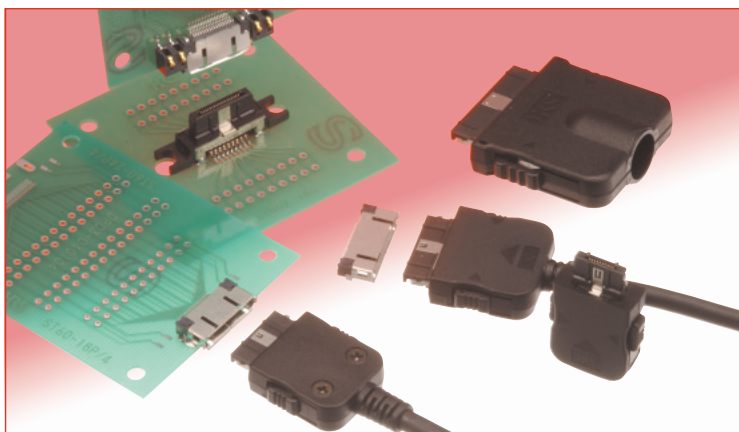


Interface Connectors for Miniature, Portable Terminal Devices

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.

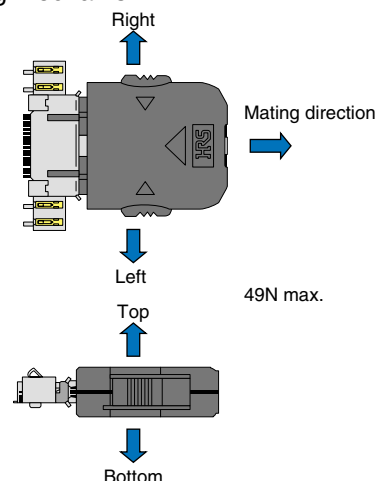
5. Wide variety of contact positions and mounting styles

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

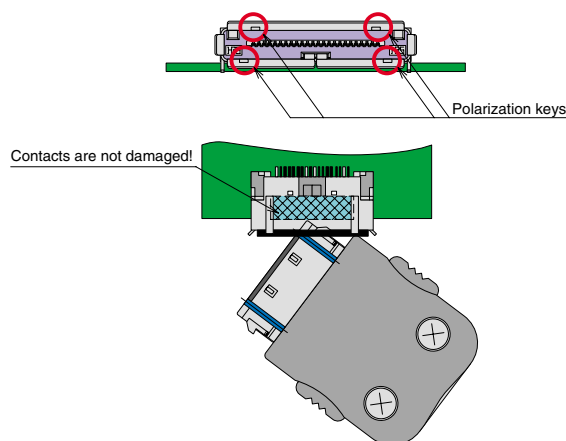
Applications

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.

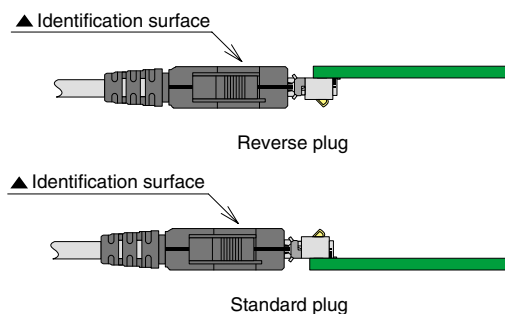
Strong locking mechanism



Prevention against reversed or angle insertion



Plug variations



■ 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. Contact resistance: 100m Ω max. | Acceleration of 490 m/s ² , 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis. |
| 7. Temperature cycle | Contact resistance: 100m Ω max. Insulation resistance: 100M Ω min. | Temperature : -55°C → +5°C to +35°C → +85°C → +5°C to +35°C Time (Minutes) : 30 → 5 → 30 → 5 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

