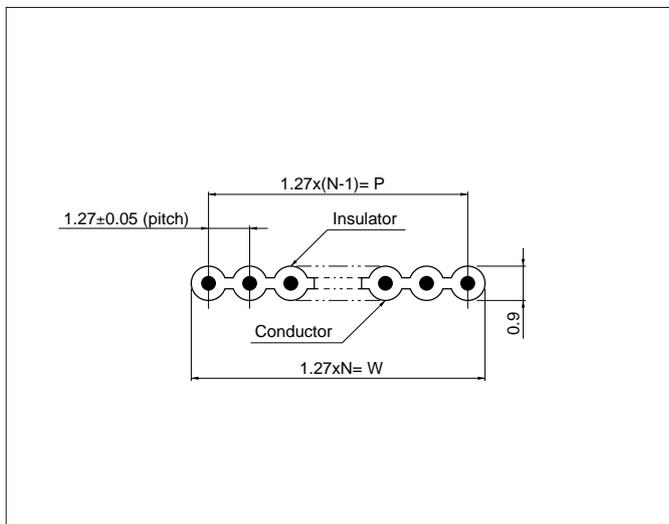
### Materials

|                    |   |
|--------------------|---|
| Contact            | Phosphor bronze<br>• Nickel-undercoated, selective gold-plated<br>• Copper-undercoated, tin-plated (reflow treatment) |
| Receptacle housing | Glass-filled PBT, UL94V-0, black  |
| Cover housing      | Glass-filled PBT, UL94V-0, black  |
| Strain relief      | Glass-filled PBT, UL94V-0, black  |

\*Contact JST for details.

## Applicable cables

Ribbon cables conforming to the following specifications can be used with RA connector receptacles. Contact JST for details.



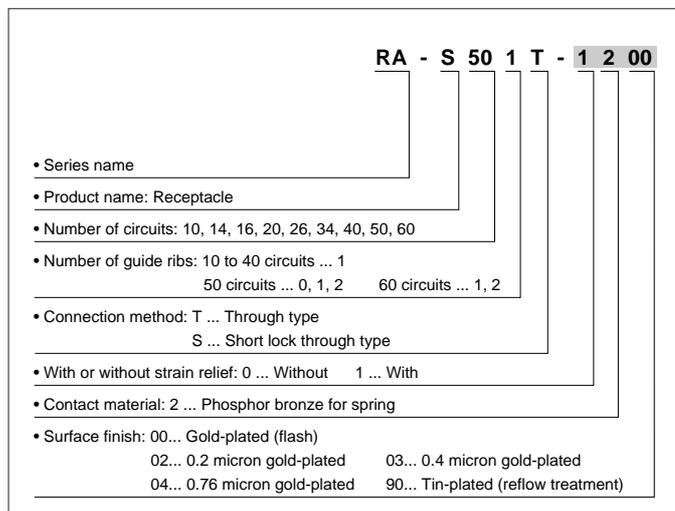
Note: N --- Number of circuits

| No. of conductors (n) | Dimensional tolerance (mm) |      |
|-----------------------|----------------------------|------|
|                       | P                          | W    |
| 10 to 14              | ±0.18                      | ±0.3 |
| 16 to 26              | ±0.28                      | ±0.3 |
| 34 to 60              | ±0.38                      | ±0.3 |

|           |   |
|-----------|---|
| Conductor | AWG #28 stranded wire<br>Construction: 7/0.127 mm dia.<br>Material: Tin-plated annealed copper wire |
|           | AWG #28 solid wire<br>Construction: 0.32 mm dia.<br>Material: Tin-plated annealed copper wire       |
| Insulator | Soft vinyl chloride   |

