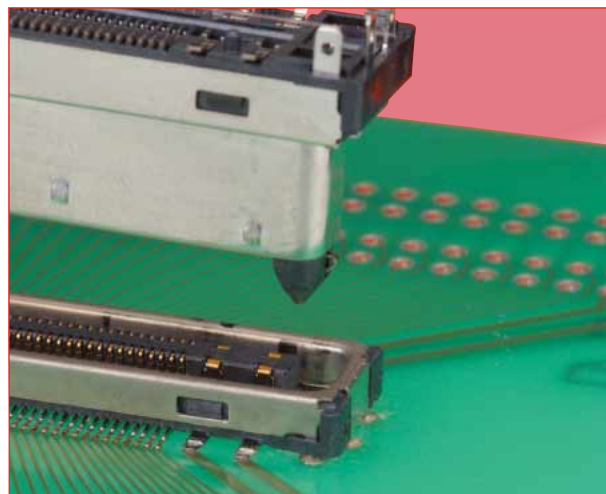


# 0.6mm Pitch, Docking Station Connectors

## EX80 Series



### ■ Features

#### 1. Secure electrical and mechanical connection

The signal contacts wipe of 1.5mm and built-in self-alignment assures reliable connection between plug and receptacle.

#### 2. Sequential mating

Plug design assures correct contact engagement sequence: ground-signal-power.

#### 3. Reliable ground connection

Guide tabs on the metal shell assure correct grounding sequence and high ground connection reliability with the board.

#### 4. High-speed data transfer

Signals of 2.5 G bps can be transferred (PCI express).

#### 5. Prevention of flux wicking

Terminations of the contacts are designed to prevent a possibility of flux wicking into the contact areas.

#### 6. Self alignment

The connectors will self-align in X/Y axis within 1.2mm (0.7mm for receptacles with self-opening shutters)

#### 7. Dedicated power supply contacts

High electrical conductivity dedicated power contacts are rated 3 A.

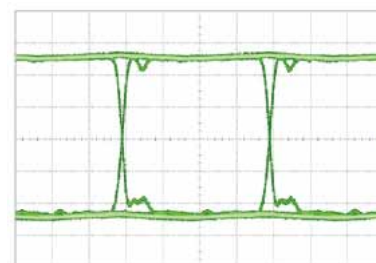
#### 8. High durability

Bellows contact configuration assures reliable electrical and mechanical connection for 5,000 cycles (mating/un-mating).

### ■ Applications

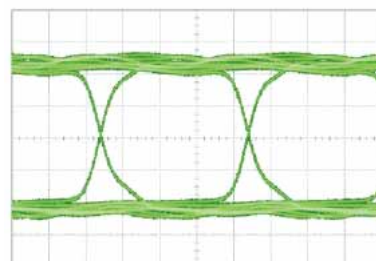
Docking stations for notebook computers and other applications requiring high reliability, high data transfer sequential mating connections.

#### Input



Sig Rate : 2.5Gbps  
Sig Level : 0.5Vp-p

#### Output



X=100ps/div  
Y=100mV/div

Product specifications

|                          |                                                         |                    |      |
|--------------------------|---------------------------------------------------------|--------------------|------|
| Ratings                  | Storage temperature range                               | -55℃ to +85℃       |      |
|                          | Voltage rating                                          | 125V AC            |      |
|                          | Current rating                                          | Signal contact     | 0.5A |
|                          |                                                         | Power contact      | 3A   |
| Characteristic           | Specification                                           | Conditions         |      |
| 1. Contact resistance    | Signal contact : 70mΩ max.<br>Power contact : 40mΩ max. | 100m A             |      |
| 2. Insulation resistance | 300MΩ min.                                              | 250V DC            |      |
| 3. Withstanding voltage  | No flashover or insulation breakdown.                   | 350V AC / 1 minute |      |

Materials / Finish

Receptacles

|           |                 |                       |
|-----------|-----------------|-----------------------|
| Component | Material        | Finish                |
| Contacts  | Copper alloy    | Selective gold plated |
| Insulator | LCP             | _____                 |
| Shell     | Stainless steel | Nickel / Tin plated   |

Plugs

|           |                 |                       |
|-----------|-----------------|-----------------------|
| Component | Material        | Finish                |
| Contacts  | Copper alloy    | Selective gold plated |
| Insulator | LCP             | _____                 |
| Shell     | Stainless steel | Nickel / Tin plated   |

Product Number Structure

Refer to the chart below when determining the product specifications from the product number.  
Please select from the product numbers listed in this catalog when placing orders.