① ② ④ ⑤ ⑥

● Plugs

ST 40 X - 18 S - CVR

① ② ③ ④ ⑤ ⑦

● Plug - Cradle type

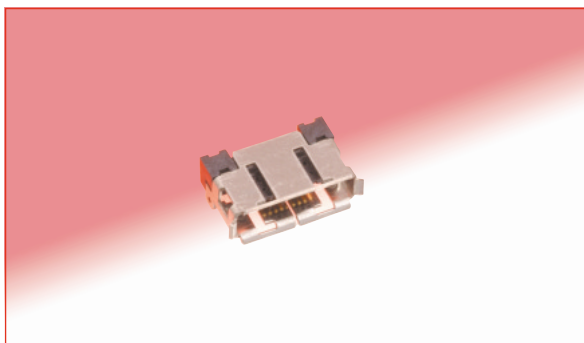
ST 80 X - 18 S

① ② ③ ④ ⑤

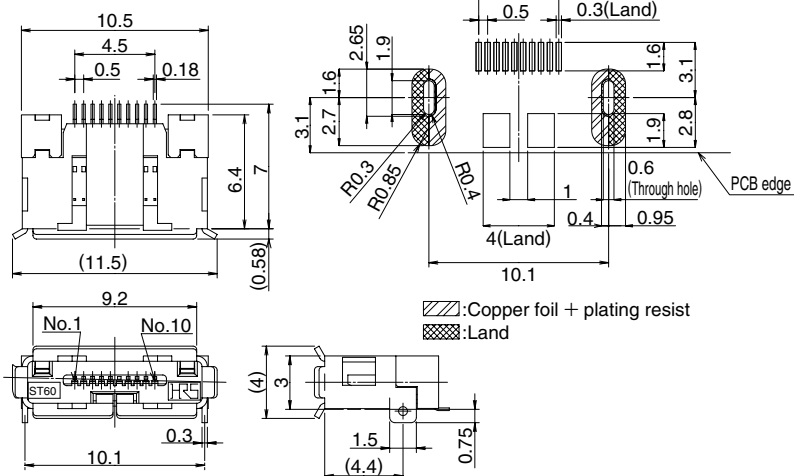
| | |
|-----------------------|---|
| ① Series name | : ST |
| ② Termination type | 60 : Right angle SMT 40 : Solder type 80 : Cradle, vertical, SMT |
| ③ Shield | X : With shield Blank : Without shield |
| ④ Number of positions | |
| ⑤ Contact type | P : Male contact (Receptacle) S : Female contact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

■ Receptacle

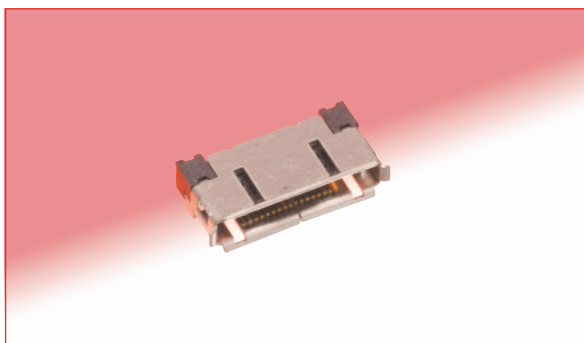
● 10 pos.



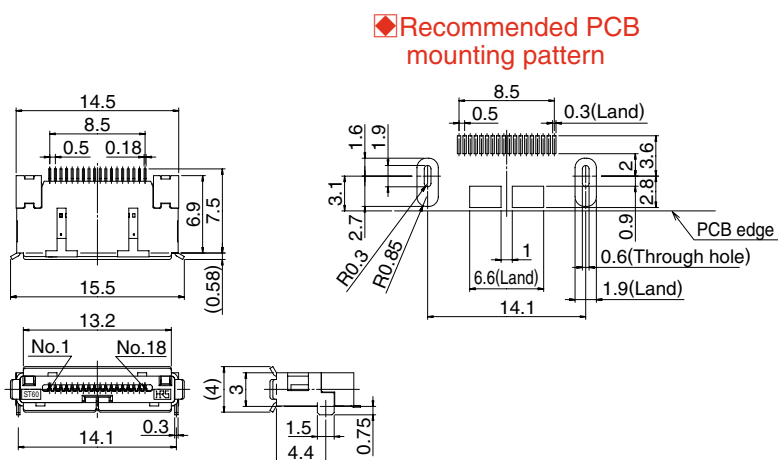
| Part Number | CL No. | Packaging |
|-------------|--------------|-----------------------------------|
| ST60-10P | CL241-0022-5 | Reel packaging (1500 pieces/reel) |



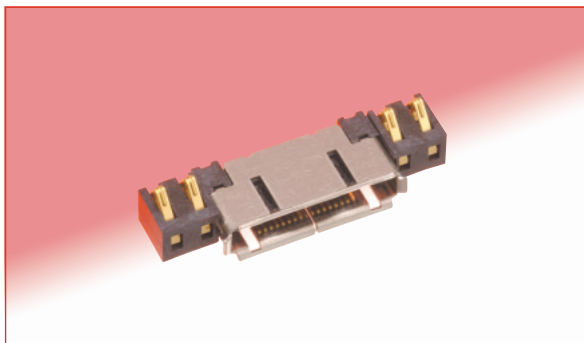
● 18 pos.



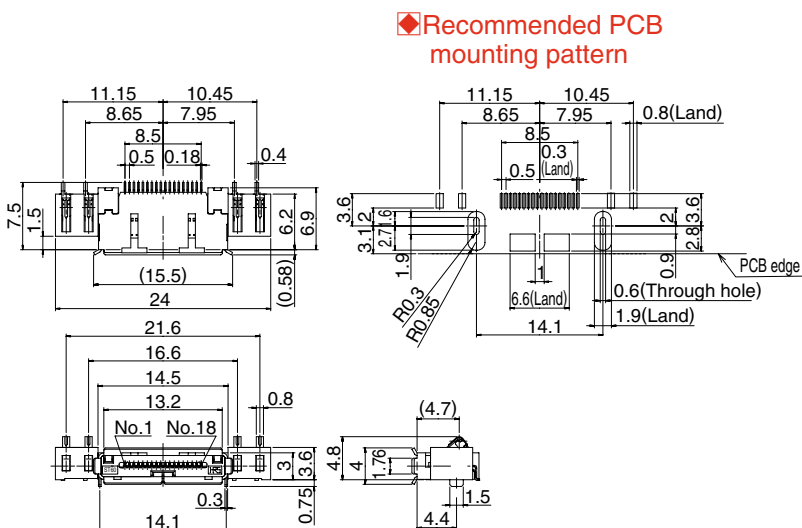
| Part Number | CL No. | Packaging |
|-------------|--------------|-----------------------------------|
| ST60-18P | CL241-0011-9 | Reel packaging (1500 pieces/reel) |



