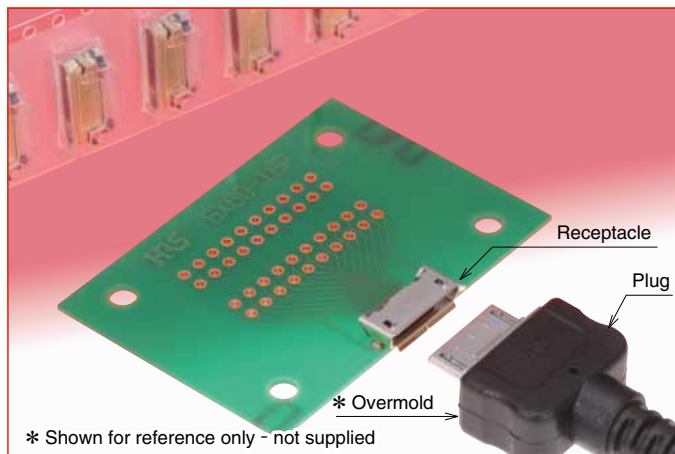
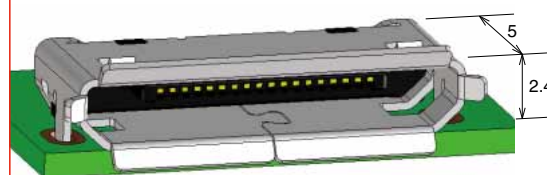


# 0.4 mm Pitch, Space-saving Interface Connectors

## GX Series



### Small size



(18 conductors)

Receptacle

GX60-18P

Fig.1

### Overview

Developed as input/output connectors for use in portable devices requiring reliable high durability connection.

### Features

#### 1. Small size

With a width of 5 mm and 2.4 mm height above the mounting surface the connectors may be used in applications where board and volume space is restricted.(Fig.1)

#### 2. Strong construction

Single piece shell increases the board retention and resists rotational forces encountered in demanding consumer environment

#### 3. High durability

Unique lock latches will maintain high retention force (plug with corresponding receptacle) up to 10,000 cycles, confirming fully mated condition with a distinctive tactile "click" sensation.(Fig.2)

#### 4. ESD protection

Increased distance from the edge of the metal shell to the front of the contacts offers circuit protection from electrostatic discharge.(Fig.3)

#### 5. RoHS compliant

All materials and substances used to produce this product comply with RoHS standards.

### Applications

DSC, PDA, notebook computers, mobile phones and other portable devices requiring high durability interface connectors.

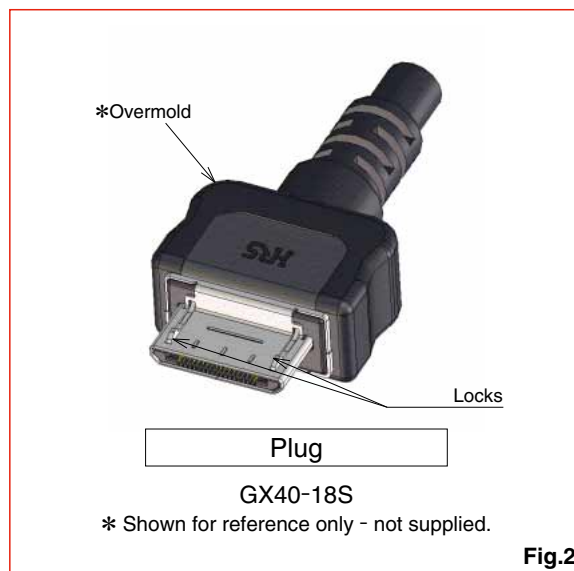


Fig.2

### ESD protection



Despite its miniature size the long distance from the metal shell edge to the front of the contacts provides protection from electrostatic discharge.

