

# ***Corporate Profile***

# **HRS**

**HIROSE ELECTRIC Co., Ltd.**

# Corporate Profile

## ***High Performance Connector Supplier with creative links to world electronics***

Hirose will by thinking small, connect wisdom, create new values,  
and contribute to the development of a global society.

Head Office: Tokyo, Japan

Founded: August, 1937

Listed on the first section of the Tokyo Stock Exchange

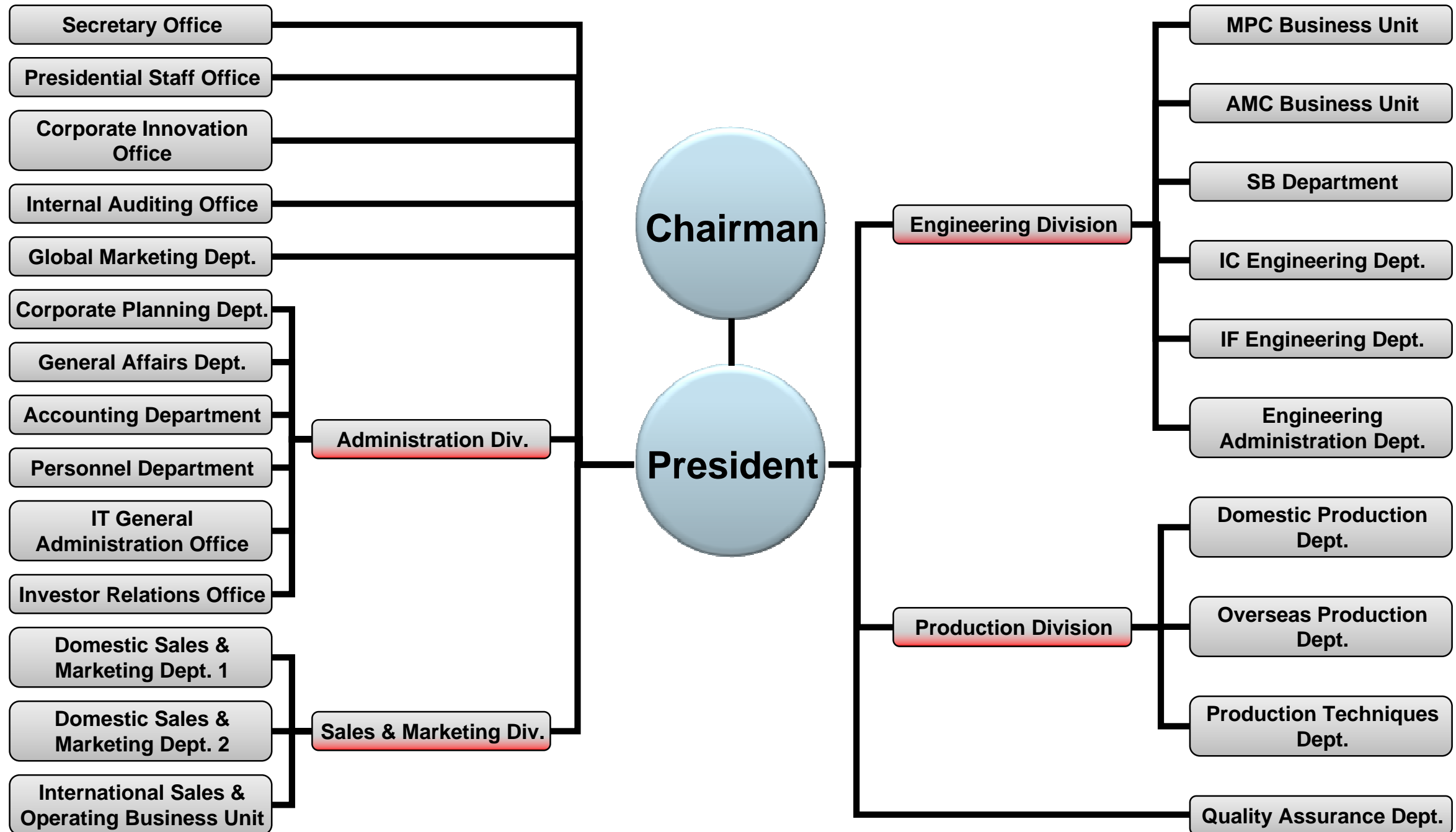
Annual Sales: 95,938 million yen  
(Apr. '12 - Mar. '13)

Ordinary Income: 22,386 million yen  
(Apr. '12 - Mar. '13)

Employees: 5,020 worldwide

ISO9001, ISO14001, ISO/TS16949, ISO/IEC17025 certified

# Organization



# Innovated Development for Creative Links of Wisdom

■ Our strong and constant product development keeps the new products ratio greater than 30% in over 50,000 items of products. Engineering development guideline, so called Hirose's corporate DNA, which is “**Marketing and technology innovation**” historically lies behind.