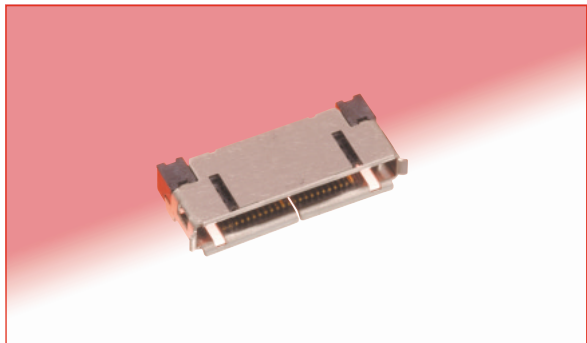
● 18 pos. with 4 power contacts



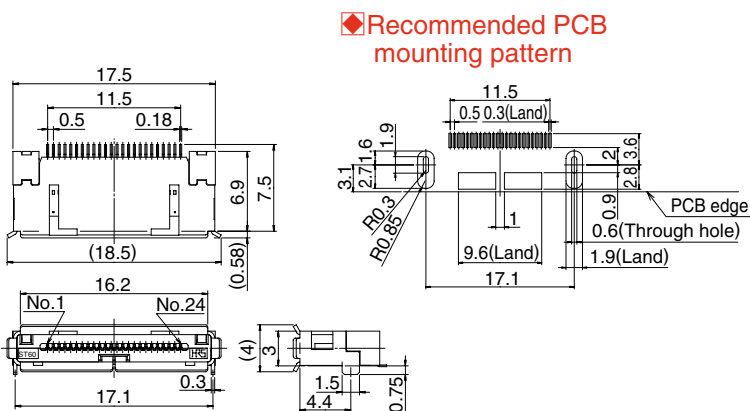
| Part Number | CL No. | Packaging |
|-------------|--------------|-----------------------------------|
| ST60-18P/4 | CL241-0005-6 | Reel packaging (1000 pieces/reel) |



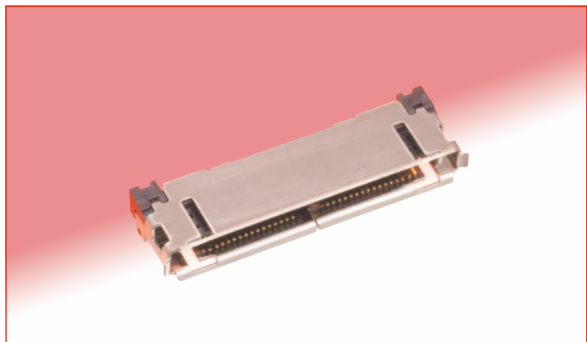
● 24 pos.



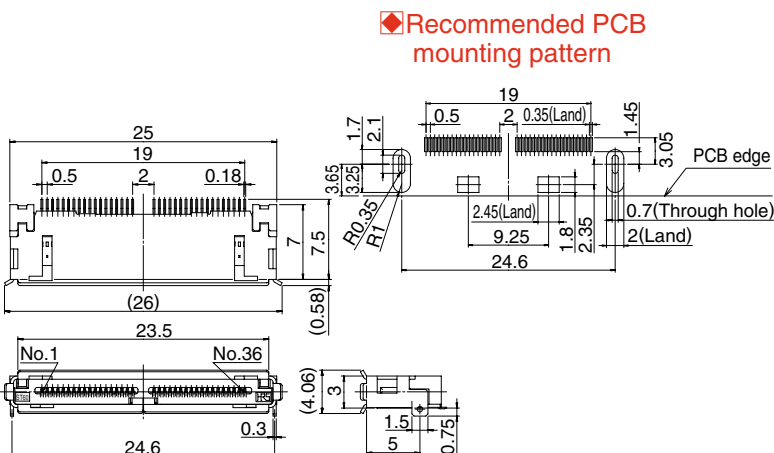
| Part Number | CL No. | Packaging |
|-------------|--------------|-----------------------------------|
| ST60-24P | CL241-0003-0 | Reel packaging (1500 pieces/reel) |



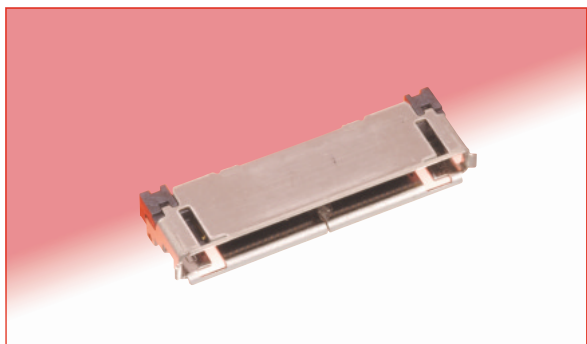
● 36 pos.



