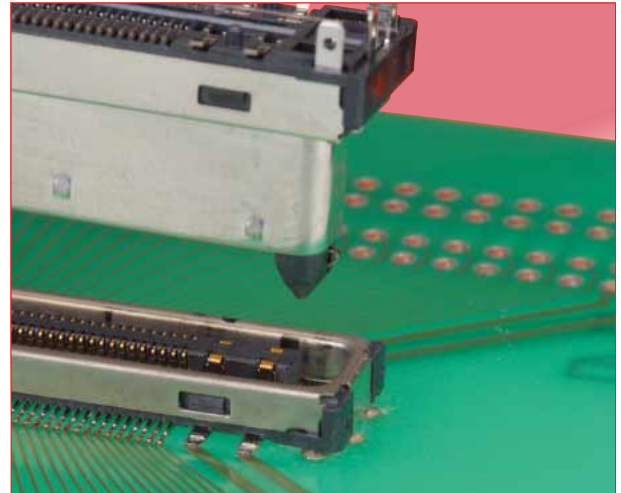


# 0.6mm Pitch, Docking Station Connectors

## 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

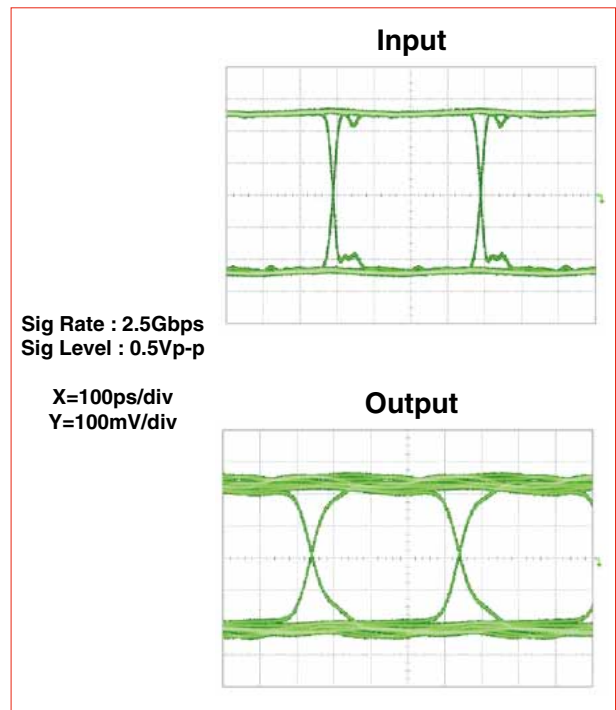
High electrical conductivity dedicated power contacts are rated 3 A.

#### 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.



## ■ Product specifications

Ratings	Storage temperature range	-55°C to +85°C	
	Voltage rating	125V AC	
	Current rating	Signal contact	0.5A
Power contact		3A	

Characteristic	Specification	Conditions
1. Contact resistance	Signal contact : 70mΩ max. 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)**

