

# Interface Connectors for Miniature, Portable Terminal Devices

## ST Series



### Overview

Developed as external input/output connectors for the portable and mobile devices used in consumer markets. As such, the connectors incorporate features required to assure reliable electrical and mechanical performance under extreme and unpredictable conditions.

### Features

#### 1. Strong locking mechanism

To assure continuous reliability of the connection in an unpredictable consumer environment, mated connectors will withstand pull force of 49N max. applied in any direction.

#### 2. Prevention against reversed or angle insertion

Multiple polarization keys will not allow incorrect insertion of the mating plug.

In addition, contacts will not be damaged when the user attempts to insert only the corner of the mating plug.

#### 3. Small size and low profile

Contact pitch of 0.5 mm and utilization of state-of-the-art manufacturing technologies has produced receptacle height of 3 mm above the board and maximum thickness of the plug of only 7 mm.

#### 4. EMI protection

Built-in ground continuity features and EMI shielding assure interference free performance.

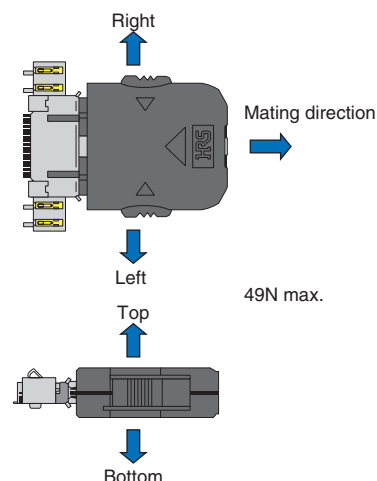
#### 5. Wide variety of contact positions and mounting styles

Standard, reverse, vertical and cradle mountings, as well as utilization of variety of cables and conductors assure application of this connector in diversified applications.

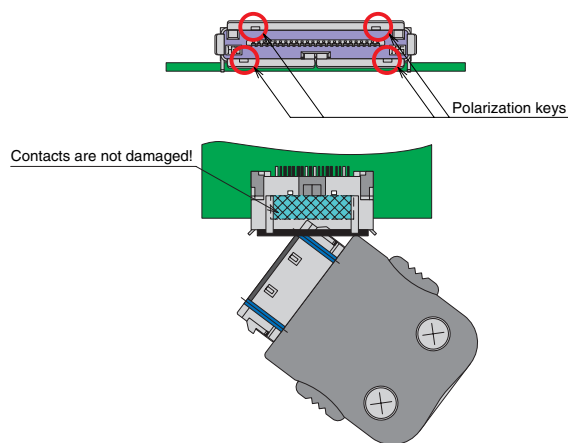
### Applications

Digital Still Cameras, Personal Digital Assistance, Notebook computers, Cellular phones, Portable readers, Mobile recorders and any mobile or portable device requiring high reliability small size input/output connection.

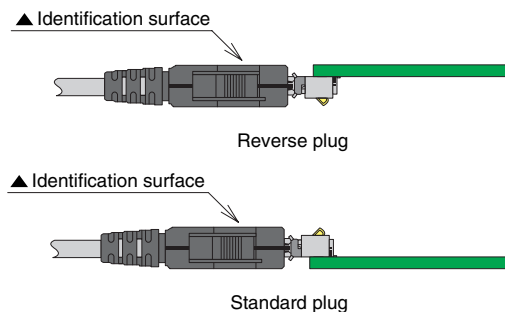
#### Strong locking mechanism



#### Prevention against reversed or angle insertion



#### Plug variations



## ST Series Interface Connectors for Miniature, Portable Terminal Devices

### Specifications

|        |                |                                                      |                             |                         |
|--------|----------------|------------------------------------------------------|-----------------------------|-------------------------|
| Rating | Current rating | 0.5A (1 A max. can be carried via 4 random contacts) | Operating temperature range | : -30°C to +80°C        |
|        | Voltage rating | 100V AC                                              | Storage temperature range   | : -40°C to +85°C (Note) |

| Characteristic                     | Specification                                                                                | Conditions                                                                                                          |
|------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 1. Contact resistance              | 60m Ω max.                                                                                   | 100mA DC                                                                                                            |
| 2. Insulation resistance           | 100M Ω min.                                                                                  | 250V DC                                                                                                             |
| 3. Dielectric withstanding voltage | No flashover or insulation breakdown.                                                        | 350V AC/ one minute                                                                                                 |
| 4. Mating/un-mating forces         | Mating: 29.4N max.                                                                           | With corresponding connector.                                                                                       |
| 5. Durability (mating/un-mating)   | Contact resistance: 50 m Ω max.                                                              | 10000 cycles                                                                                                        |
| 6. Shock                           | No electrical discontinuity of 10 μ sec. max.<br>Contact resistance: 100m Ω max.             | Acceleration of 490 m/s <sup>2</sup> , 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis.     |
| 7. Temperature cycle               | Contact resistance: 100m Ω max.<br>Insulation resistance: 1000M Ω min.                       | Temperature : -55°C → +5°C to +35°C → +85°C → +5°C to +35°C<br>Time (Minutes): 30 → 5 → 30 → 5<br>5 cycles          |
| 8. Salt spray                      | No corrosions                                                                                | 5±1% salt water solution at 35±3°C for 48 hours, after washing without salt, leave for 24 hours at room temperature |
| 9. Lock strength                   | Fully inserted and locked corresponding connector. No physical damage or electrical failure. | Pull force: 49N max. applied in each of the 3 axis.                                                                 |
| 10. Shock                          | No electrical discontinuity of 10 μ sec. max. Contact resistance: 100m Ω max.                | Frequency: 10 to 55 Hz, single amplitude of 0.75mm, 2 hours, 3 axis.                                                |

Note: Includes temperature rise caused by current flow.