Receptacles

EX 80 - 54(50) S - SH (75)

① ② ③ ④ ⑤ ⑥

Plugs

EX 80 - 54(50) P (70)

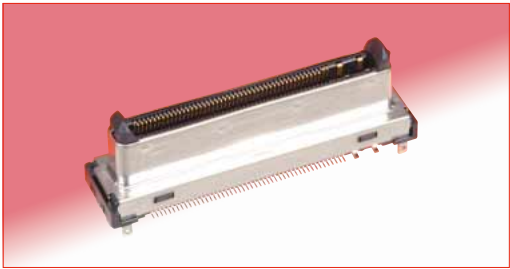
① ② ③ ④ ⑥

|                             |                                                                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ① Series number             | : EX                                                                                                                                                                              |
| ② Model serial indicator 80 | : Vertical SMT type                                                                                                                                                               |
| ③ Number of contacts        | : 54, 100<br>: 54(50)... 50 contacts mounted in a 54-contact size                                                                                                                 |
| ④ Connector types           | S : Receptacle connectors<br>(Shell ground tab length 0.9mm)<br>P : Plug connectors<br>(Shell ground tab length 0.9mm)<br>P1 : Plug connectors<br>(Shell ground tab length 2.2mm) |
| ⑤ Receptacle, with shutter  | SH : Built-in shutters                                                                                                                                                            |
| ⑥ Separate specifications   | : See the Specifications Sheet of each products.                                                                                                                                  |

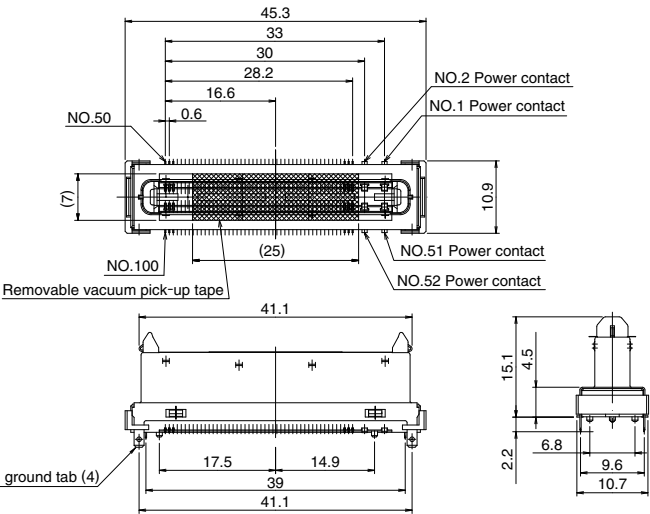
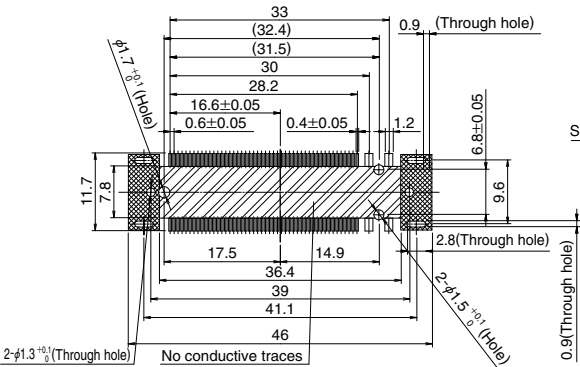
Note: All connectors in this series are designed to be placed on the PCB 1mm min. thick.

Plugs

100 pos.



Recommended PCB mounting pattern (PCB thickness : 1mm min.)

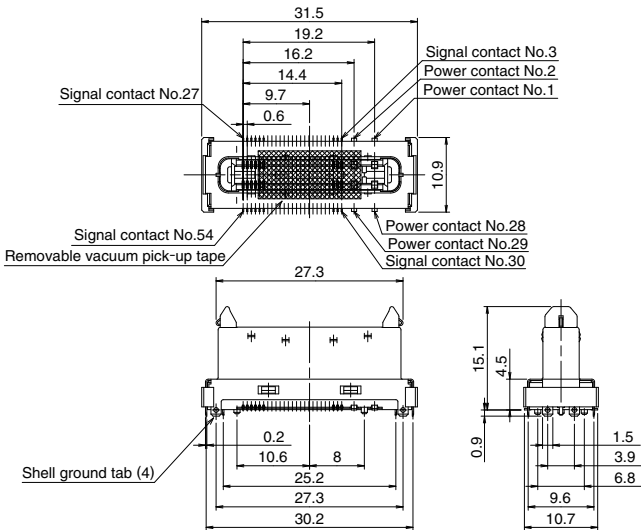
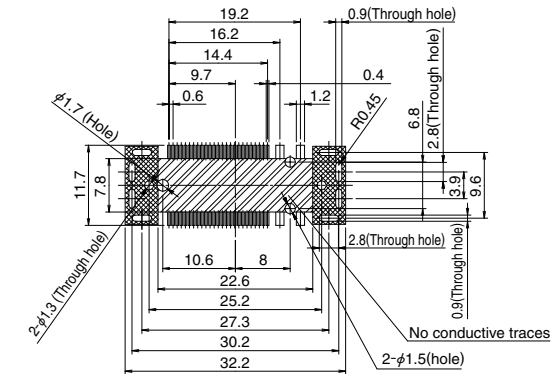