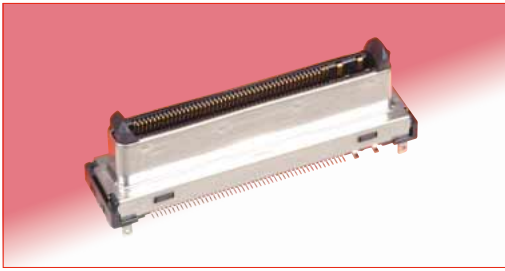
① ② ③ ④ ⑥

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

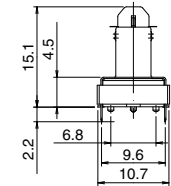
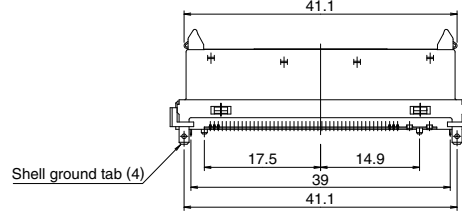
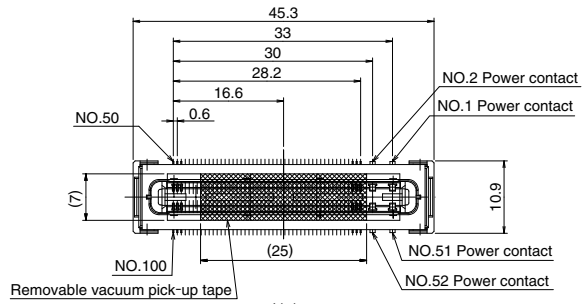
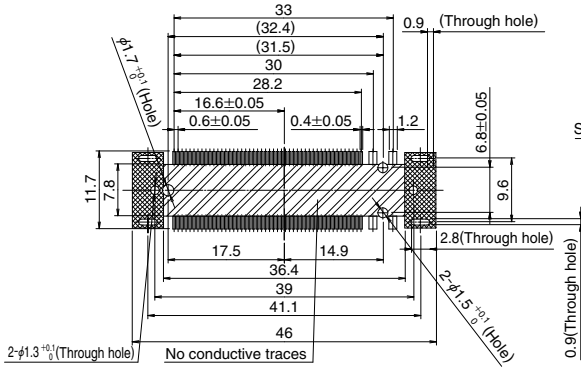
Note: All connectors in this series are designed to be placed on the PCB 1mm min. thick.

■ Plugs

● 100 pos.



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

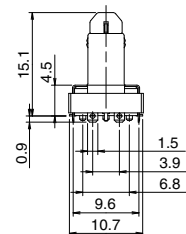
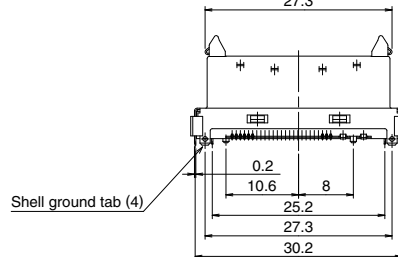
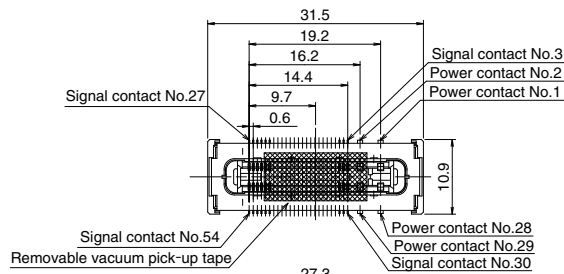
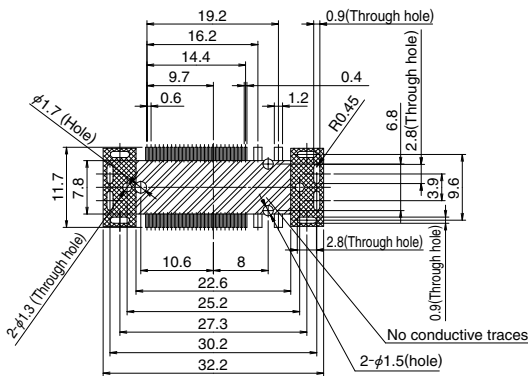


Part No.	HRS No.	Contact plating (contact area/termination)	Shell plating (Body / termination)	Packaging	RoHS
EX80-100P1(70)	232-0598-9 70	Gold / Gold	Nickel / Tin	1 pcs/tray	○

● 54 pos.



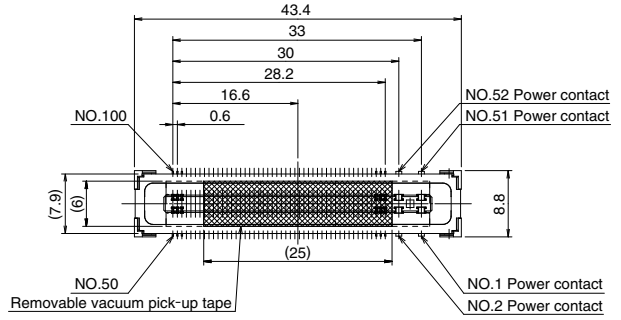
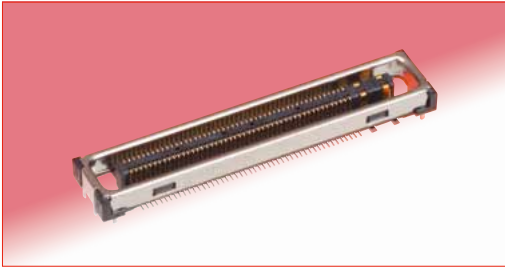
◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)