### Materials

#### ● Receptacles and cradles

| Component | Material                                 | Finish                    | Remarks |
|-----------|------------------------------------------|---------------------------|---------|
| Insulator | Thermoplastic compound, glass reinforced | Color: Black              | UL94V-0 |
| Contacts  | Copper alloy                             | Contact area: Gold plated | —————   |
| Shield    | Stainless steel                          | Tin alloy plating         | —————   |

#### ● Plugs

| Component | Material                                 | Finish                    | Remarks |
|-----------|------------------------------------------|---------------------------|---------|
| Insulator | Thermoplastic compound, glass reinforced | Color: Black              | UL94V-0 |
| Contacts  | Copper alloy                             | Contact area: Gold plated | —————   |
| Shield    | Stainless steel                          | —————                     | —————   |
| Cover     | Thermoplastic compound, glass reinforced | —————                     | UL94-HB |

### Ordering information

#### ● Receptacles

**ST 60 - 18 P /4 (50)**

① ② ④ ⑤ ⑥ ⑧

#### ● Plugs

**ST 40 X - 18 S - CVR (80)**

① ② ③ ④ ⑤ ⑦ ⑧

#### ● Plug - Cradle type

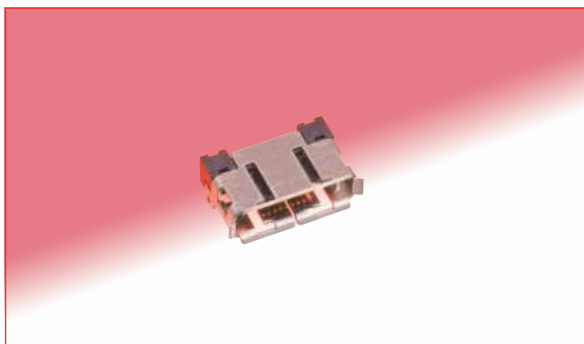
**ST 80 X - 18 S (50)**

① ② ③ ④ ⑤ ⑧

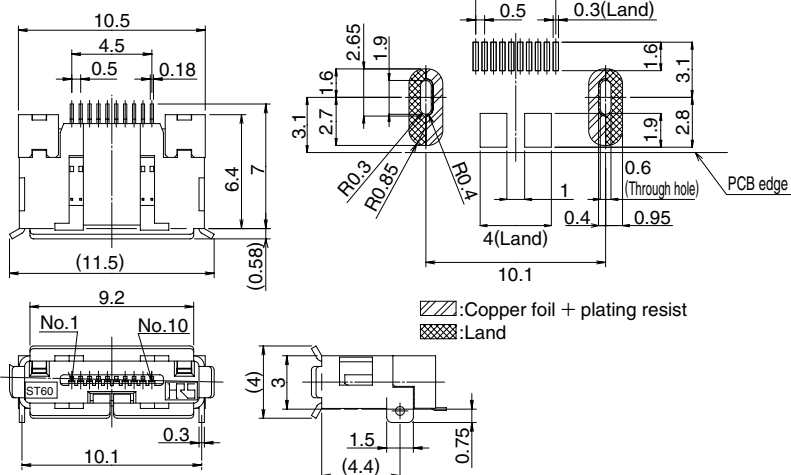
|                          |                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------|
| ① Series name            | : ST                                                                                                                  |
| ② Termination type       | 60 : Right angle SMT<br>40 : Solder type<br>80 : Cradle, vertical, SMT                                                |
| ③ Shield                 | X : With shield<br>Blank : Without shield                                                                             |
| ④ Number of positions    |                                                                                                                       |
| ⑤ Contact type           | P : Male contact (Receptacle)<br>S : Female contact (Plug)                                                            |
| ⑥ Contact arrangement /4 | : Combination, with 4 power contacts                                                                                  |
| ⑦ Plug type              | CV : Standard type, for top PCB mount<br>CVR : Reverse type, for bottom PCB mount<br>CV1 : For larger diameter cables |
| ⑧ RoHS compliant         | : (50), (80)                                                                                                          |

## ■ Receptacle

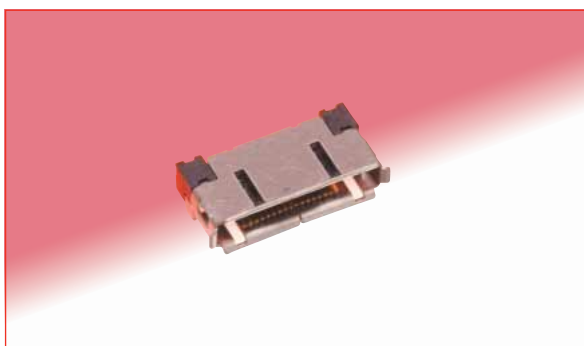
### ● 10 pos.



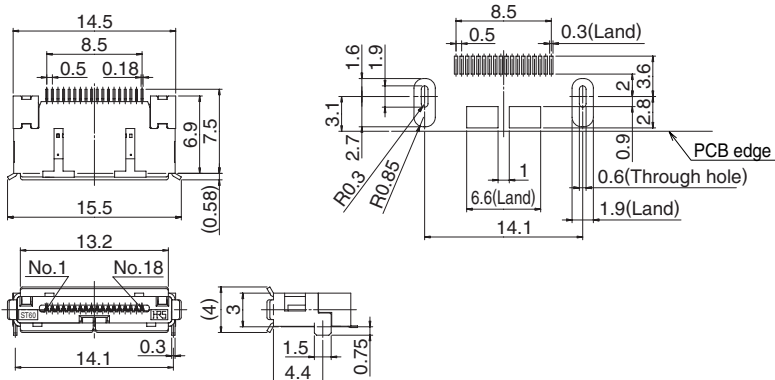
| Part Number | CL No.       | Packaging                            | RoHS |
|-------------|--------------|--------------------------------------|------|
| ST60-10P    | CL241-0022-5 | Reel packaging<br>(1500 pieces/reel) | YES  |