■ “Yokohama center” was established in 2011.

All the Engineering, Sales and Marketing are brought together to this building and realizes highly efficient development and sales systems.

As the center of each function, more globalized R&D activity and sales promotion are accelerated.



**<Yokohama Center>**



★ 4 sections are concentrated in Yokohama center.

(Mold tooling section is located only 20 min away from Yokohama center. )



# Locations in Japan

Corporate HQ



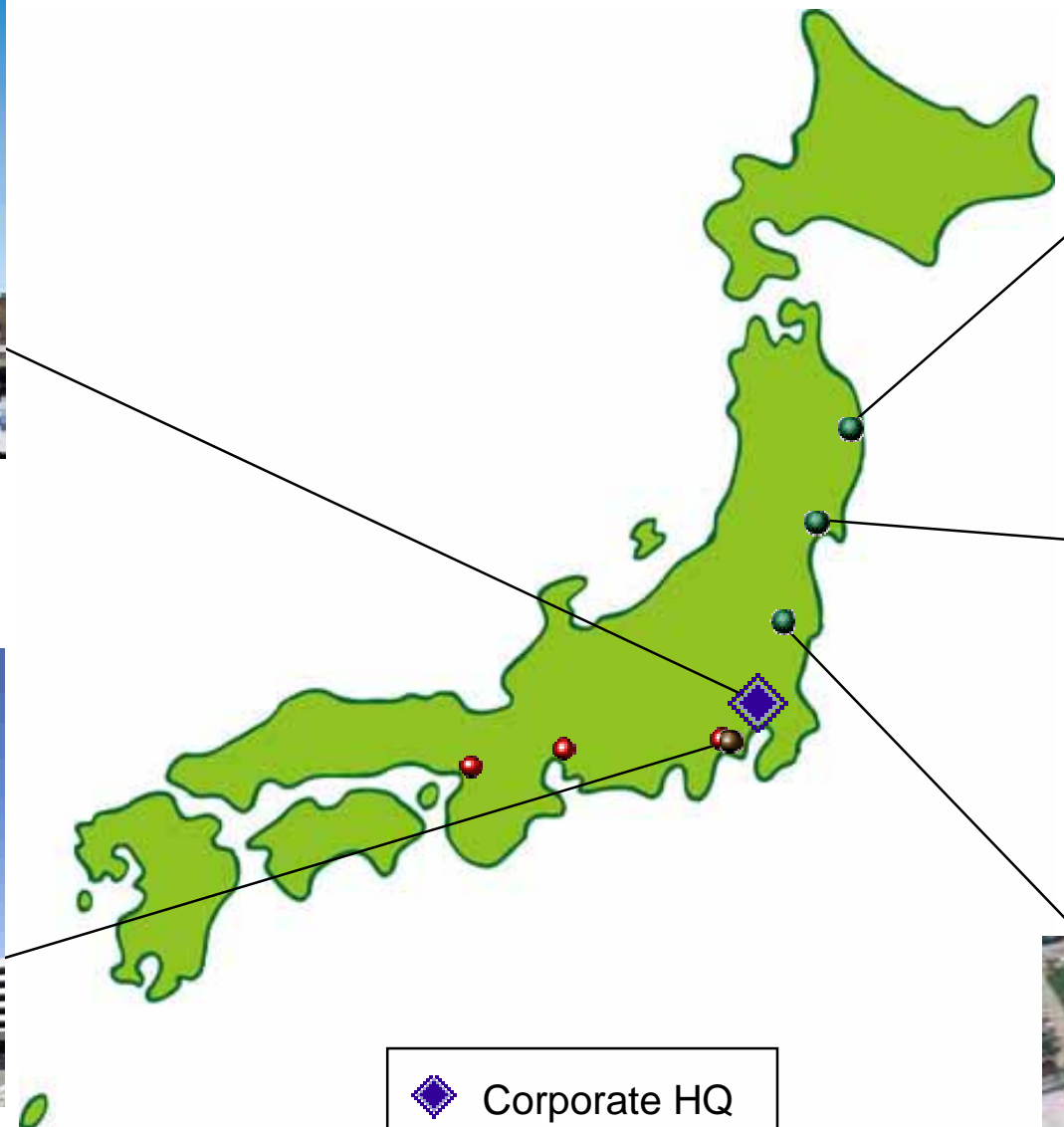
(Tokyo)

Yokohama Center



(Yokohama)

**Japan sales offices:  
Yokohama, Nagoya & Osaka**



-  Corporate HQ
-  Sales
-  Factory
-  R & D

Miyako Plant



Ichinoseki Plant



Koriyama Plant



# Locations in Asia

## China



HIROSE ELECTRIC (SUZHOU) CO., LTD.