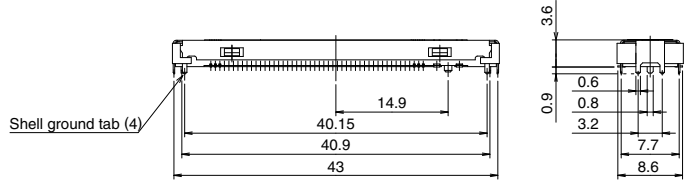
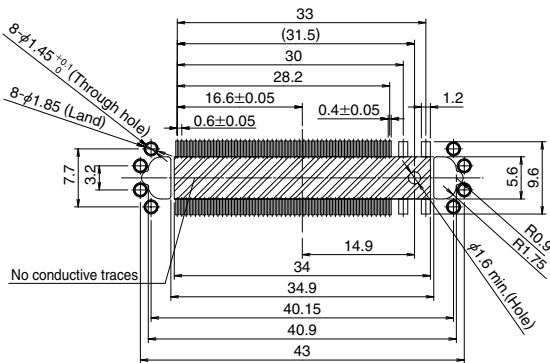
Part No.	HRS No.	Contact plating (contact area/termination)	Shell plating (Body / termination)	Packaging	RoHS
EX80-54P(70)	232-0610-2 70	Gold / Gold	Nickel / Tin	1 pcs/tray	○

## ■ Receptacles (Without shutter)

● 100 pos.

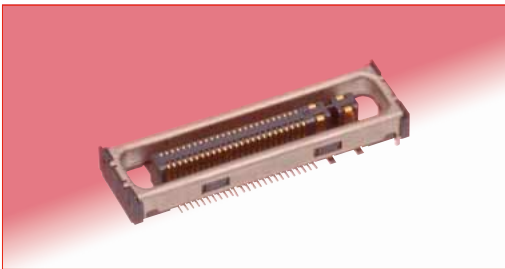


◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)

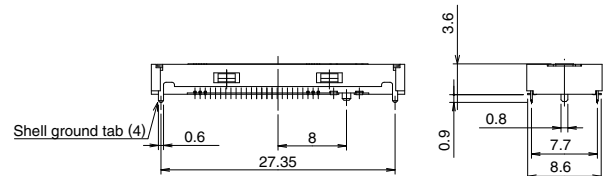
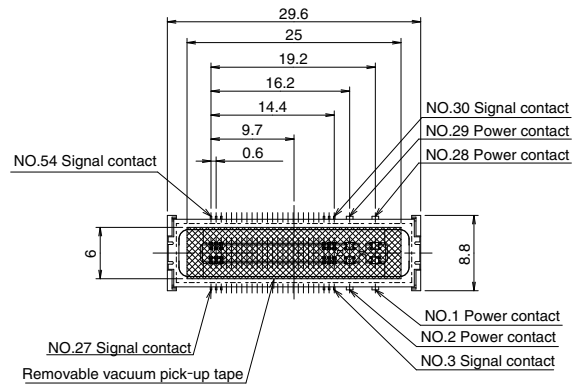
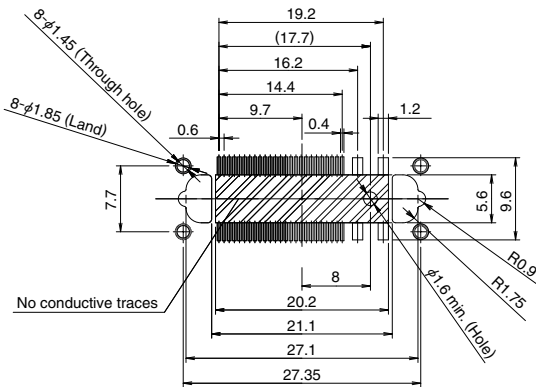


Part No.	HRS No.	Contact plating (contact area/termination)	Shell plating (Body / termination)	Packaging	RoHS
EX80-100S(70)	232-0592-2 70	Gold / Gold	Nickel / Tin	1 pcs/tray	○

● 54 pos.