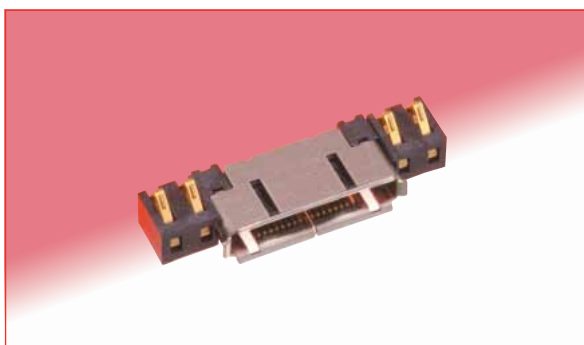
### ● 18 pos.



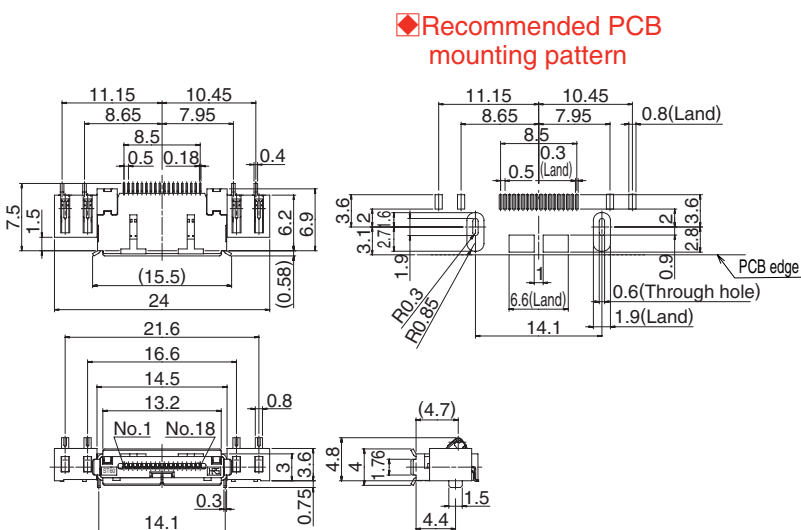
| Part Number  | CL No.          | Packaging                            | RoHS |
|--------------|-----------------|--------------------------------------|------|
| ST60-18P(50) | CL241-0011-9-50 | Reel packaging<br>(1500 pieces/reel) | YES  |



### ● 18 pos. with 4 power contacts

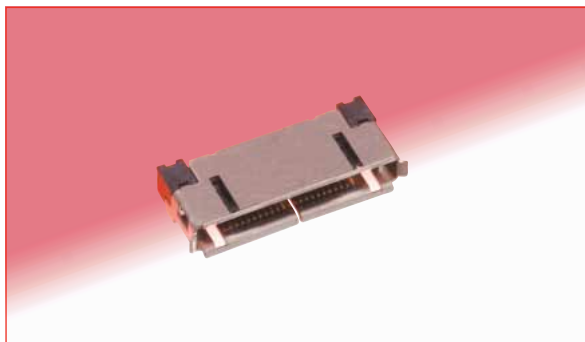


| Part Number    | CL No.          | Packaging                            | RoHS |
|----------------|-----------------|--------------------------------------|------|
| ST60-18P/4(50) | CL241-0005-6-50 | Reel packaging<br>(1000 pieces/reel) | YES  |

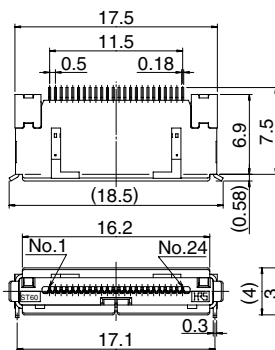


# ST Series Interface Connectors for Miniature, Portable Terminal Devices

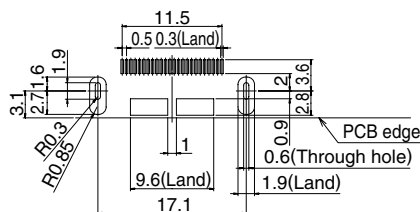
## ● 24 pos.



| Part Number  | CL No.          | Packaging                            | RoHS |
|--------------|-----------------|--------------------------------------|------|
| ST60-24P(50) | CL241-0003-0-50 | Reel packaging<br>(1500 pieces/reel) | YES  |



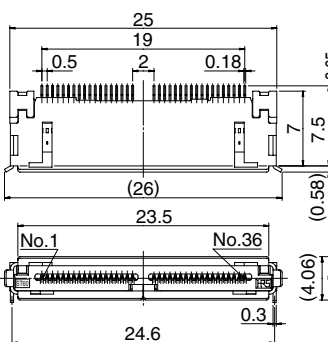
## ◆ Recommended PCB mounting pattern



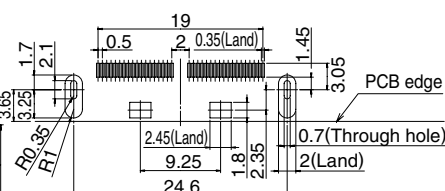
## ● 36 pos.



| Part Number | CL No.       | Packaging                            | RoHS |
|-------------|--------------|--------------------------------------|------|
| ST60-36P    | CL241-0033-1 | Reel packaging<br>(1500 pieces/reel) | YES  |