HIROSE ELECTRIC (SHANGHAI)  
CO., LTD. (INCL. QC)



HIROSE KOREA CO., LTD.

## Korea (Shihung)



HIROSE ELECTRIC (DONGGUAN) CO., LTD.



HIROSE ELECTRIC SINGAPORE PTE. LTD.  
BANGALORE/DELHI LIAISON OFFICE

## India

## Malaysia



HIROSE ELECTRIC  
MALAYSIA SDN. BHD.



HIROSE ELECTRIC CO., LTD.  
SINGAPORE BRANCH

## Indonesia



PT. HIROSE ELECTRIC INDONESIA

## Taiwan (Taipei)



HIROSE ELECTRIC  
TAIWAN CO., LTD.

## Hong Kong



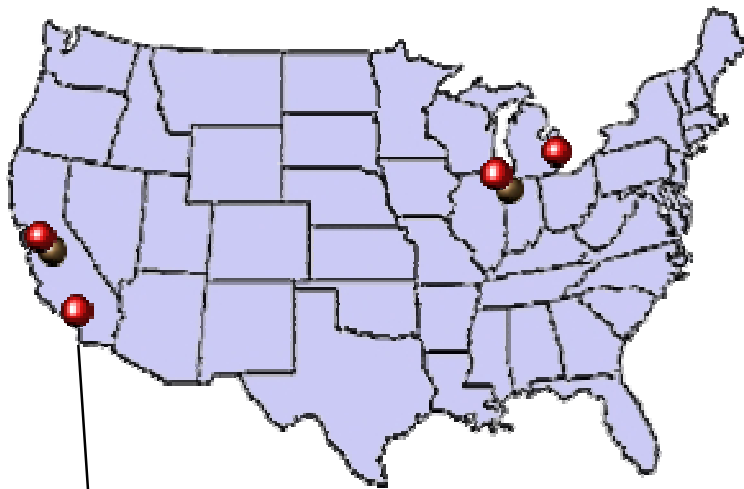
HIROSE ELECTRIC  
HONG KONG CO., LTD.





# Locations in USA & Europe

- Sales
- R & D



**USA** (Simi Valley)



HIROSE ELECTRIC U.S.A., INC.

**USA sales offices:**  
**San Jose, Detroit and Chicago**



**Finland** (Helsinki)

HIROSE ELECTRIC  
EUROPE B.V. (Finland office)

**The Netherlands**  
(Amsterdam)



HIROSE ELECTRIC  
EUROPE B.V.