# RA CONNECTOR

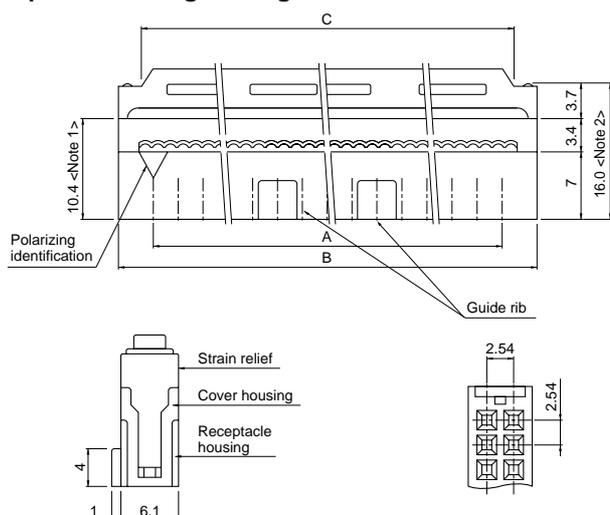
## Model number identification



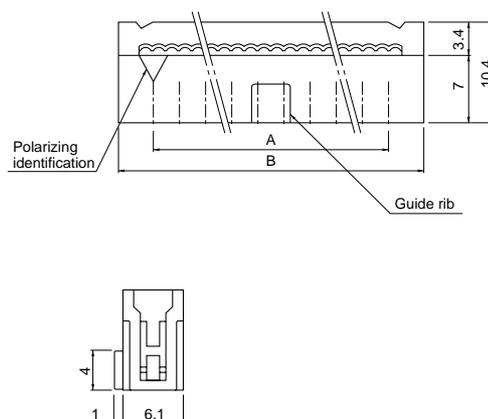
Note:

The standard gold-plated type is identified by the suffix number [-1200], but this suffix number is usually omitted. The gold-plated type identified by [-0200] is indicated by [-0] for short. Other types must be identified by the full code number. Special types do not conform to the above coding system.

### Receptacle for long locking lever header



### Receptacle for short locking lever header



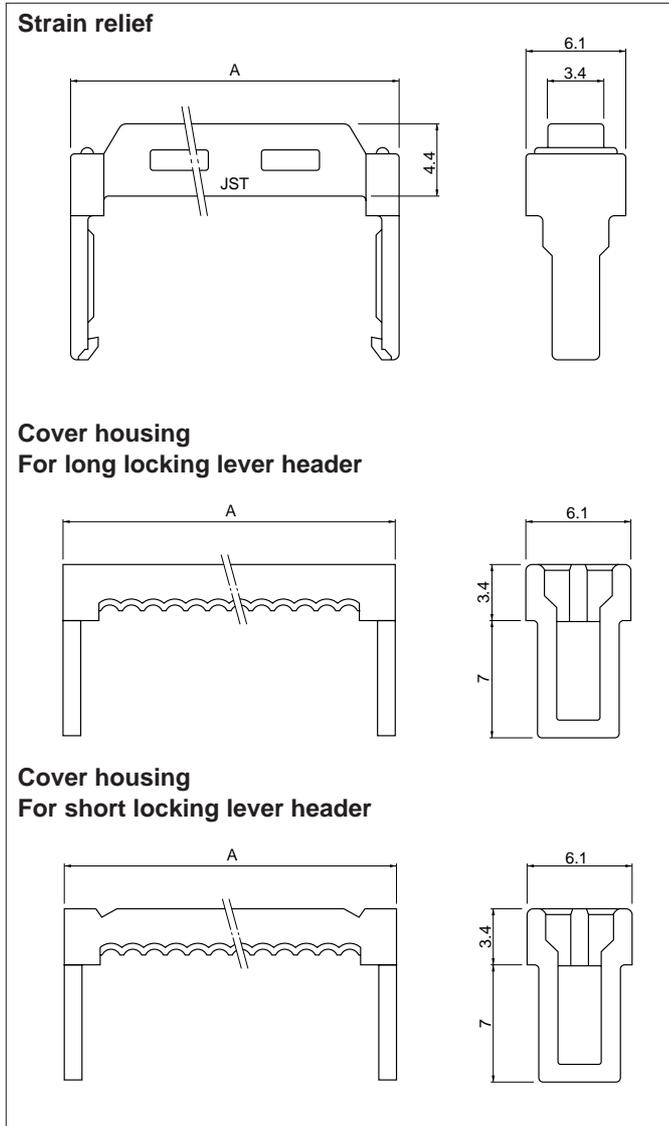
<Note 1>: Height without strain relief    <Note 2>: Height with strain relief