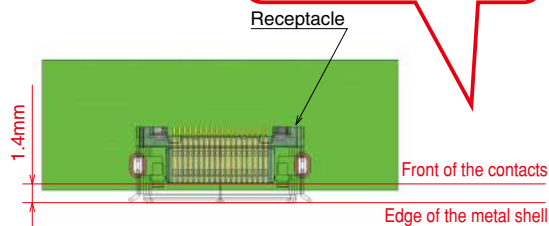


Fig.3

## Specifications

Ratings	Current rating	0.5 A (1 A / contact, each contact at the end, 2 contacts only)	Operating temperature range	-30°C to +80°C
	Voltage rating	30 V AC	Storage temperature range	-40°C to +85°C
Item	Specification	Conditions		
1. Contact resistance	60 mΩ max.	100 mA DC		
2. Insulation resistance	100 MΩ min.	100 V DC		
3. Withstanding voltage	No flashover or insulation breakdown	100 V AC / 1 minute		
4. Durability	Contact resistance: 100 mΩ max. No damage cracks or parts dislocation.	10,000 cycles		
5. Shock	No electrical discontinuity of 1 μs or longer. No damage, cracks or parts dislocation.	Acceleration of 490m/s <sup>2</sup> , 11 ms duration, sine half-wave, 3 cycles, 3 axis		
6. Vibration	No electrical discontinuity of 1 μs or longer. No damage, cracks or parts dislocation.	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 3 directions for 2 hours		
7. Temperature cycle	Contact resistance: 100 mΩ max. No damage, cracks or parts dislocation.	Temperature:-55°C→+15°C→+85°C→+15°C to 35°C Time : 30min.→2min. to 3min.→30min.→2min. to 3 min. 5 cycles		
8. Humidity	Insulation resistance: 100 mΩ min. Insulation resistance: 10 MΩ min.	96 hours at a 40 ±3°C, RH of 90 to 95%, then leave for 1 to 2 hours at normal temperature and humidity		
9. Heat resistance	Contact resistance: 100 mΩ max.	96 ±4 hours at +85 ±2°C		
10. Cold resistance	Contact resistance: 100 mΩ max.	96 ±4 hours at -40 ±3°C		
11. Salt spray test	Contact resistance: 100 mΩ max.	48 hours at a concentration of 5% ±1%, and humidity of 85 ±3°C		

## Materials

### ●Receptacle

Part	Material	Finish	Remarks
Insulator	Synthetic resin	Color: Black	UL94V-0
Contacts	Copper alloy	Gold plated	—————
Shell	Stainless steel	Selective gold plated	—————

### ●Plug

Part	Material	Finish	Remarks
Insulator	Synthetic resin	Color: Black	UL94V-0
Contacts	Copper alloy	Gold plated	—————
Shells	Stainless steel	Nickel plated	—————
Lock	Stainless steel	—————	—————

## Ordering information

### ●Receptacle

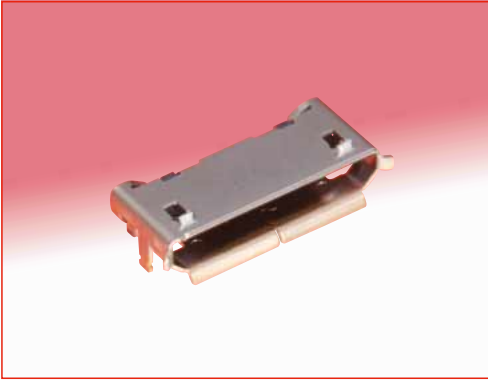
GX60 - 18 P  
①            ②    ③

### ●Plug

GX40 - 18 S  
①            ②    ③

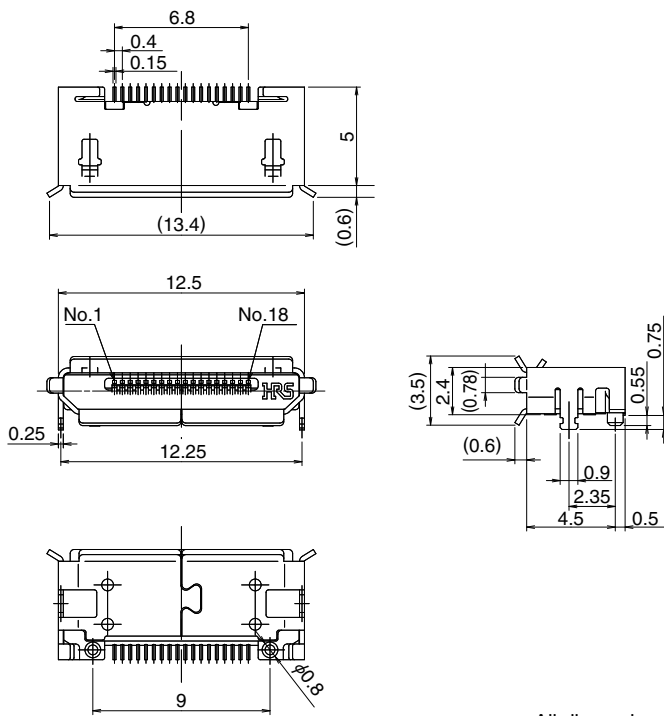
① Series name: GX60 (Receptacles) GX40 (Plugs)
② Number of contacts : 18
③ Contacts type P: Male S: Female