**UK** (Milton Keynes)



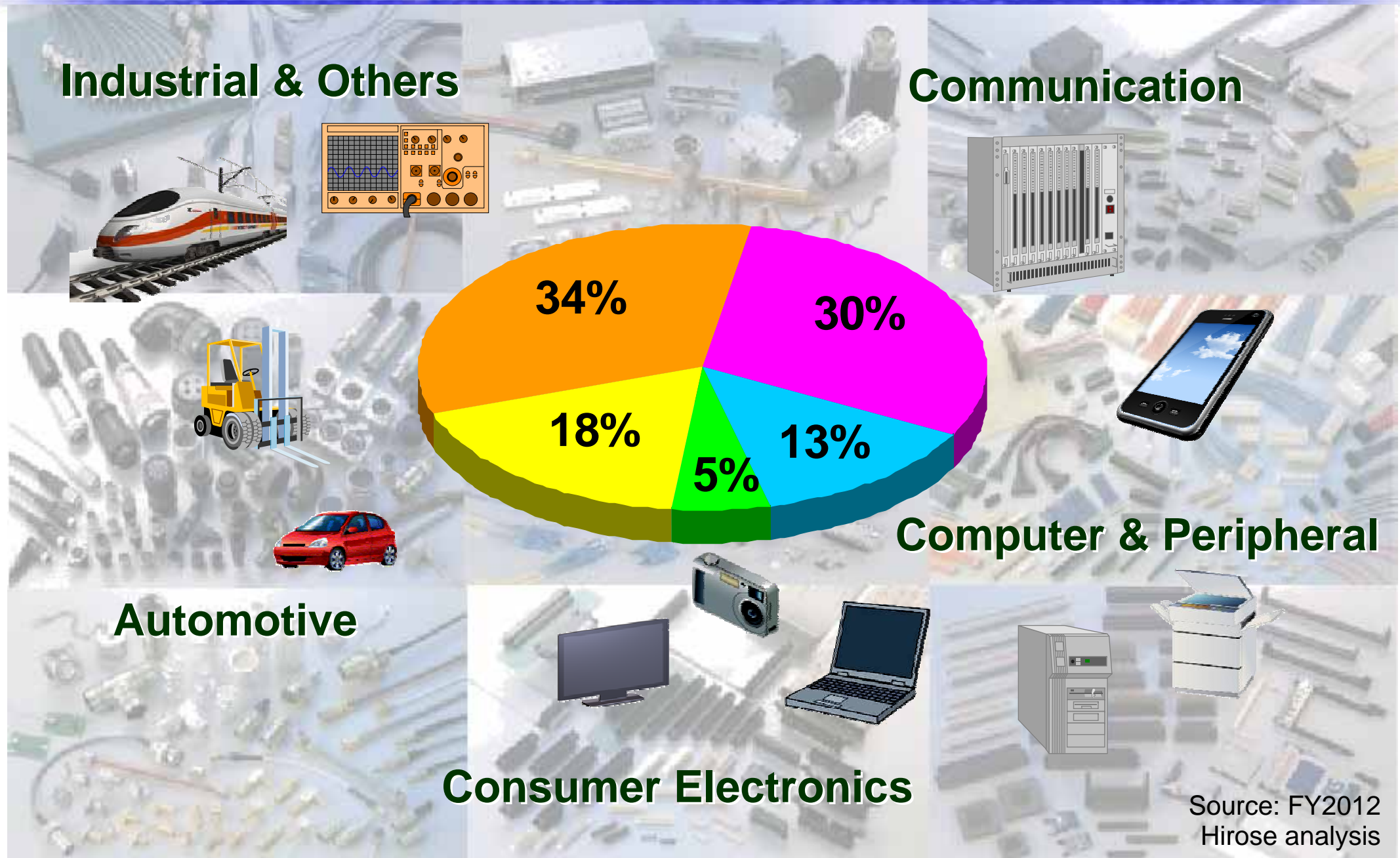
HIROSE ELECTRIC EUROPE B.V.  
UK Branch

**Germany** (Stuttgart)



HIROSE ELECTRIC EUROPE B.V.  
German Branch

# Wide Product Range Creates Solutions to Best Match Customer Needs

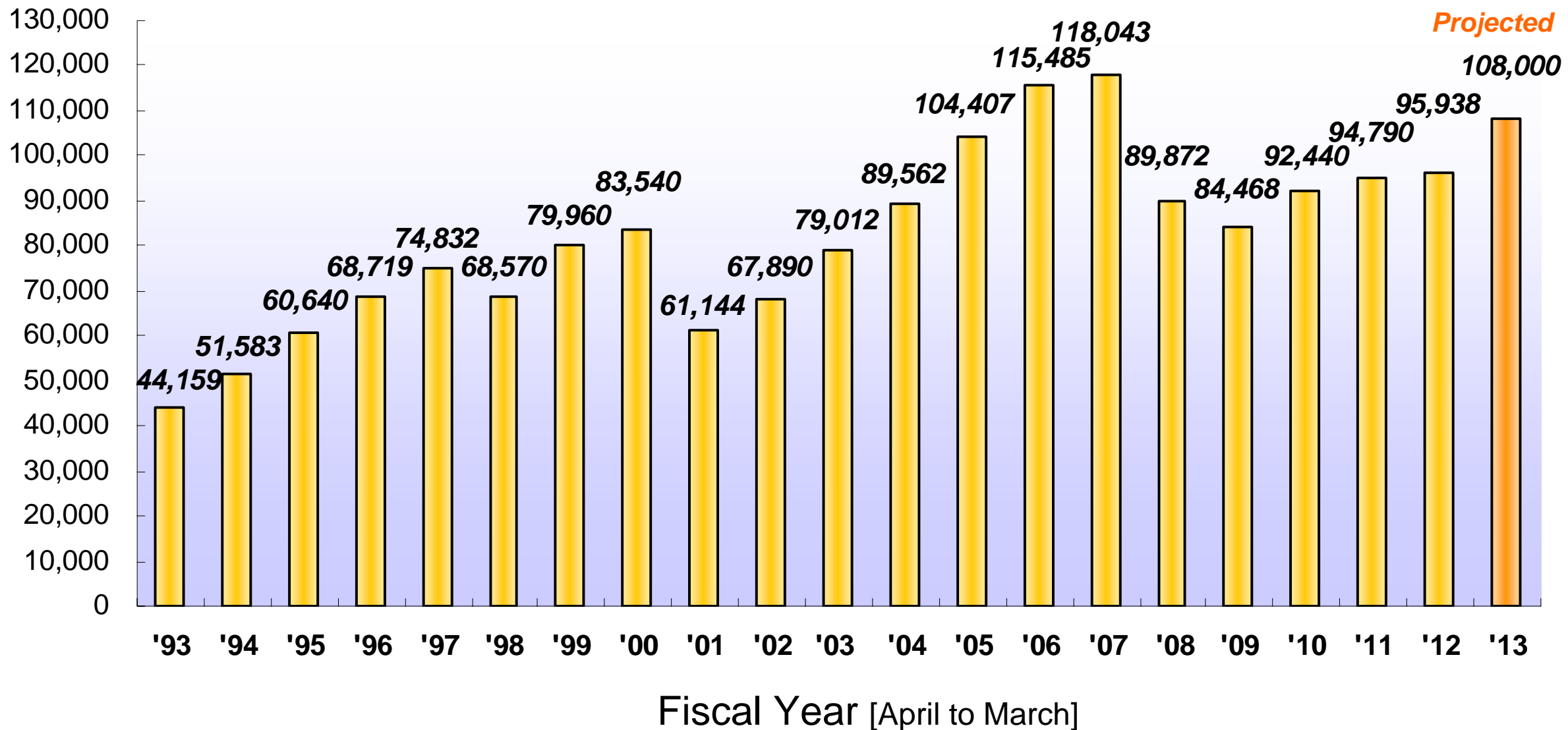


**Over 50,000 available connectors of Hirose cover the whole markets**



# Trend of Sales

[Million Yen]



# Top 10 Worldwide Connector Suppliers

## Sales Comparison for Calendar Year 2012 (Jan. to Dec.)

Rank	Supplier	Total ( Million US\$)
1	TE Connectivity	13,170
2	Amphenol	3,858
3	Hon Hai	3,832
4	Molex	2,973
5	Delphi DCS	2,395
6	JST	1,468
<b>7</b>	<b>Hirose</b>	<b>1,134</b>
8	JAE	1,071
9	Rosenberger	740
10	FCI	560