| Circuits | Type of cover housing | No. of guide ribs | Model No.               |                       |   | Dimensions (mm) |       |       | Q'ty/box |
|----------|-----------------------|-------------------|-------------------------|-----------------------|---|-----------------|-------|-------|----------|
|          |                       |                   | Gold-plated receptacles |                       | Tin-plated receptacles (With strain relief) | A               | B     | C     |          |
|          |                       |                   | With strain relief      | Without strain relief |   |                 |       |       |          |
| 10       | Long type             | 1                 | RA-S101T                | RA-S101T-0            | RA-S101T-1290                               | 10.16           | 17.30 | 13.00 | 300      |
| 14       |                       | 1                 | RA-S141T                | RA-S141T-0            | RA-S141T-1290                               | 15.24           | 22.38 | 18.08 | 200      |
| 16       |                       | 1                 | RA-S161T                | RA-S161T-0            | RA-S161T-1290                               | 17.78           | 24.92 | 20.62 | 200      |
| 20       |                       | 1                 | RA-S201T                | RA-S201T-0            | RA-S201T-1290                               | 22.86           | 30.00 | 25.70 | 150      |
| 26       |                       | 1                 | RA-S261T                | RA-S261T-0            | RA-S261T-1290                               | 30.48           | 37.62 | 33.32 | 150      |
| 34       | Short type            | 1                 | —                       | RA-S341S-0            | —   | 40.64           | 47.78 | —     | 100      |
|          | Long type             |                   | RA-S341T                | RA-S341T-0            | RA-S341T-1290                               |                 |       | 43.48 |          |
| 40       | Long type             | 1                 | RA-S401T                | RA-S401T-0            | RA-S401T-1290                               | 48.26           | 55.40 | 51.10 | 100      |
| 50       | Short type            | 1                 | —                       | RA-S502S-0            | —   | 60.96           | 68.10 | —     | 75       |
|          | Long type             | 0                 | RA-S500T                | RA-S500T-0            | RA-S500T-1290                               |                 |       | 63.80 |          |
|          |                       | 1                 | RA-S501T                | RA-S501T-0            | RA-S501T-1290                               |                 |       |       |          |
|          |                       | 2                 | RA-S502T                | RA-S502T-0            | RA-S502T-1290                               |                 |       |       |          |
| 60       | Short type            | 1                 | —                       | RA-S602S-0            | —   | 73.66           | 80.80 | —     | 75       |
|          | Long type             |                   | RA-S601T                | RA-S601T-0            | RA-S601T-1290                               |                 |       | 76.50 |          |
|          |                       |                   | 2                       | RA-S602T              | RA-S602T-0                                  | RA-S602T-1290   |       |       |          |

RoHS compliance Tin-plated products display (LF)(SN) on a label.

## Strain relief and cover housing

Indicate the Model No. shown below when ordering strain relief and cover separately.



| Circuits | Strain relief | Model No. |            | Dimensions (mm) |
|----------|---------------|-----------|------------|-----------------|
|          |               | Long type | Short type |                 |
| 10       | RA-SR10T-1    | RA-CH10T  | —          | 17.30           |
| 14       | RA-SR14T-1    | RA-CH14T  | —          | 22.38           |
| 16       | RA-SR16T-1    | RA-CH16T  | —          | 24.92           |
| 20       | RA-SR20T-3    | RA-CH20T  | —          | 30.00           |
| 26       | RA-SR26T-3    | RA-CH26T  | —          | 37.62           |
| 34       | RA-SR34T-3    | RA-CH34T  | RA-CH34S   | 47.78           |
| 40       | RA-SR40T-3    | RA-CH40T  | —          | 55.40           |
| 50       | RA-SR50T-3    | RA-CH50T  | RA-CH50S   | 68.10           |
| 60       | RA-SR60T-1    | RA-CH60T  | RA-CH60S   | 80.80           |