## Receptacle



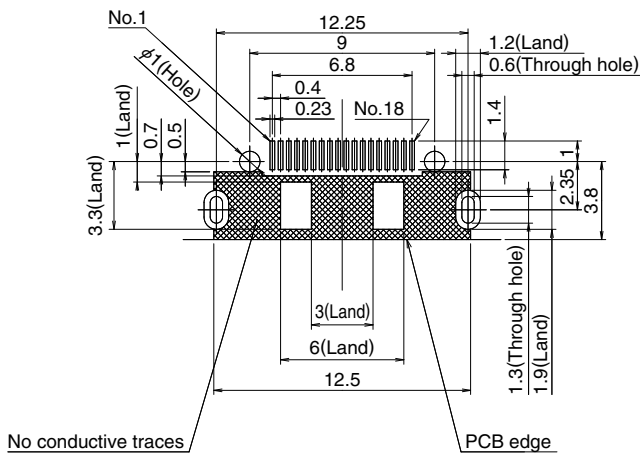
Part No.	HRS No.	Packaging	RoHS
GX60-18P	247-0001-3	1,500 pcs/reel	○

Note : Order by number of reels.



All dimensions: mm

## Recommended PCB mounting pattern



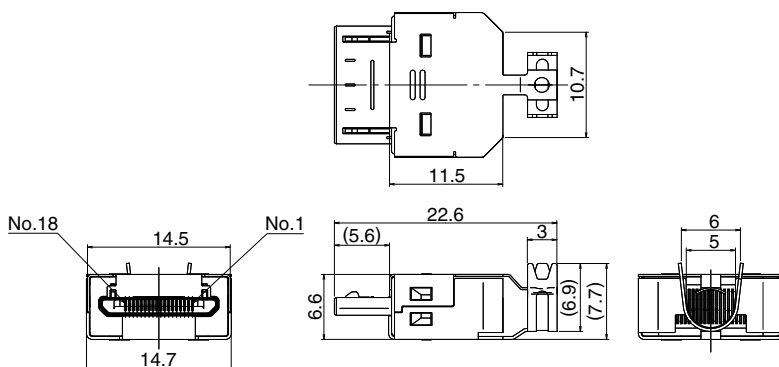
All dimensions: mm

■ Plug



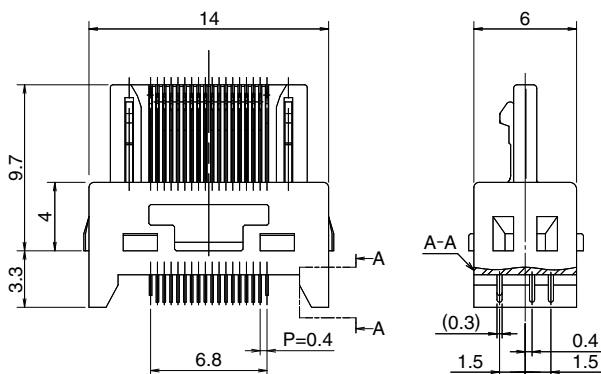
Part No.	HRS No.	Packaging	RoHS
GX40-18S	247-0002-6	1	○

● Assembled components - Supplied non-terminated, without overmold



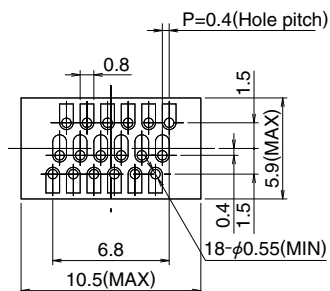
All dimensions: mm

● Assembly (insulator/ contact/lock)