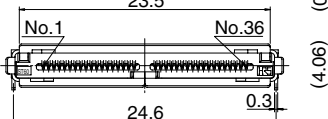
## ◆ Recommended PCB mounting pattern



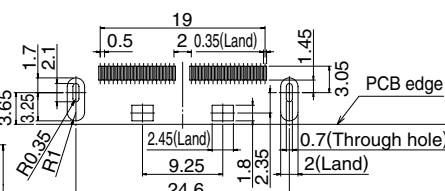
## ● 36 pos. reverse type



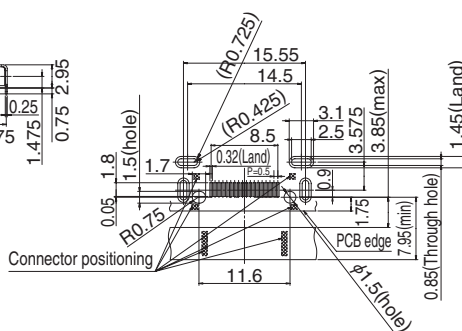
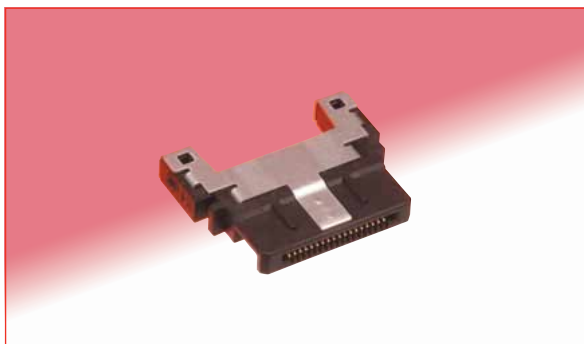
| Part Number | CL No.       | Packaging                            | RoHS |
|-------------|--------------|--------------------------------------|------|
| ST60-36PR   | CL241-0036-0 | Reel packaging<br>(1500 pieces/reel) | YES  |



## ◆ Recommended PCB mounting pattern

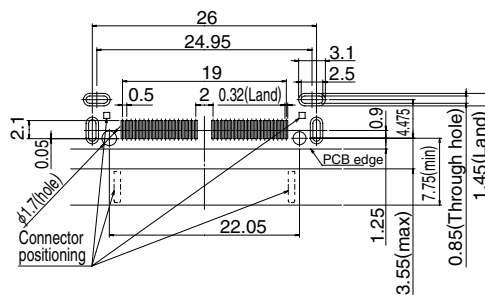


- 18 pos.

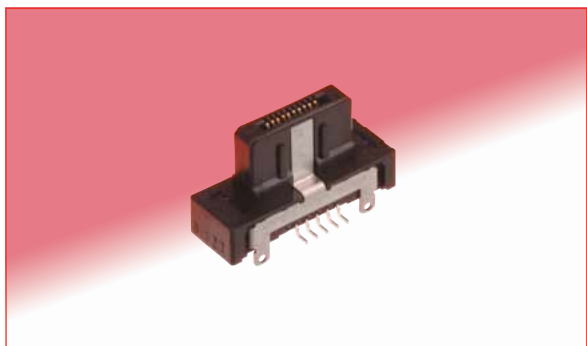


The technical drawings show the following dimensions:

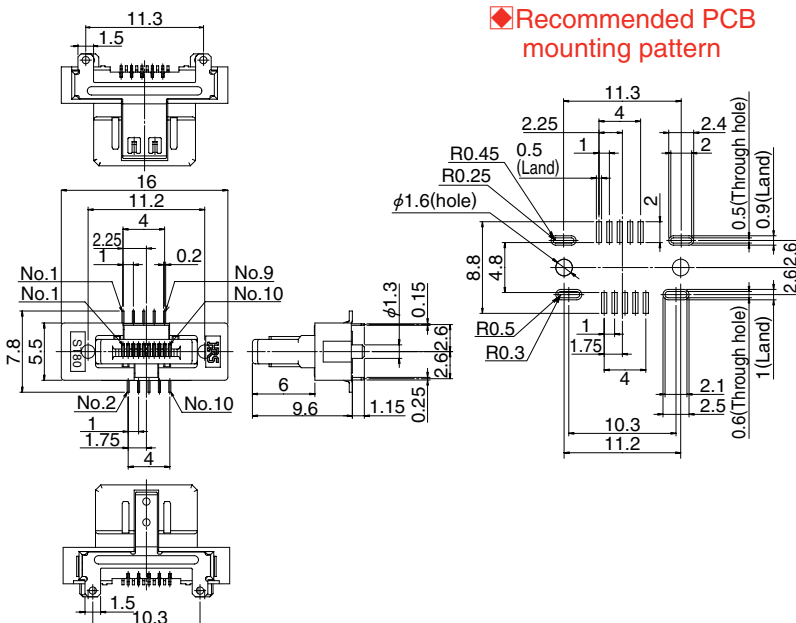
- Top View:** Overall width 27.5, inner width 24.25.
- Side View (Left):** Total length 26, mounting hole diameter No.36, central hole diameter No.1, distance between holes 22.05, hole offset 0.25, and total height 1.375.
- Side View (Right):** Mounting hole diameter 1.6, distance from edge to hole center 4.475, hole diameter 0.25, and distance from hole center to end 1.475.
- Bottom View:** Total width 24.95, mounting hole diameter 0.15, distance between holes 19, hole offset 0.5, and overall height 9.05 (13.65).
- Detail View:** Chamfer angle  $\phi 1.3$ , hole diameter 0.9, and distance from edge to hole center 1.4.