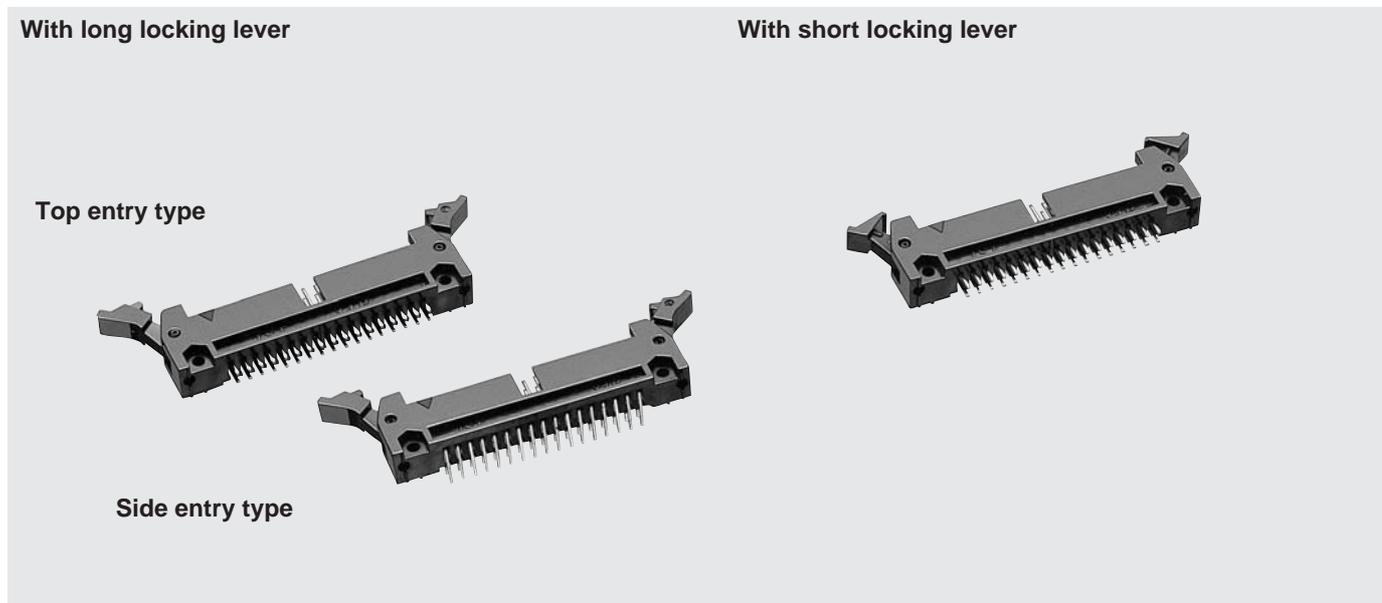
### RoHS compliance

Note: 1. Color: Black

2. When ordering Strain relief or Cover housing only, refer to the above Model Nos.

# RA CONNECTOR

## Shrouded header



## Specifications

### Characteristics

|                               |  |
|-------------------------------|--|
| Current rating                | 1.0 A AC, DC   |
| Voltage rating                | 300 V AC, DC   |
| Temperature range             | (including temperature rise in applying electrical current)<br>-55° C to +125° C (gold-plated)<br>-55° C to +105° C (tin-plated) |
| Insulation resistance         | 5,000 M $\Omega$ min.  |
| Withstanding voltage          | 500 VAC/5 seconds  |
| Applicable PC board thickness | 1.6 mm   |

Note: Contact JST for details.

### Materials and Finish

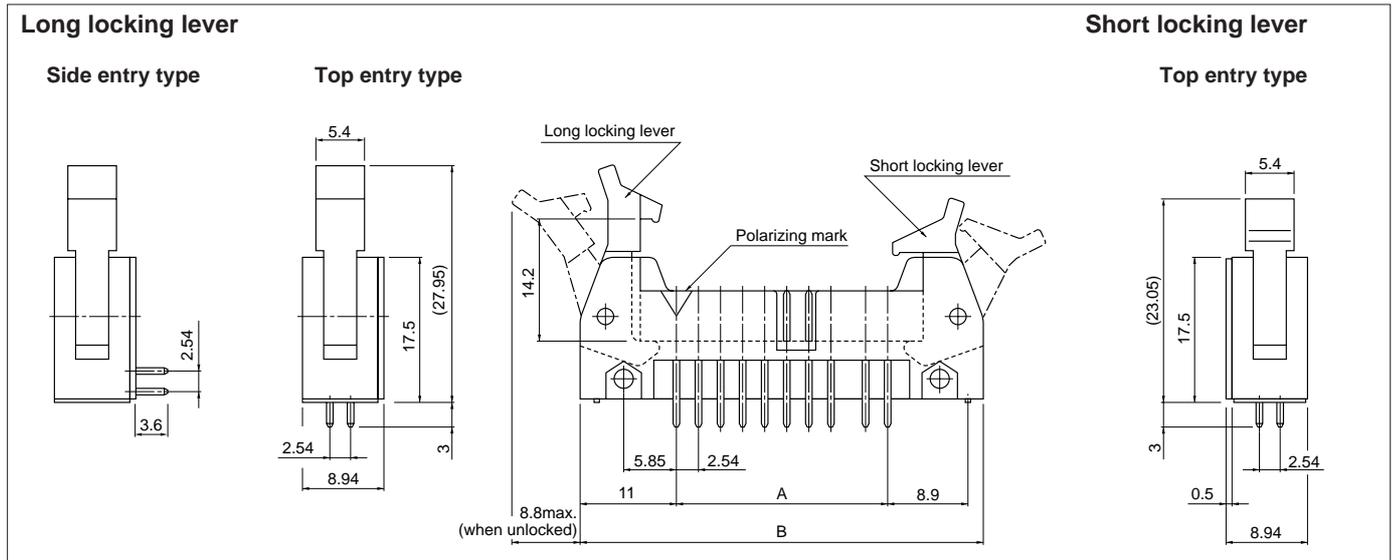
|         |  |
|---------|--|
| Post    | Brass <ul style="list-style-type: none"><li>Nickel-undercoated</li><li>Mating part; gold-plated</li><li>Solder tail; tin-plated (reflow treatment)</li><li>Copper-undercoated, tin-plated (reflow treatment)</li></ul> |
| Housing | Glass-filled PBT, UL94V-0, black   |