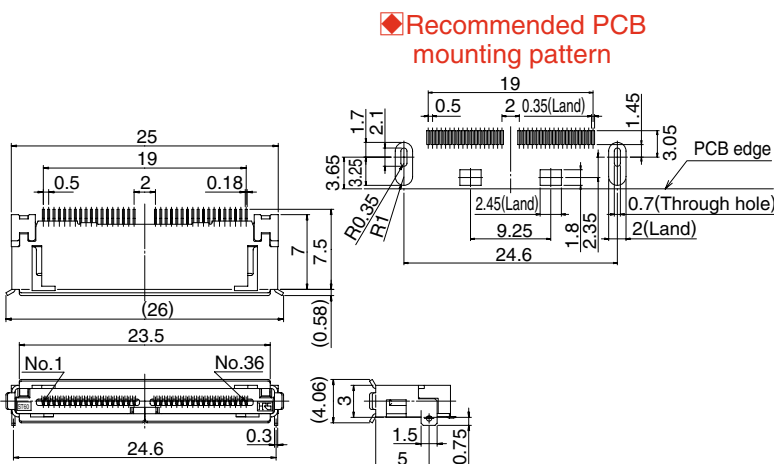
| Part Number | CL No. | Packaging |
|-------------|--------------|-----------------------------------|
| ST60-36P | CL241-0033-1 | Reel packaging (1500 pieces/reel) |



● 36 pos. reverse type

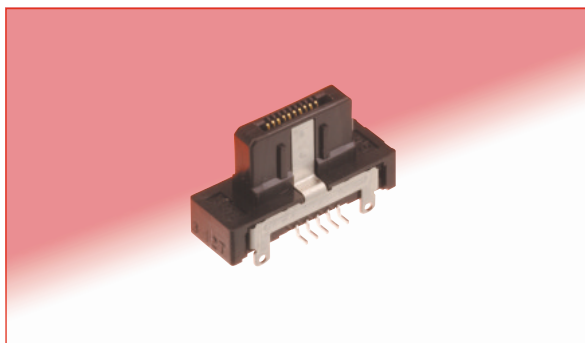


| Part Number | CL No. | Packaging |
|-------------|--------------|-----------------------------------|
| ST60-36PR | CL241-0036-0 | Reel packaging (1500 pieces/reel) |

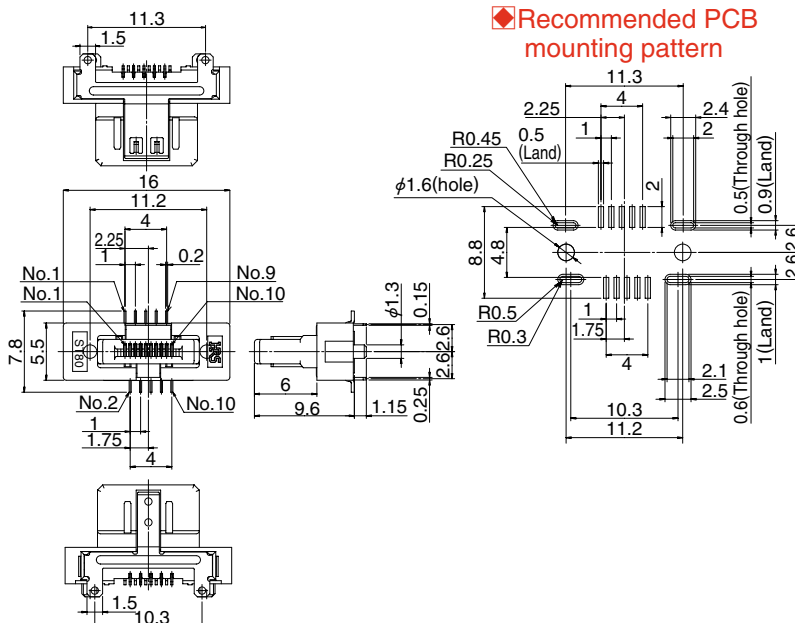


■ Plug – cradle type (Vertical)

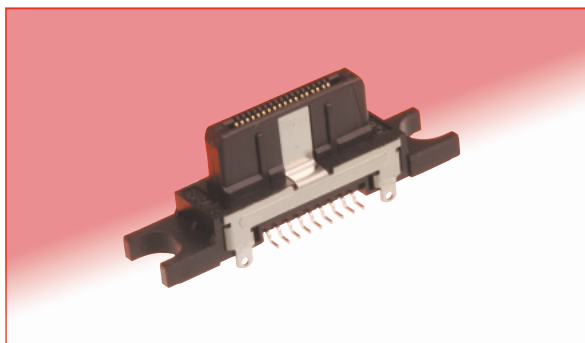
- 10 pos.