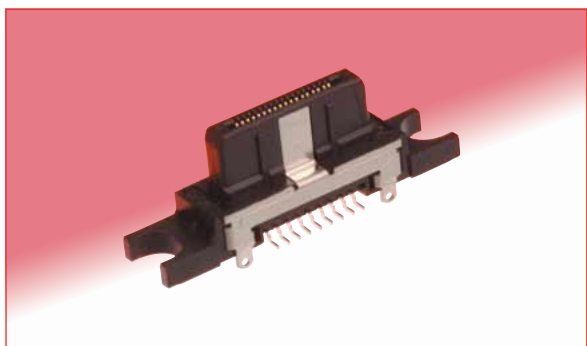
- 10 pos.



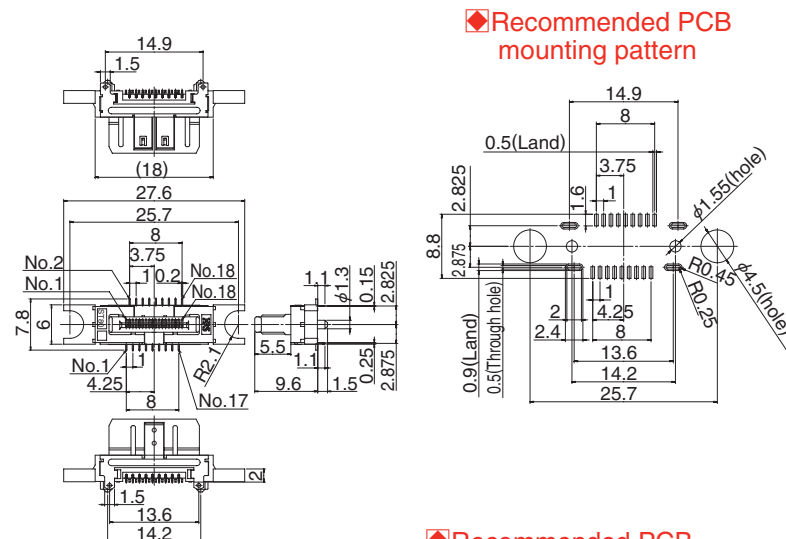
| Part Number | CL No.       | Packaging                           | RoHS |
|-------------|--------------|-------------------------------------|------|
| ST80X-10S   | CL241-0030-3 | Reel packaging<br>(400 pieces/reel) | YES  |



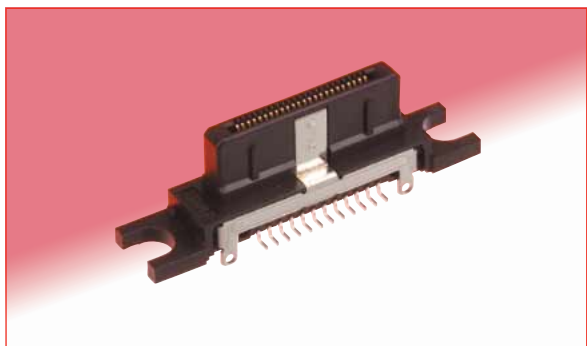
● 18 pos.



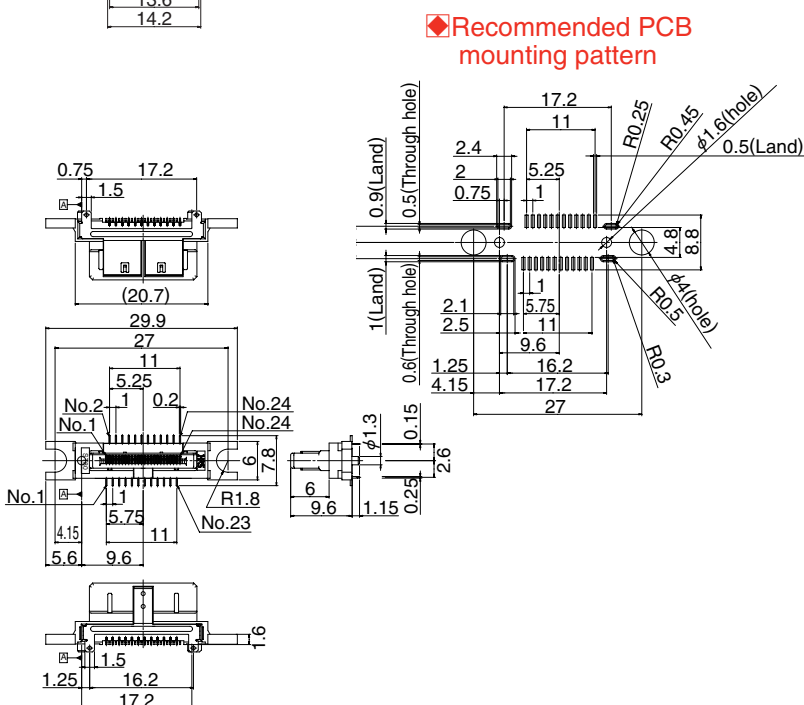
| Part Number   | CL No.          | Packaging                           | RoHS |
|---------------|-----------------|-------------------------------------|------|
| ST80X-18S(50) | CL241-0020-0-50 | Reel packaging<br>(400 pieces/reel) | YES  |



● 24 pos.



| Part Number   | CL No.          | Packaging                           | RoHS |
|---------------|-----------------|-------------------------------------|------|
| ST80X-24S(50) | CL241-0037-2-50 | Reel packaging<br>(400 pieces/reel) | YES  |