Source: Fleck Research. Issued in 2013

# Hirose's Core Competencies

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**Advanced  
Products**

**High  
Performance**

**Financial  
Stability**

**Quality  
Management**

**Environmentally  
Friendly**

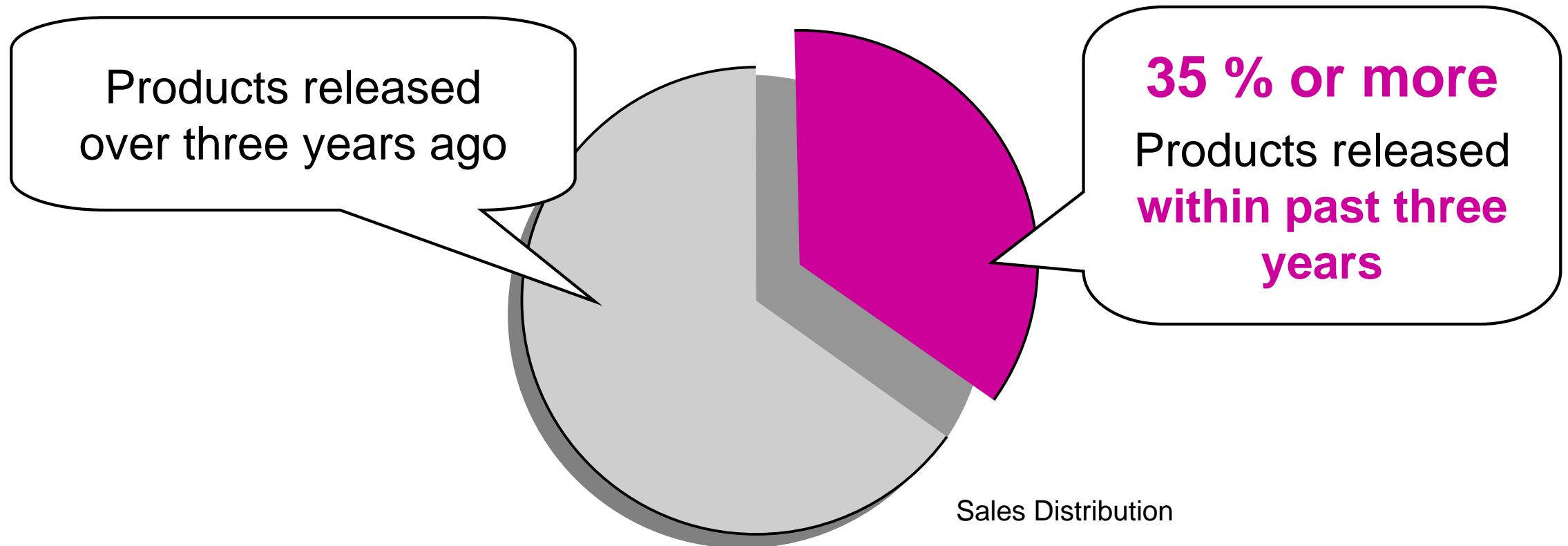
**Internationally  
Acknowledged**





# Focus on Advanced Products

**Greater than 30 % of whole Hirose product variations are renewed every year with strong and constant product development.**



***We are focusing on development and proposal of leading and cutting-edge products.***



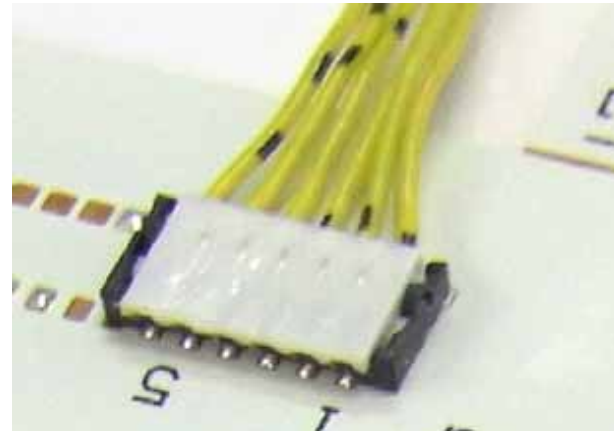
# World Leading Connectors

- High Current



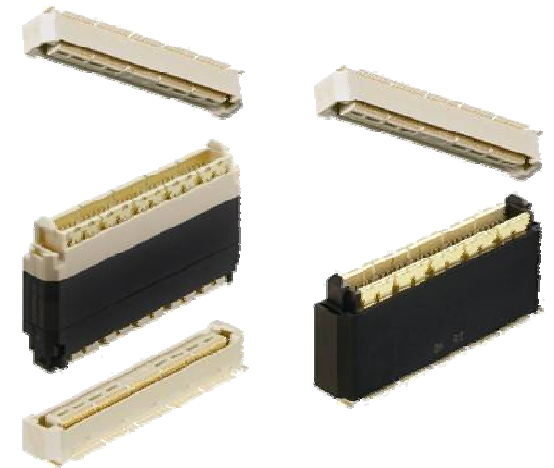
PS2

- Unique Design “Swing Lock”



DF57

- High Speed



XG1

- The World Smallest Class

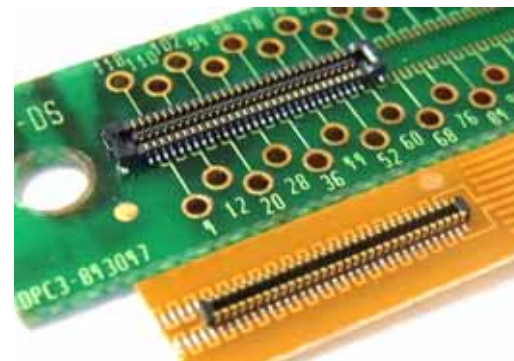
Height: 0.9 mm  
Mounting area: 3.88 mm<sup>2</sup>



MS-180

- The World Shortest Class Depth

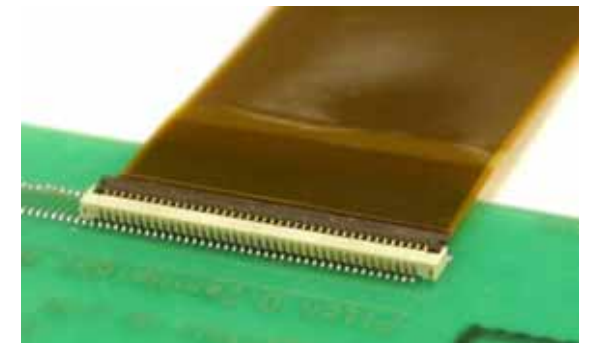
Pitch: 0.35 mm  
Mating Height: 0.8 mm  
Depth: 1.98 mm