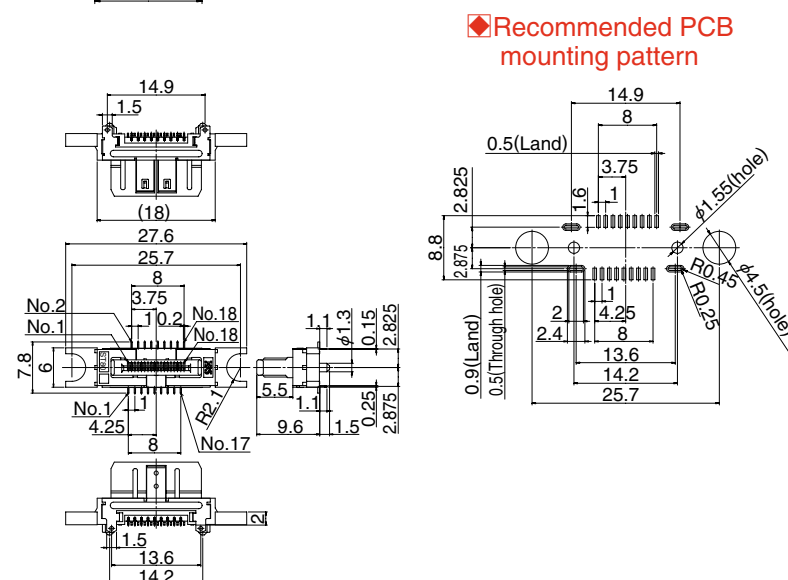
| Part Number | CL No. | Packaging |
|-------------|--------------|----------------------------------|
| ST80X-10S | CL241-0030-3 | Reel packaging (400 pieces/reel) |



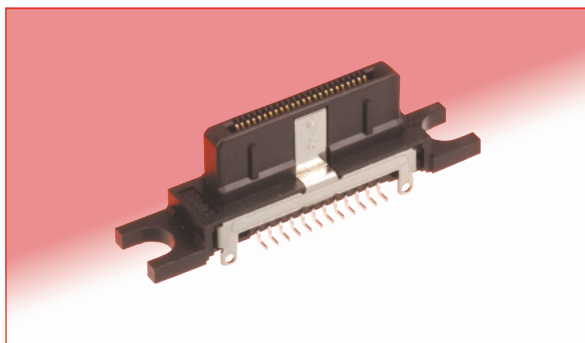
- 18 pos.



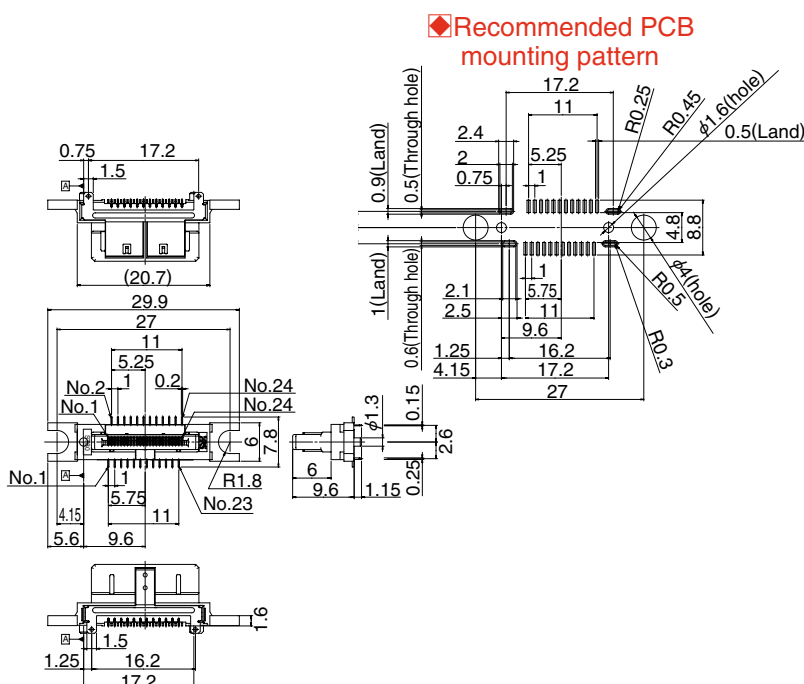
| Part Number | CL No. | Packaging |
|-------------|--------------|----------------------------------|
| ST80X-18S | CL241-0020-0 | Reel packaging (400 pieces/reel) |



- 24 pos.