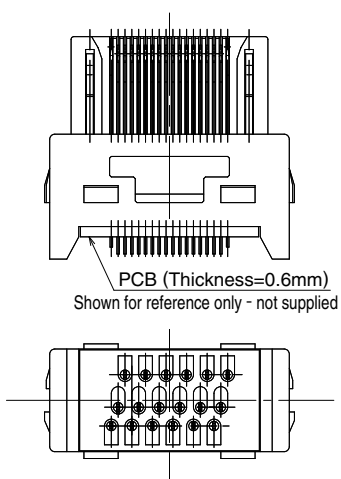


All dimensions: mm

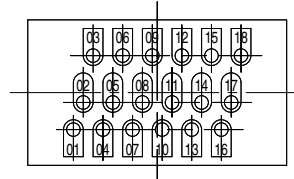
◆ Recommended PCB mounting pattern (Thickness=0.6mm)



◆ PCB installed



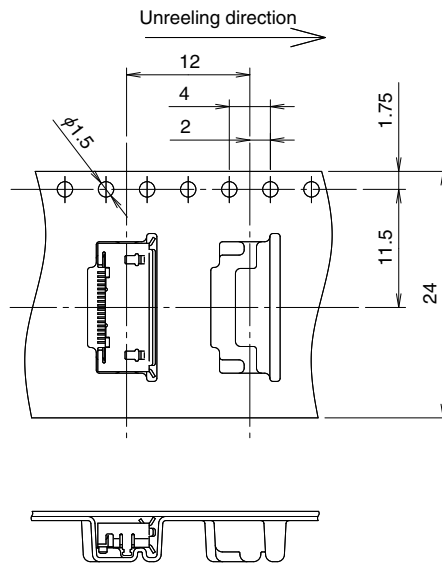
◆ Contact Number Identification



All dimensions: mm

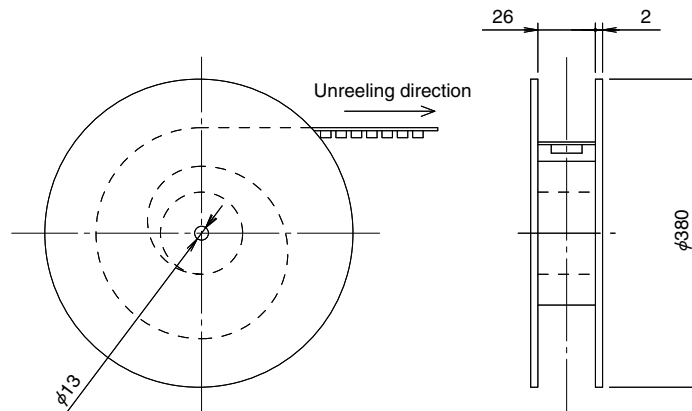
## ◆ Packaging Specifications

### ● Embossed carrier tape dimensions

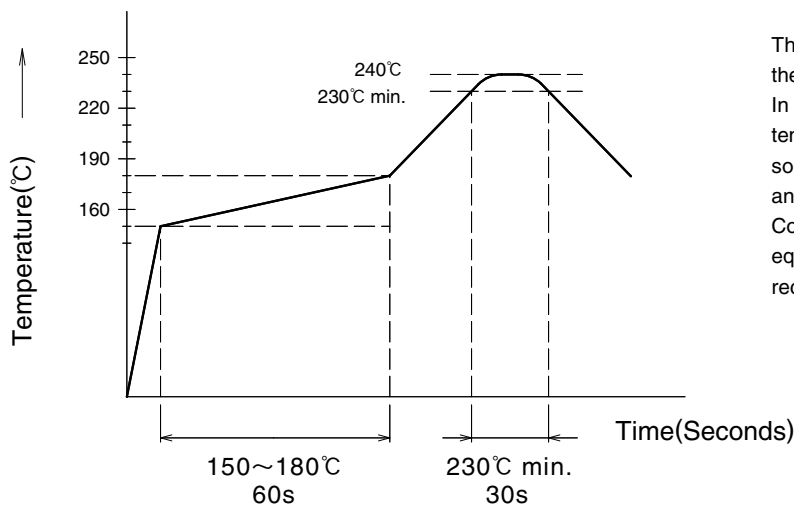


Note : Tape and reel packaging (1,500 pcs/reel).  
Order by number of reels.

### ● Reel Dimensions



## ◆ Recommended Solder Reflow Profile



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.