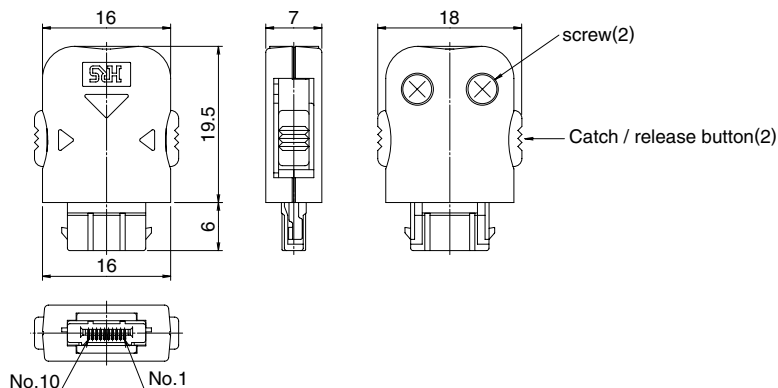


## ■ Plug

- 10 pos. (Non-shielded type, for 4mm max. cable diameter)



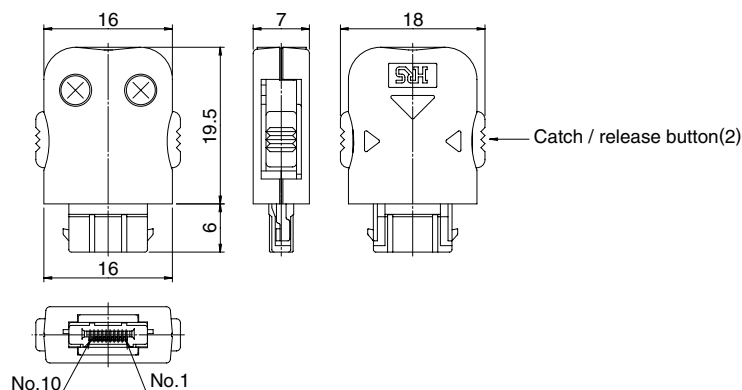
| Part Number     | CL No.          | RoHS |
|-----------------|-----------------|------|
| ST40-10S-CV(80) | CL241-0021-2-80 | YES  |



- 10 pos. (Reverse, non-shielded type, for 4mm max. cable diameter)



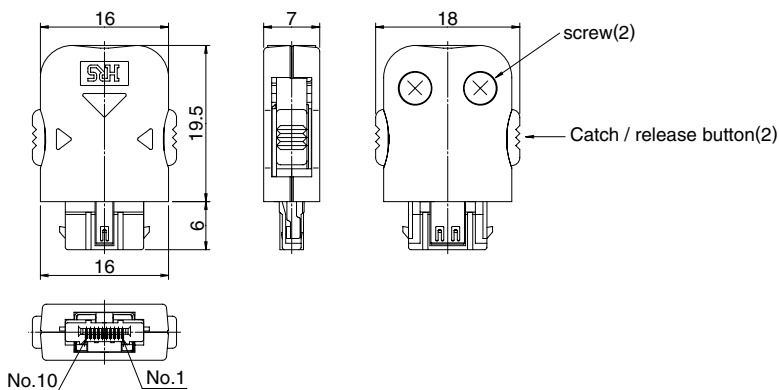
| Part Number      | CL No.          | RoHS |
|------------------|-----------------|------|
| ST40-10S-CVR(80) | CL241-0040-7-80 | YES  |



- 10 pos. (Shielded type, for 4mm max. cable diameter)



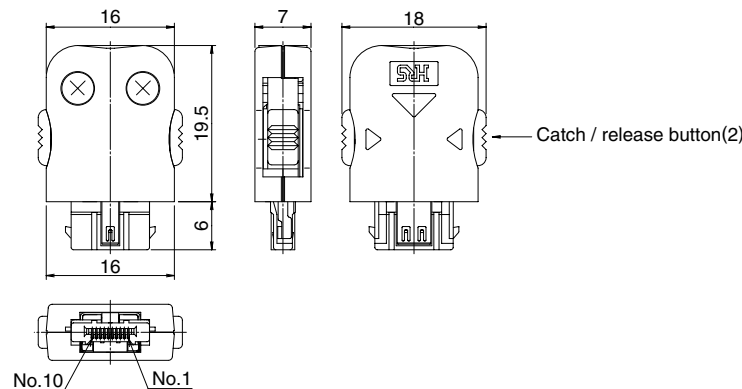
| Part Number      | CL No.          | RoHS |
|------------------|-----------------|------|
| ST40X-10S-CV(80) | CL241-0041-0-80 | YES  |



- 10 pos. (Reverse, shielded type, for 4mm max. cable diameter)



| Part Number       | CL No.          | RoHS |
|-------------------|-----------------|------|
| ST40X-10S-CVR(80) | CL241-0029-4-80 | YES  |