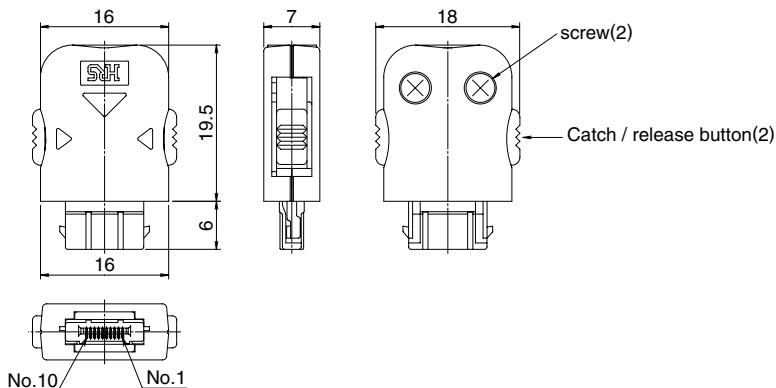


| Part Number | CL No. | Packaging |
|-------------|--------------|----------------------------------|
| ST80X-24S | CL241-0037-2 | Reel packaging (400 pieces/reel) |



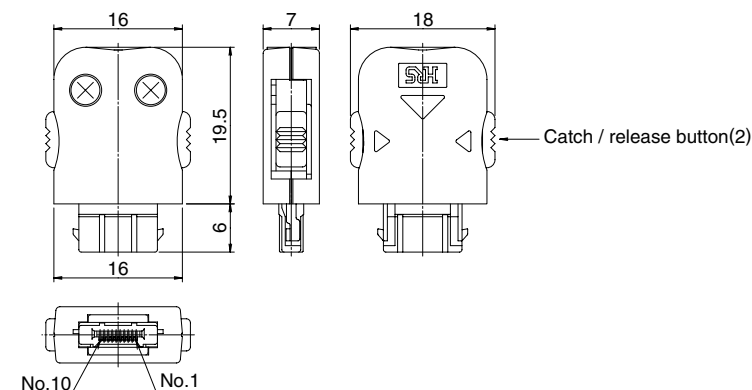
■ Plug

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



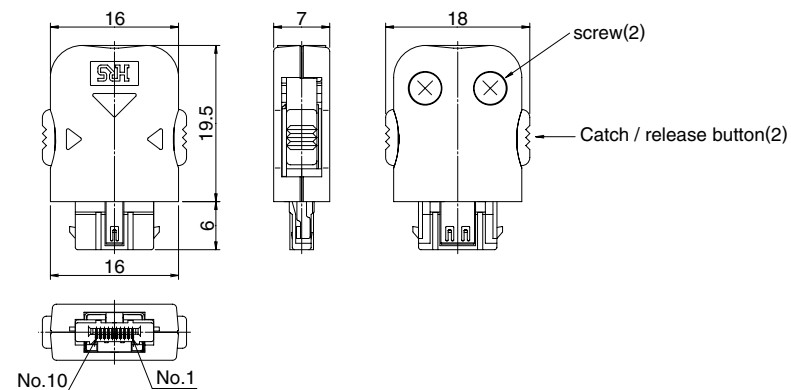
| Part Number | CL No. |
|-------------|--------------|
| ST40-10S-CV | CL241-0021-2 |

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



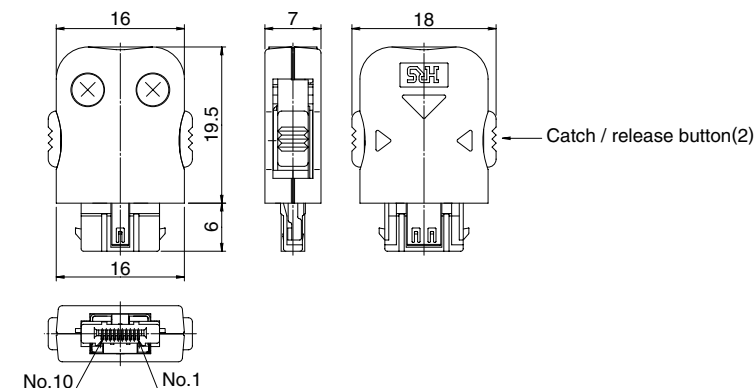
| Part Number | CL No. |
|--------------|--------------|
| ST40-10S-CVR | CL241-0040-7 |

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



| Part Number | CL No. |
|--------------|--------------|
| ST40X-10S-CV | CL241-0041-0 |

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

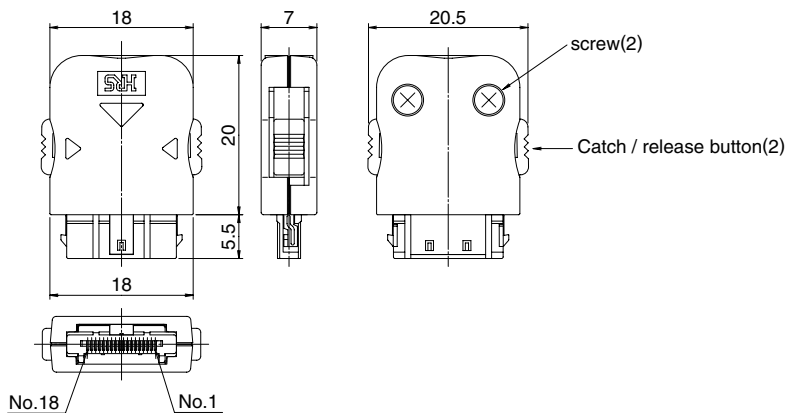


| Part Number | CL No. |
|---------------|--------------|
| ST40X-10S-CVR | CL241-0029-4 |