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



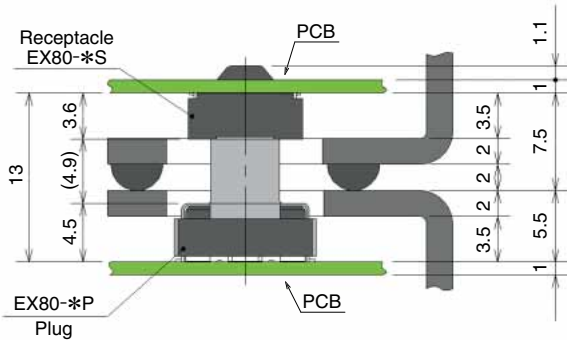
Part No.	HRS No.	Contact plating (contact area/termination)	Shell plating (Body / termination)	Packaging	RoHS
EX80-54S(70)	232-0609-3 70	Gold / Gold	Nickel / Tin	1,000 pcs/reel	○



### ◆ Connector mounting condition

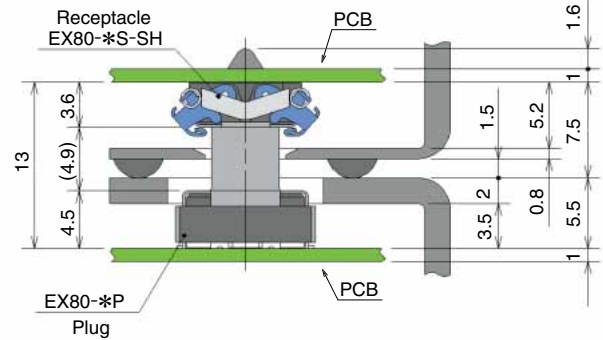
#### ● Type without shutters

Housing mounting condition  
(Shown for reference only)



#### ● Type with shutters

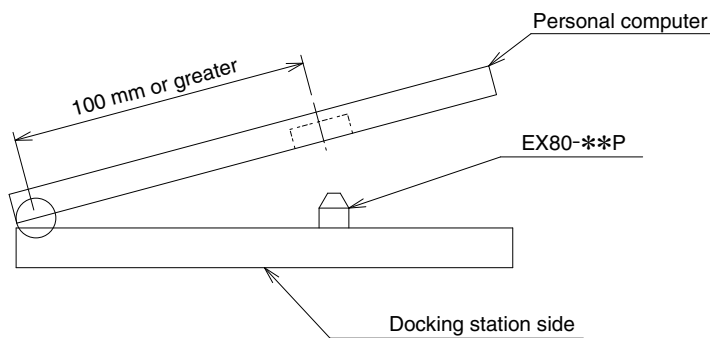
Housing mounting condition  
(Shown for reference only)



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.





**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS CHICAGO OFFICE**  
2300 Warrenville Road, Suite 150,  
Downers Grove, IL 60515  
Phone : +1-630-282-6700  
<http://www.hirose.com/us/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE**  
2841 Junction Ave, Suite 200  
San Jose, CA. 95134  
Phone : +1-408-253-9640  
Fax : +1-408-253-9641  
<http://www.hirose.com/us/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)**  
17197 N. Laurel Park Drive, Suite 253,  
Livonia, MI 48152  
Phone : +1-734-542-9963  
Fax : +1-734-542-9964  
<http://www.hirose.com/us/>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. BOSTON OFFICE**  
40 Shattuck Road, Suite 215,  
Andover, MA 01810  
Phone : +1-978-655-9850

**THE NETHERLANDS:**

**HIROSE ELECTRIC EUROPE B.V.**  
Hogehillweg #8 1101 CC Amsterdam Z-0  
Phone : +31-20-6557460  
Fax : +31-20-6557469  
<http://www.hirose.com/eu/>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH**  
Schoenbergstr. 20, 73760 ostfildern  
Phone : +49-711-456002-221  
Fax : +49-711-456002-299  
<http://www.hirose.com/eu/>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE**  
Nordostpark 25, 90411 Nurnberg  
Phone : +49-911 32 68 89 63  
Fax : +49-911 32 68 89 69  
<http://www.hirose.com/eu/>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE**  
Bayernstr. 3, Haus C 30855 Langenhagen, Germany  
Phone : +49-511 97 82 61 30  
Fax : +49-511 97 82 61 36  
<http://www.hirose.com/eu/>