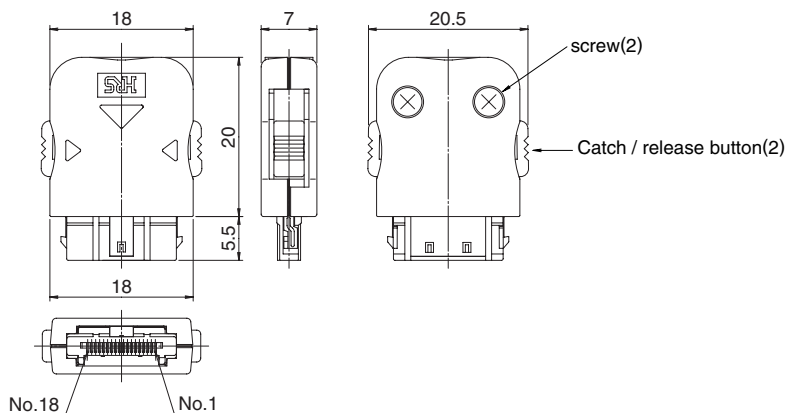


## ST Series Interface Connectors for Miniature, Portable Terminal Devices

### ● 18 pos. (Shielded type, for 4mm max. cable diameter)



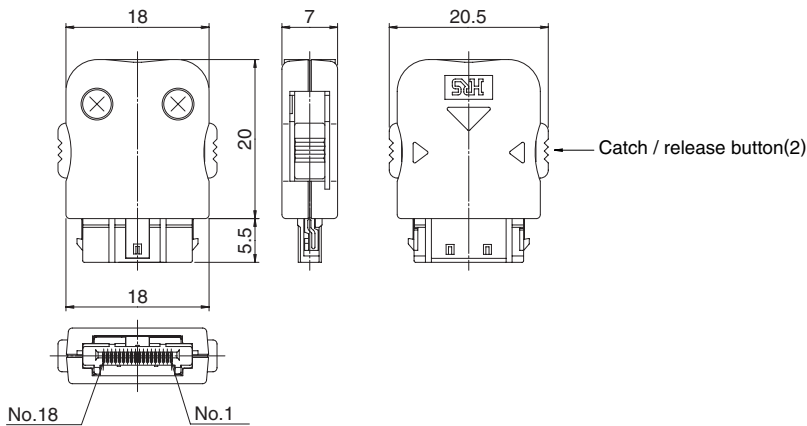
| Part Number      | CL No.          | RoHS |
|------------------|-----------------|------|
| ST40X-18S-CV(80) | CL241-0012-1-80 | YES  |



### ● 18 pos. (Reverse, shielded type, for 4mm max. cable diameter)



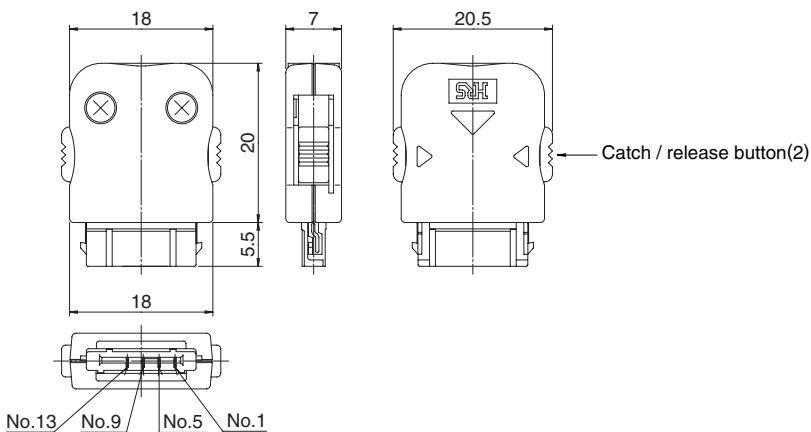
| Part Number       | CL No.          | RoHS |
|-------------------|-----------------|------|
| ST40X-18S-CVR(80) | CL241-0016-2-80 | YES  |



### ● 4 pos. (For opening size as 18 pos., reverse, non-shielded, for 4mm max. cable diameter)



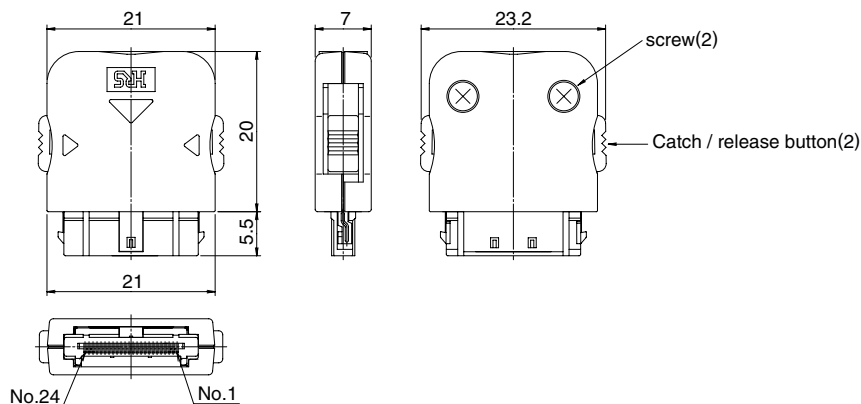
| Part Number         | CL No.          | RoHS |
|---------------------|-----------------|------|
| ST40-18(4)S-CVR(80) | CL241-0032-9-80 | YES  |



### ● 24 pos. (Shielded type, for 4mm max. cable diameter)



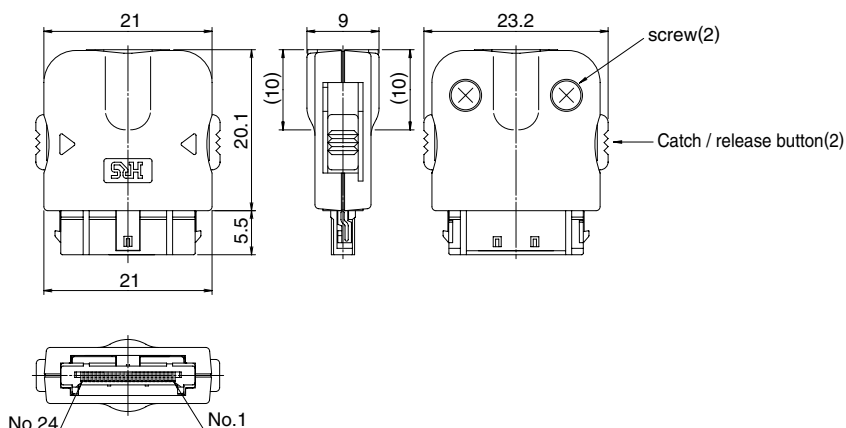
| Part Number      | CL No.          | RoHS |
|------------------|-----------------|------|
| ST40X-24S-CV(80) | CL241-0004-3-80 | YES  |



● 24 pos. (Shielded type, for 5.8mm max. cable diameter)