| Part No.       | HRS No.       | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging  | RoHS |
|----------------|---------------|--------------------------------------------|------------------------------------|------------|------|
| EX80-100P1(70) | 232-0598-9 70 | Gold / Gold                                | Nickel / Tin                       | 1 pcs/tray | ○    |

54 pos.



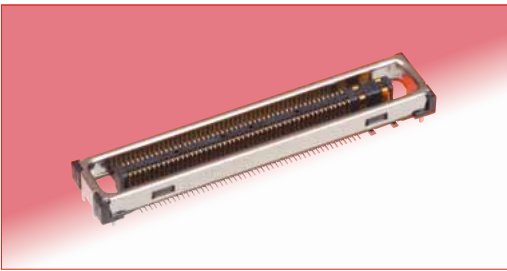
Recommended PCB mounting pattern (PCB thickness : 1mm min.)



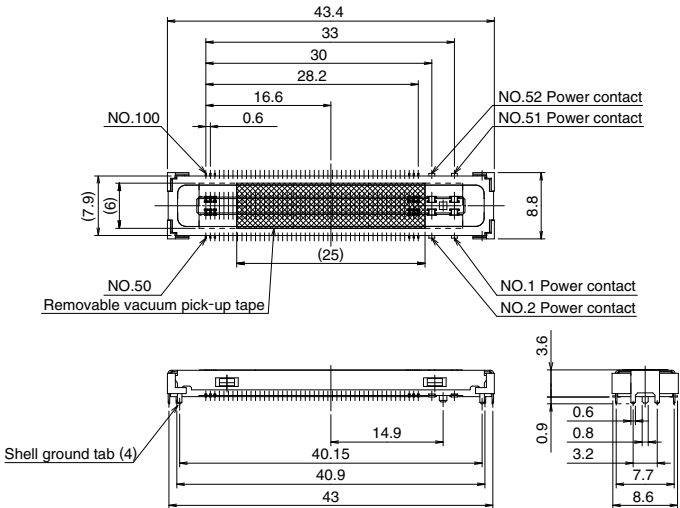
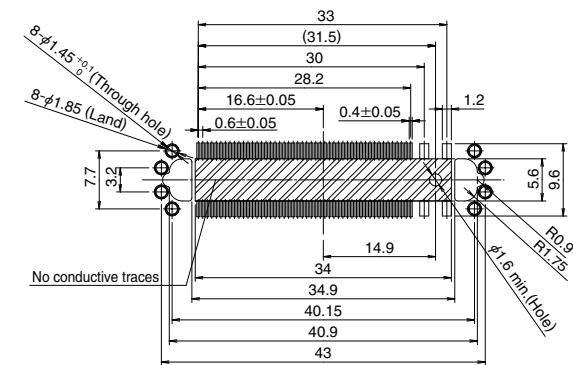
| Part No.      | HRS No.       | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging  | RoHS |
|---------------|---------------|--------------------------------------------|------------------------------------|------------|------|
| EX80-54P (70) | 232-0610-2 70 | Gold / Gold                                | Nickel / Tin                       | 1 pcs/tray | ○    |

Receptacles (Without shutter)

100 pos.

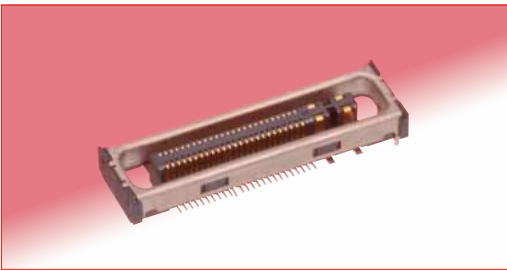


Recommended PCB mounting pattern (PCB thickness : 1mm min.)