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



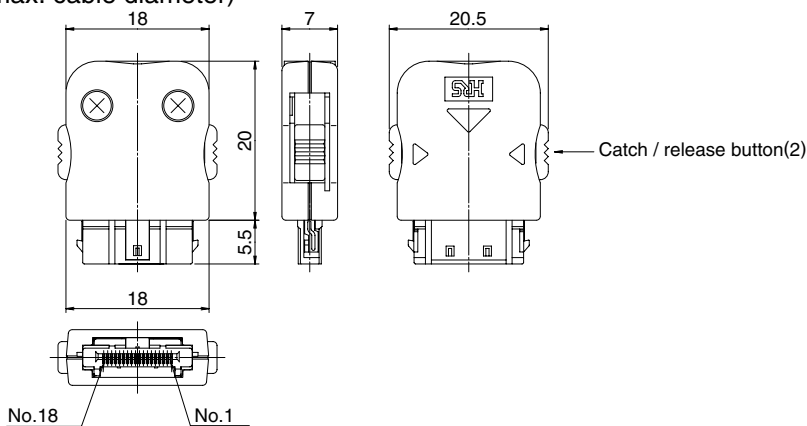
| Part Number | CL No. |
|--------------|--------------|
| ST40X-18S-CV | CL241-0012-1 |



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



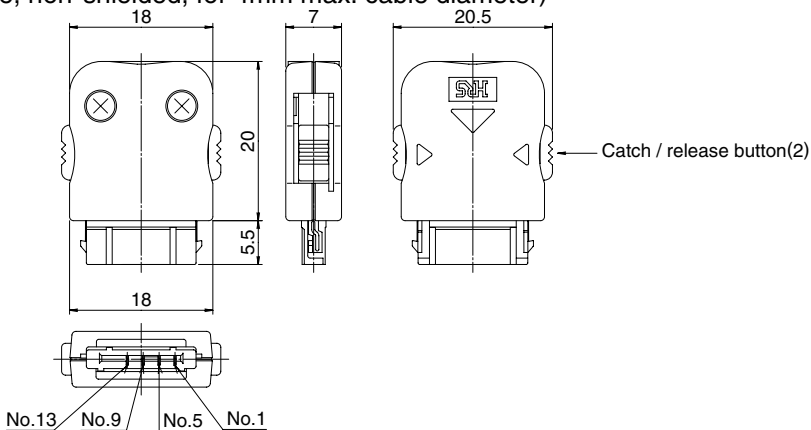
| Part Number | CL No. |
|---------------|--------------|
| ST40X-18S-CVR | CL241-0016-2 |



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



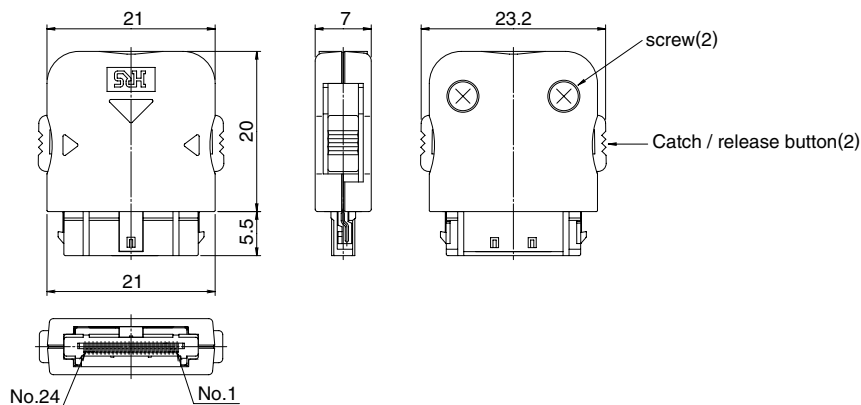
| Part Number | CL No. |
|-----------------|--------------|
| ST40-18(4)S-CVR | CL241-0032-9 |



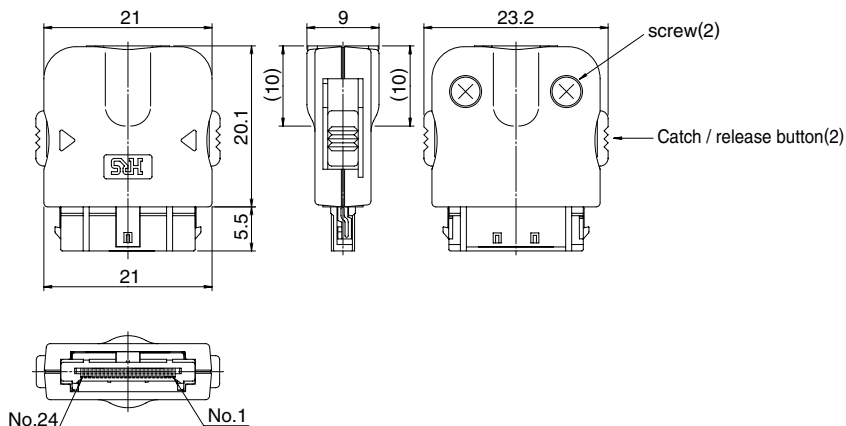
● 24 pos. (Shielded type, for 4mm max. cable diameter)



| Part Number | CL No. |
|--------------|--------------|
| ST40X-24S-CV | CL241-0004-3 |