**FRANCE:**

**HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE**  
130-136 Avenue Joseph Kessel, Bâtiment A,  
78960 Voisins le Bretonneux, France  
Phone : +33-1-77048712  
<http://www.hirose.com/eu/>

**UNITED KINGDOM:**

**HIROSE ELECTRIC EUROPE BV (UK BRANCH)**  
4 Newton Court, Kelvin Drive, Knowlhill,  
Milton Keynes, MK5 8NH  
Phone : +44-1908 202050  
<http://www.hirose.com/eu/>

**CHINA:**

**HIROSE ELECTRIC (CHINA) CO., LTD. (SHANGHAI, HEADQUARTERS)**  
18, Enterprise Center Tower 2, 209# Gong He  
Road, Jing'an District, Shanghai, CHINA 200070  
Phone : +86-21-6391-3355  
Fax : +86-21-6391-3335  
<http://www.hirose.com/cn/>

**CHINA:**

**HIROSE ELECTRIC (CHINA) CO., LTD. BEIJING BRANCH**  
A2006, Ocean International Center, Building 56# East 4th  
Ring Middle Road, ChaoYang District, Beijing, 100025  
Phone : +86-10-8576-9855  
Fax : +86-10-8576-6033  
<http://www.hirose.com/cn/>

**CHINA:**

**HIROSE ELECTRIC (CHINA) CO., LTD. SHENZHEN BRANCH**  
Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre,  
5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008  
Phone : +86-755-8207-0851  
Fax : +86-755-8207-0873  
<http://www.hirose.com/cn/>

**HONG KONG:**

**HIROSE ELECTRIC HONGKONG TRADING CO., LTD.**  
Room 1001, West Wing, Tsim Sha Tsui Centre, 66  
Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong  
Phone : +852-2803-5338  
Fax : +852-2591-6560  
<http://www.hirose.com/hk/>

**TAIWAN:**

**HIROSE ELECTRIC TAIWAN CO., LTD.**  
8F, No.87, Zhengzhou Rd., Taipei  
Phone : +886-2-2555-7377  
Fax : +886-2-2555-7355  
<http://www.hirose.com/tw/>

**KOREA:**

**HIROSE KOREA CO., LTD.**  
143, Gongdan 1-daero, Siheung-si,  
Gyeonggi-do, 15084, Korea  
Phone : +82-31-496-7000  
Fax : +82-31-496-7100  
<http://www.hirose.co.kr/>

**SINGAPORE:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD.**  
03, Anson Road, #20-01, Springleaf Tower,  
Singapore 079909  
Phone : +65-6324-6113  
<http://www.hirose.com/sg/>

**INDIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI OFFICE**  
Regus Level-2, Elegance Tower, Jasola District  
Centre, New Delhi 110025, India  
Phone : +91-11-66351030/1037/1167  
<http://www.hirose.com/sg/>

**INDIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE OFFICE**  
WeWork Galaxy, No 43, Residency Road, Shanthala  
Nagar, Ashok Nagar, Bengaluru, Karnataka 560025, India  
Phone : +91-80-4120 1907  
<http://www.hirose.com/sg/>

**MALAYSIA:**

**PENANG REPRESENTATIVE OFFICE**  
73-3-1, Ideal@The One, Jalan Mahsuri, Bayan  
Lepas, 11950, Penang, Malaysia  
Phone : +604-648-5536  
<http://www.hirose.com/sg/>

**THAILAND:**

**BANGKOK LIAISON OFFICE**  
No.8, T-One Building, Level 15 unit 103, Sukhumvit, 40 Alley,  
Khet Khlong Toei, Phra Khanong Bangkok 10110, Thailand  
Phone : +66-98-886-6746  
<http://www.hirose.com/sg/>

**HIROSE ELECTRIC CO., LTD.**

2-6-3, Nakagawa Chuoh, Tsuzuki-Ku, Yokohama-Shi 224-8540, JAPAN  
TEL: +81-45-620-7410 Fax: +81-45-591-3754  
<http://www.hirose.com>