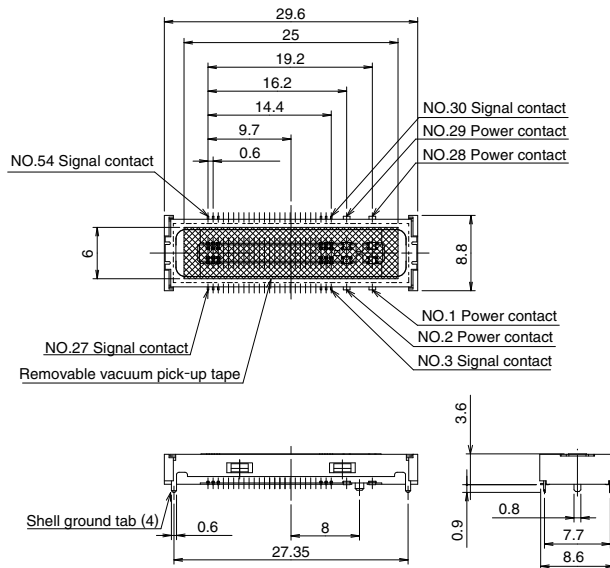
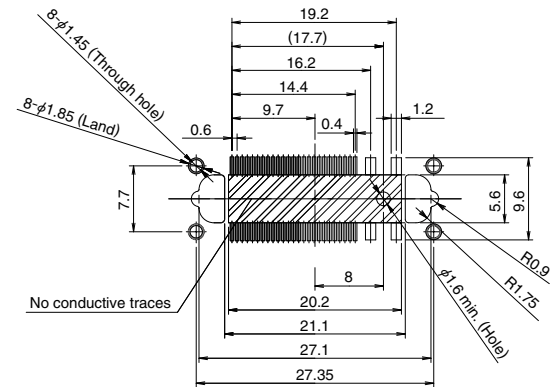


| Part No.      | HRS No.       | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging  | RoHS |
|---------------|---------------|--------------------------------------------|------------------------------------|------------|------|
| EX80-100S(70) | 232-0592-2 70 | Gold / Gold                                | Nickel / Tin                       | 1 pcs/tray | ○    |

54 pos.



Recommended PCB mounting pattern (PCB thickness : 1mm min.)



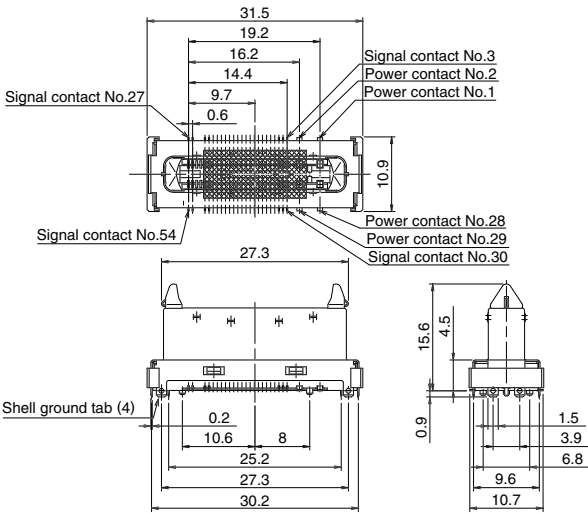
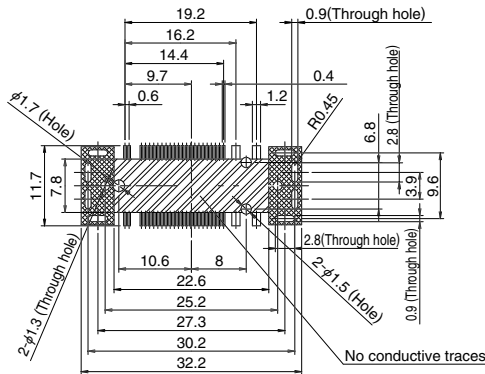
| Part No.     | HRS No.       | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging      | RoHS |
|--------------|---------------|--------------------------------------------|------------------------------------|----------------|------|
| EX80-54S(70) | 232-0609-3 70 | Gold / Gold                                | Nickel / Tin                       | 1,000 pcs/reel | ○    |

■ Plug (For the Receptacle with shutter)

●54 pos.



◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)



| Part No.         | HRS No.       | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging  | RoHS |
|------------------|---------------|--------------------------------------------|------------------------------------|------------|------|
| EX80-54(50)P(70) | 232-0607-8 70 | Gold / Gold                                | Nickel / Tin                       | 1 pcs/tray | ○    |

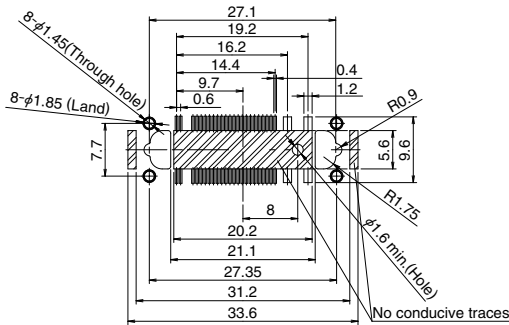
Note : The design of the EX80-54(50)P does not have a detection signal contact.

■ Receptacle (With shutter)

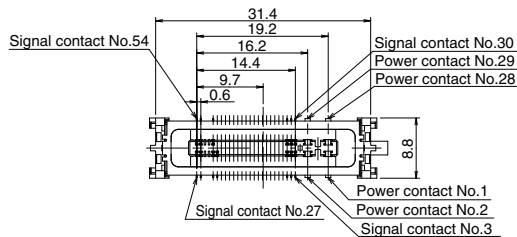
●54 pos.



◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)



◆ Shown without shutter

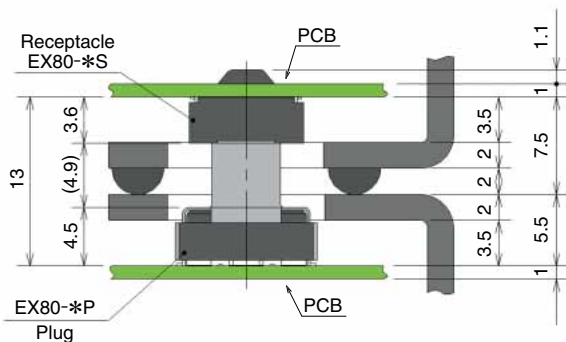


| Part No.            | HRS No.       | Contact plating (contact area/termination) | Shell plating (Body / termination) | Shutter color | Packaging    | RoHS |
|---------------------|---------------|--------------------------------------------|------------------------------------|---------------|--------------|------|
| EX80-54(50)S-SH(71) | 232-0606-5 71 | Gold / Gold                                | Nickel / Tin                       | Silver        | 500 pcs/reel | ○    |
| EX80-54(50)S-SH(75) | 232-0606-5 75 |                                            |                                    | Black         |              |      |

## ◆ Connector mounting condition

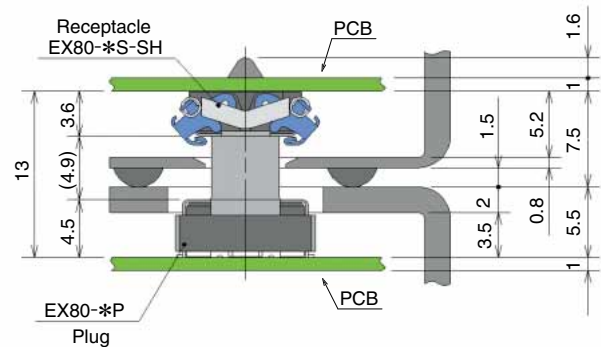
### ● Type without shutters

Housing mounting condition  
(Shown for reference only)



### ● Type with shutters

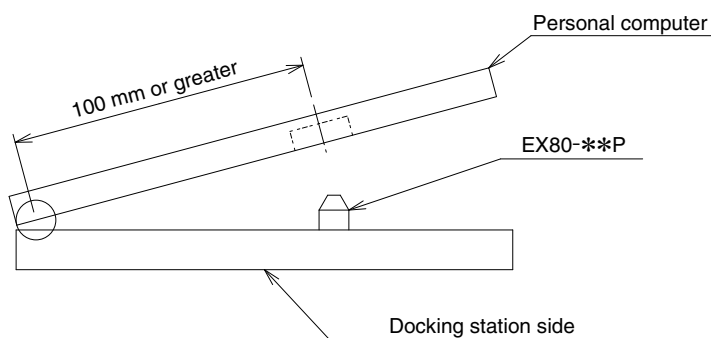
Housing mounting condition  
(Shown for reference only)



Note : The stacking length between boards of this connector is 13mm.

## ◆ Precautions

- Make the stacking height design value of the set 13.0 to 13.7mm. Establish the setting so that the stacking height is 14.5mm or less including the accumulative tolerance of the set.
- Use a floating structure (of 1.2mm or less) to mount this product. (Within 0.7mm for the type with shutters)
- Be sure to also establish a guide structure on the set side.
- For set designs in which the connector rotates and mates, make the radius of the rotation axis 100mm or greater.



MEMO :

Handwriting practice area consisting of 30 horizontal dashed lines.



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