BM15

- Ultra Fine Pitch

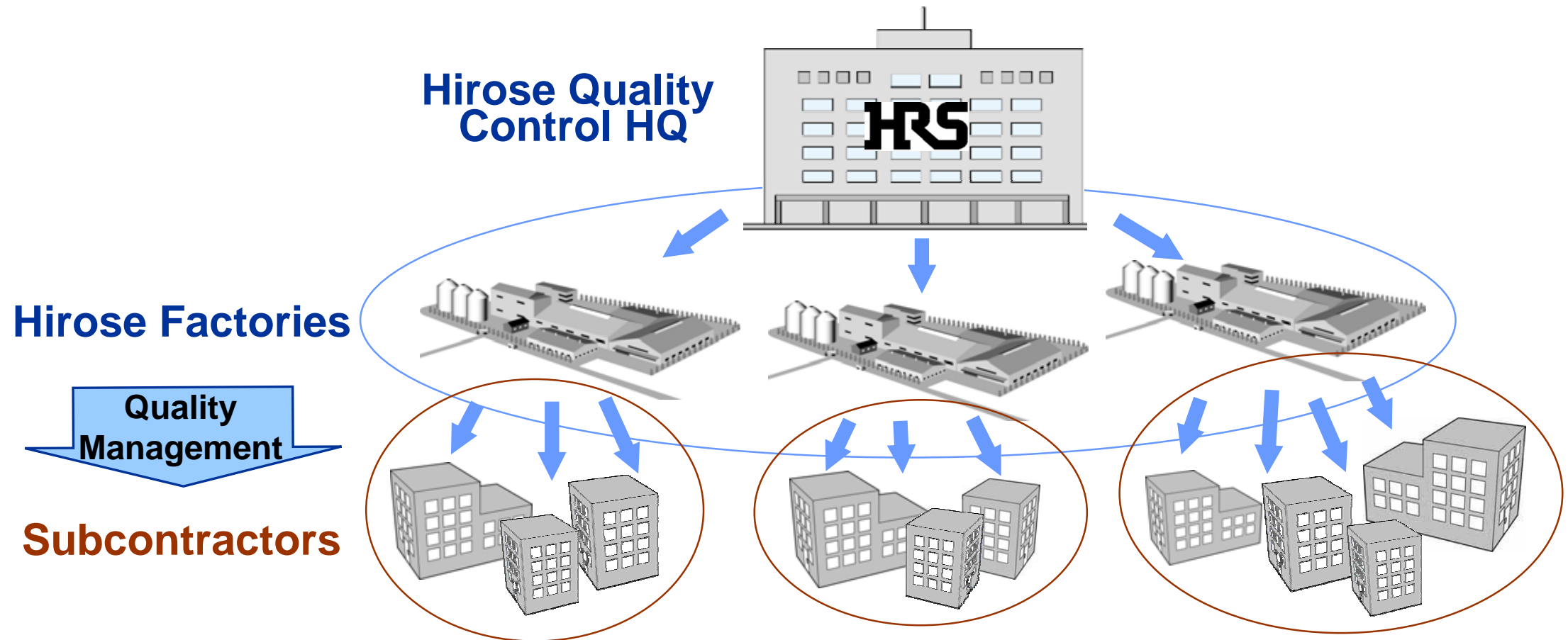
Pitch: 0.2 mm  
Depth: 2.75 mm



FH43B



# Comprehensive Quality Management System



## • Quality Management System with Subcontractors

Monthly subcontractor evaluation

Regular QC activities and trainings

Production tooling and operation manuals are provided by Hirose





# Hirose Green Policy

***Hirose, as an international company, promotes business activities taking into consideration environmental concerns, and recognizes the importance of complying with the global environmental conservation as part of its fundamental business objectives to further expand into a global market.***