## Model number identification

|  |           |          |           |          |           |          |          |           |
|--|-----------|----------|-----------|----------|-----------|----------|----------|-----------|
|  | <b>RA</b> | <b>H</b> | <b>50</b> | <b>1</b> | <b>TD</b> | <b>1</b> | <b>1</b> | <b>10</b> |
| • Series name  |           |          |           |          |           |          |          |           |
| • Product name: Header   |           |          |           |          |           |          |          |           |
| • Number of circuits: 10, 14, 16, 20, 26, 34, 40, 50, 60   |           |          |           |          |           |          |          |           |
| • Number of guide grooves: 10 to 40 circuits...1<br>50 and 60 circuits...1, 2  |           |          |           |          |           |          |          |           |
| • PC board mounting method: TD...Top entry<br>SD...Side entry  |           |          |           |          |           |          |          |           |
| • Type of locking lever: 0...Without locking lever<br>1...Long locking lever<br>2...Short locking lever  |           |          |           |          |           |          |          |           |
| • Post material: 1...Brass   |           |          |           |          |           |          |          |           |
| • Surface finish: 10...Gold-plated (flash)    12...0.2 micron gold-plated<br>13...0.4 micron gold-plated    14...0.76 micron gold-plated<br>90...Tin-plated (reflow treatment) |           |          |           |          |           |          |          |           |

Note:

The standard gold-plated type is identified by the suffix number [-110], but this suffix number is usually omitted. Other types must be identified by the full code number. Special types do not conform to the coding system in the left.



| Cir-cuits | Type of locking lever | No. of guide grooves | Model No.                               |                 |  |                 | Dimensions (mm) |       | Q'ty /box |
|-----------|-----------------------|----------------------|---|-----------------|--|-----------------|-----------------|-------|-----------|
|           |                       |                      | Gold-plated header (With locking lever) |                 | Tin-plated header (With locking lever) |                 | A               | B     |           |
|           |                       |                      | Top entry type                          | Side entry type | Top entry type                         | Side entry type |                 |       |           |
| 10        | Long type             | 1                    | RA-H101TD                               | RA-H101SD       | RA-H101TD-1190                         | RA-H101SD-1190  | 10.16           | 32.16 | 50        |
| 14        |                       | 1                    | RA-H141TD                               | RA-H141SD       | RA-H141TD-1190                         | RA-H141SD-1190  | 15.24           | 37.26 | 50        |
| 16        |                       | 1                    | RA-H161TD                               | RA-H161SD       | RA-H161TD-1190                         | RA-H161SD-1190  | 17.78           | 39.78 | 50        |
| 20        |                       | 1                    | RA-H201TD                               | RA-H201SD       | RA-H201TD-1190                         | RA-H201SD-1190  | 22.86           | 44.86 | 50        |
| 26        |                       | 1                    | RA-H261TD                               | RA-H261SD       | RA-H261TD-1190                         | RA-H261SD-1190  | 30.48           | 52.48 | 25        |
| 34        | Short type            | 1                    | *RA-H341TD-2110                         | —               | —                                      | —               | 40.64           | 62.64 | 25        |
|           | Long type             |                      | RA-H341TD                               | RA-H341SD       | RA-H341TD-1190                         | RA-H341SD-1190  |                 |       |           |
| 40        | Long type             | 1                    | RA-H401TD                               | RA-H401SD       | RA-H401TD-1190                         | RA-H401SD-1190  | 48.26           | 70.26 | 25        |
| 50        | Short type            | 1                    | *RA-H501TD-2110                         | —               | —                                      | —               | 60.96           | 82.96 | 25        |
|           | Long type             |                      | *RA-H501TD                              | *RA-H501SD      | *RA-H501TD-1190                        | *RA-H501SD-1190 |                 |       |           |
|           | Long type             | 2                    | RA-H502TD                               | RA-H502SD       | RA-H502TD-1190                         | RA-H502SD-1190  |                 |       |           |
| 60        | Short type            | 1                    | *RA-H601TD-2110                         | —               | —                                      | —               | 73.66           | 95.66 | 25        |
|           | Long type             |                      | *RA-H601TD                              | *RA-H601SD      | *RA-H601TD-1190                        | *RA-H601SD-1190 |                 |       |           |
|           | Long type             | 2                    | RA-H602TD                               | RA-H602SD       | RA-H602TD-1190                         | RA-H602SD-1190  |                 |       |           |