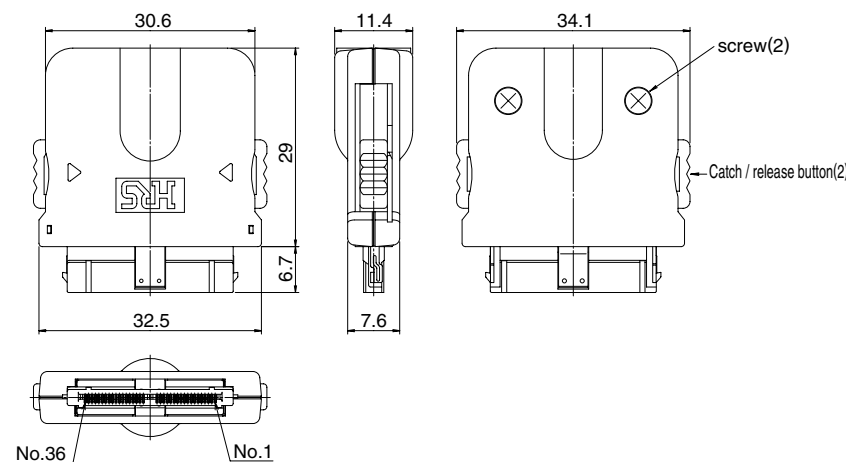


● 24 pos. (Shielded type, for 5.8mm max. cable diameter)



| Part Number | CL No. |
|---------------|--------------|
| ST40X-24S-CV1 | CL241-0023-8 |

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

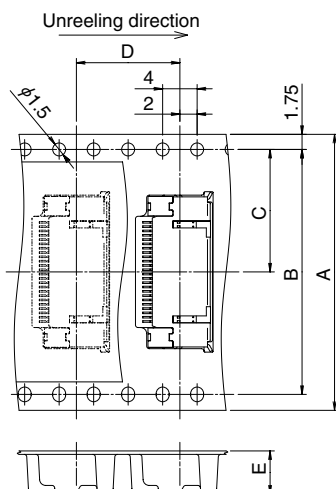


| Part Number | CL No. |
|--------------|--------------|
| ST40X-36S-CV | CL241-0034-4 |

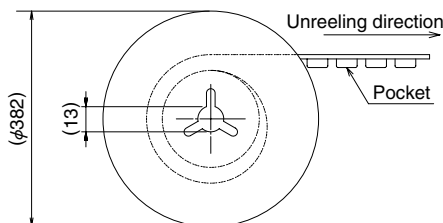
Note: Plug assemblies will require additional components. Contact Hirose Electric representative for detailed descriptions and installation instructions.

◆ Packaging Specification

● Embossed Carrier Tape Dimensions



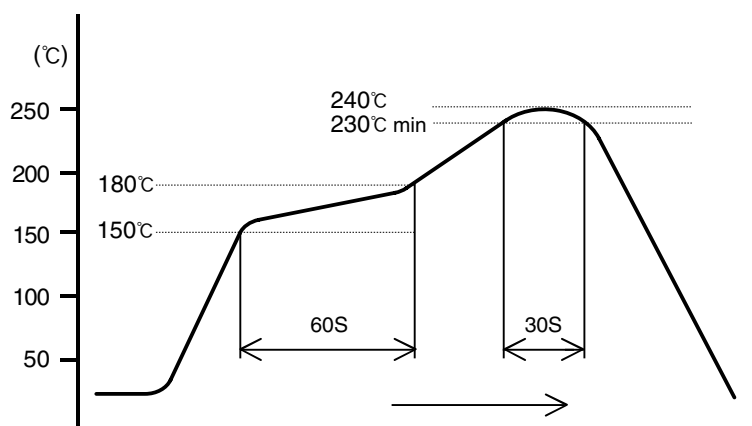
● Reel Dimensions



● Reel Dimensions

| Part Number | A | B | C | D | E | pcs. / reel |
|-------------|----|------|------|----|------|-------------|
| ST60-10P | 24 | — | 11.5 | 12 | 5 | 1500 |
| ST60-18P | 24 | — | 11.5 | 12 | 5 | 1500 |
| ST60-24P | 32 | 28.4 | 14.2 | 12 | 5 | 1500 |
| ST60-36P | 44 | 40.4 | 20.2 | 12 | 5 | 1500 |
| ST60-18P/4 | 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 | 44 | 40.4 | 20.2 | 16 | 12.7 | 400 |
| ST80X-24S | 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.