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. Headquarters**  
 2688 Westhills Court, Simi Valley, CA 93065-6235  
 Phone : +1-805-522-7958  
 Fax : +1-805-522-3217  
<http://www.hiroseusa.com>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. San Jose Office**  
 3255 Scott Boulevard, Building 7, Suite 101  
 Santa Clara, CA 95054  
 Phone : +1-408-253-9640  
 Fax : +1-408-253-9641  
<http://www.hiroseusa.com>

**USA:**

**HIROSE ELECTRIC (U.S.A.), INC. Detroit Office (Automotive)**  
 37677 Professional Center Drive, Suite #100C  
 Livonia, MI 48154  
 Phone : +1-734-542-9963  
 Fax : +1-734-542-9964  
<http://www.hiroseusa.com>

**THE NETHERLANDS:**

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

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. German Branch**  
 Herzog-Carl-Strasse 4 D-73760 Ostfildern  
 (Scharnhauser Park)  
 Phone : +49-711-4560-02-1  
 Fax : +49-711-4560-02-299  
<http://www.hirose.de>

**GERMANY:**

**HIROSE ELECTRIC EUROPE B.V. Nuernberg Office**  
 Muggenhofer Str. 136 90429 Nuernberg  
 Phone : +49-911 32 68 89 63  
 Fax : +49-911 32 68 89 69  
<http://www.hirose.de>

**UNITED KINGDOM:**

**Hirose Electric Europe BV (UK Branch)**  
 4 Newton Court, Kelvin Drive, Knowlhill,  
 Milton Keynes, MK5 8NH  
 Phone : +44-1908 202050  
 Fax : +44-1908 202058

**CHINA:**

**HIROSE ELECTRIC (SHANGHAI) CO., LTD.**  
 1601, Henderson Metropolitan, NO.300, East Nanjing  
 Road, Huangpu District, Shanghai, China 200001  
 Phone : +86-21-6391-3355  
 Fax : +86-21-6391-3335  
<http://www.hirose-china.com.cn>

**CHINA:**

**HIROSE ELECTRIC (SHANGHAI) CO.,LTD. BEIJING BRANCH**  
 A1001, Ocean International Center, Building 56# East 4th  
 Ring Middle Road, ChaoYang District, Beijing, 100025  
 Phone : +86-10-5165-9332  
 Fax : +86-10-5908-1381  
<http://www.hirose-china.com.cn>

**CHINA:**

**HIROSE ELECTRIC TECHNOLOGIES (SHENZHEN) CO., LTD.**  
 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-china.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-hongkong.com.hk>

**TAIWAN:**

**HIROSE ELECTRIC TAIWAN CO., LTD.**  
 103 8F, No.87, Zhengzhou Rd., Taipei  
 Phone : +886-2-2555-7377  
 Fax : +886-2-2555-7350  
<http://www.hirose-taiwan.com.tw>

**KOREA:**

**HIROSE KOREA CO., LTD.**  
 1261-10, Jeoungwhang-Dong, Shihung-City,  
 Kyunggi-Do 429-450  
 Phone : +82-31-496-7000,7124  
 Fax : +82-31-496-7100  
<http://www.hirose.co.kr>

**SINGAPORE:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD.**  
 10 Anson Road #26-1, International Plaza  
 079903, Singapore  
 Phone : +65-6324-6113  
 Fax : +65-6324-6123  
<http://www.hirose-singapore.com.sg>

**INDIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD Delhi Liaison Office**  
 Suite No. 606 5th Floor SB Tower 1A/1 Sector  
 16 A Filmcity Noida 201301 Uttar Pradesh-India  
 Phone : +91-120-4804917  
 Fax : +91-120-4804949  
<http://www.hirose.com/sg/>

**INDIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD. Bangalore Liaison office**  
 Unit No.03, Ground Floor, Explorer Building International Tech  
 Park Whitefield Road, Bangalore 560066 Karnataka, India  
 Phone : +91-80-4120 1907  
 Fax : +91-80-4120 9908  
<http://www.hirose-singapore.com.sg>

**MALAYSIA:**

**HIROSE ELECTRIC SINGAPORE PTE. LTD (Representative office)**  
 1-10-07, Suntech @ Penang Cybercity (1164),Lintang  
 Mayang Pasir 3,11950, Bayan Baru, Penang, Malaysia.  
 Phone : +604-619-2564  
 Fax : +604-619-2574  
<http://www.hirose.com/sg/>



**HIROSE ELECTRIC CO.,LTD.**

2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN  
 TEL: +81-45-620-3526 Fax: +81-45-591-3726  
<http://www.hirose.com>  
<http://www.hirose-connectors.com>