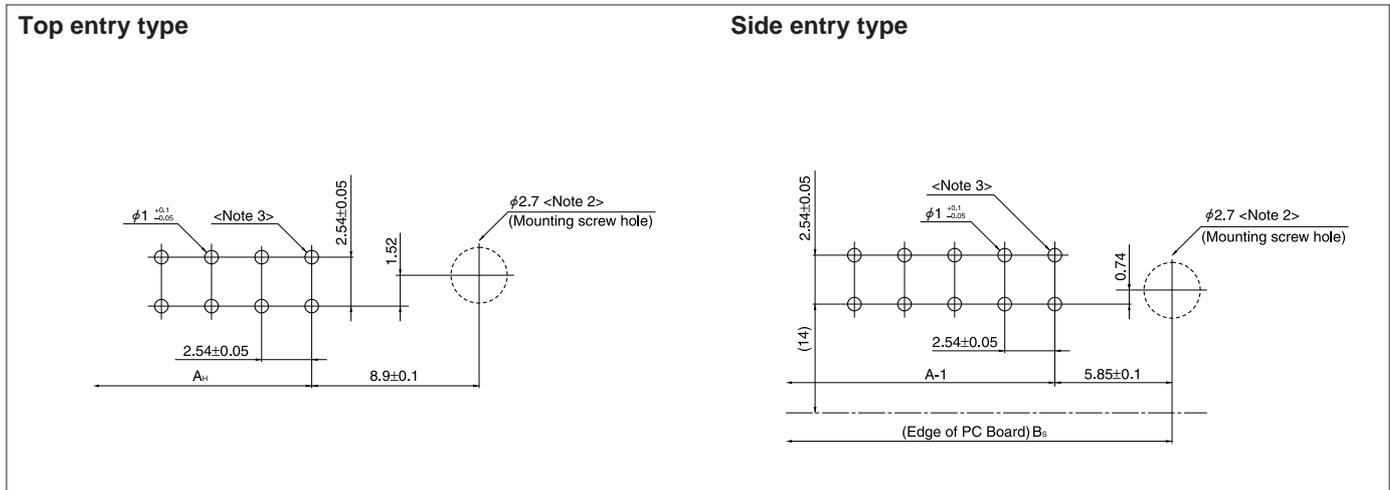
**RoHS compliance** This product displays (LF)(SN) on a label.

Note: 1. Headers with locking levers can be used only for receptacle with strain reliefs.

2. \*Marked products are not CSA approved.

# RA CONNECTOR

## PC board layout (viewed from component side)



| Circuits | Dimensions (mm) |       |
|----------|-----------------|-------|
|          | $A_H$           | $B_S$ |
| 10       | 10.16           | 21.86 |
| 14       | 15.24           | 26.94 |
| 16       | 17.78           | 29.48 |
| 20       | 22.86           | 34.56 |
| 26       | 30.48           | 42.18 |
| 34       | 40.64           | 52.34 |
| 40       | 48.26           | 59.96 |
| 50       | 60.96           | 72.66 |
| 60       | 73.66           | 85.36 |

**Note:**

1. Tolerances are non-cumulative:  $\pm 0.05$  mm for all centers. Hole dimensions differ according to the kind of PC board and piercing method. The dimensions above should serve as a guideline. Contact JST for details.
2. The mounting screw holes are not required for standard headers.
3. This is normally No. 1 pin position.