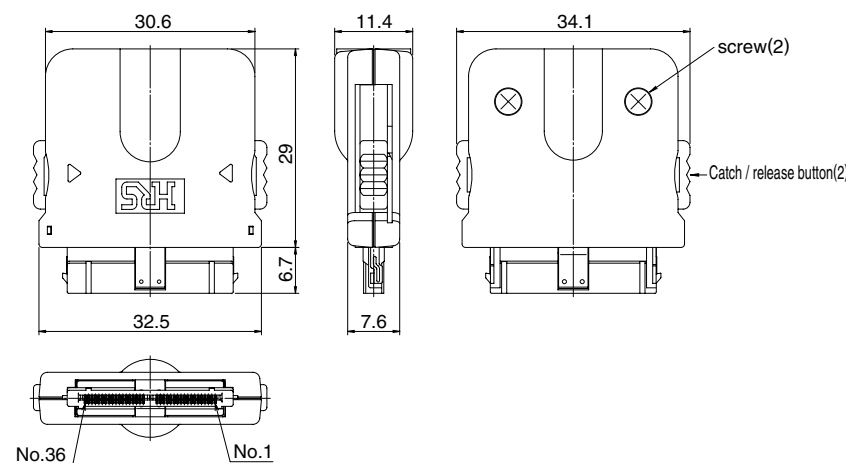
| Part Number       | CL No.          | RoHS |
|-------------------|-----------------|------|
| ST40X-24S-CV1(80) | CL241-0023-8-80 | YES  |



● 36 pos. (Shielded type, for 7mm max. cable diameter)



| Part Number       | CL No.          | RoHS |
|-------------------|-----------------|------|
| ST40X-36S-CV1(80) | CL241-0034-4-80 | YES  |

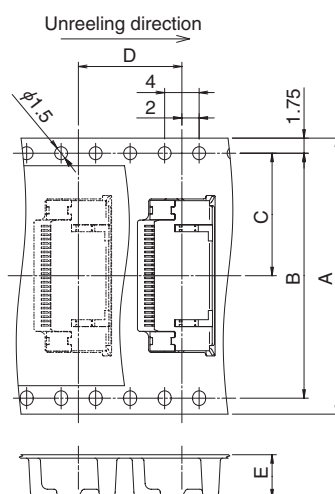


Note: Plug assemblies will require additional components. Contact Hirose Electric representative for detailed descriptions and installation instructions.

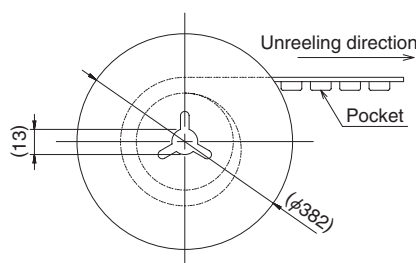
## ST Series Interface Connectors for Miniature, Portable Terminal Devices

### ◆ Packaging Specification

#### ● Embossed Carrier Tape Dimensions



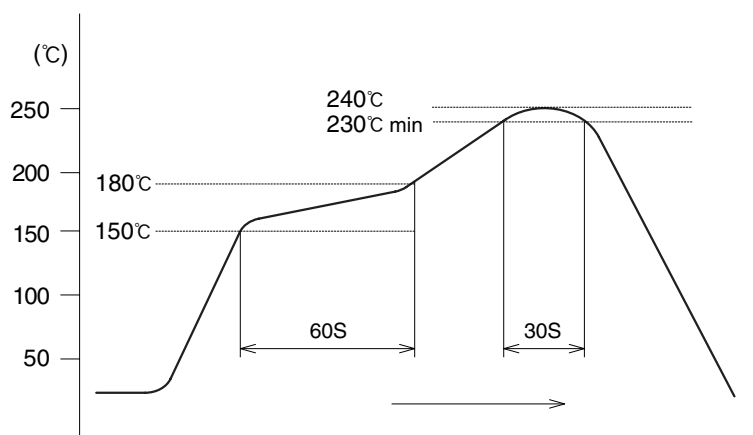
#### ● Reel Dimensions



#### ● Reel Dimensions

| Part Number    | A  | B    | C    | D  | E    | pcs. / reel |
|----------------|----|------|------|----|------|-------------|
| ST60-10P       | 24 | —    | 11.5 | 12 | 5    | 1500        |
| ST60-18P(50)   | 24 | —    | 11.5 | 12 | 5    | 1500        |
| ST60-24P(50)   | 32 | 28.4 | 14.2 | 12 | 5    | 1500        |
| ST60-36P       | 44 | 40.4 | 20.2 | 12 | 5    | 1500        |
| ST60-18P/4(50) | 44 | 40.4 | 20.2 | 12 | 6.2  | 1000        |
| ST60-36PR      | 44 | 40.4 | 20.2 | 12 | 5    | 1500        |
| ST80X-10S      | 24 | —    | 11.5 | 16 | 12.2 | 400         |
| ST80X-18S(50)  | 44 | 40.4 | 20.2 | 16 | 12.7 | 400         |
| ST80X-24S(50)  | 44 | 40.4 | 20.2 | 16 | 12.7 | 400         |
| ST60X-18S      | 32 | 28.4 | 14.2 | 20 | 4.95 | 900         |
| ST60X-36S      | 44 | 40.4 | 20.2 | 20 | 4.85 | 900         |

## ◆ Recommended Temperature Profile (Lead-free soldering compound)



HRS test conditions

Solder composition: Paste, 96.5%Sn/3.0%Ag/0.5%Cu

Test board: Glass epoxy 35mm×35mm×0.8mm thick

The temperature profiles are based on the above conditions. In individual applications the actual temperature may vary, depending on solder paste type, volume/thickness and board size/thickness. Consult your solder paste and equipment manufacturer for specific recommendations.



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

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