***- Environmental Action Guideline***

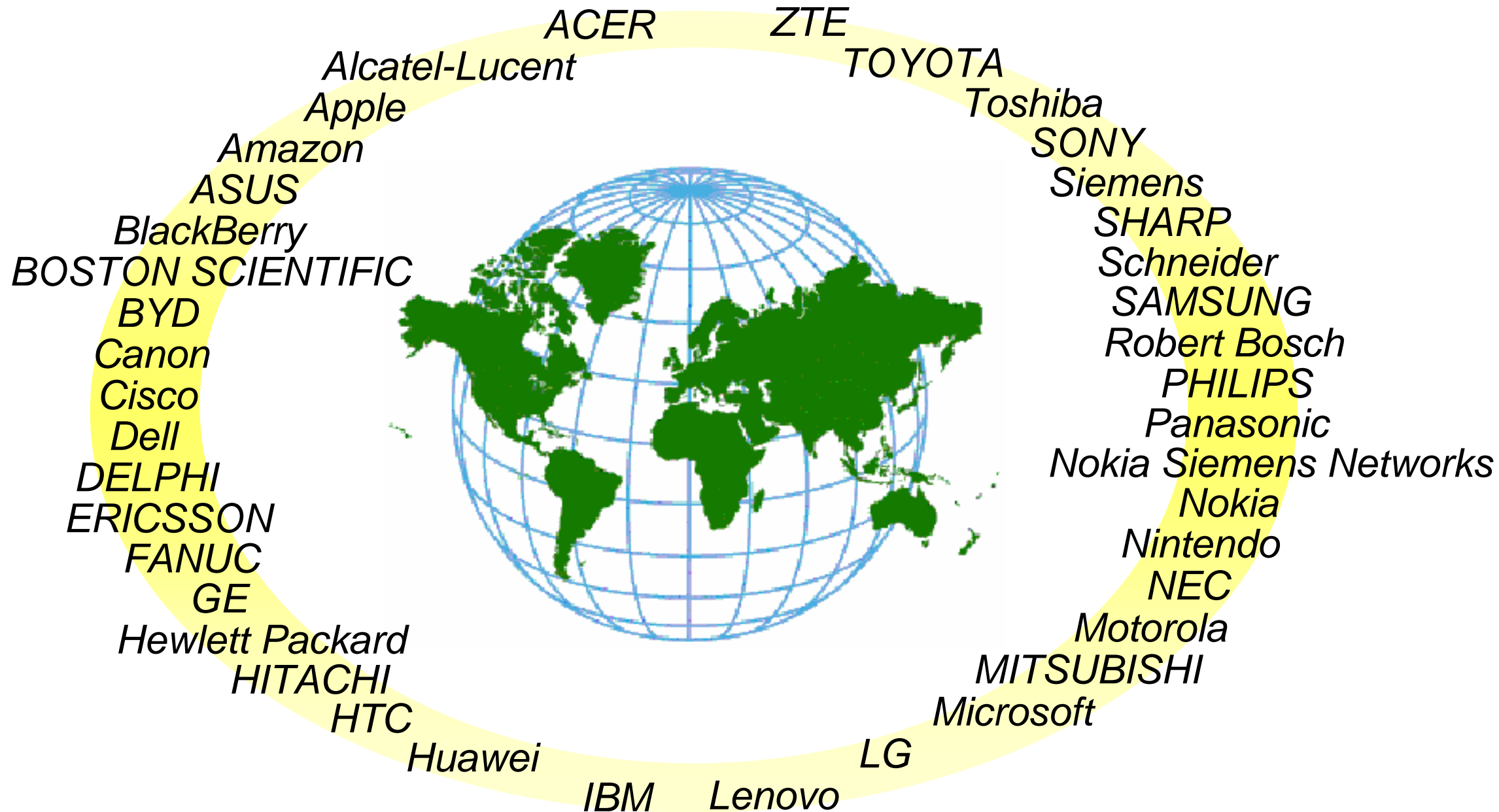
- ISO14001 All Hirose Japan is certified in December, 2002
- RoHS-compliant versions are available for major products
- RoHS-compliant part number search on Hirose website

\* Please consult Hirose for the development schedule of the RoHS-compliant versions for other items.





# Hirose's Worldwide Customers







# ***Products & Applications***



## Connectors for LED Lighting

### • For Indoor Applications



Bulb Type

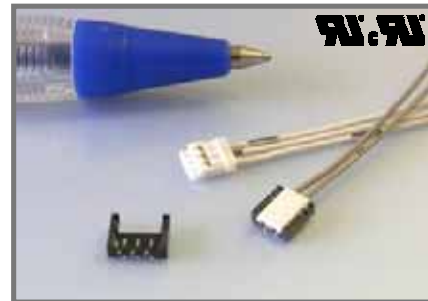


Line Type

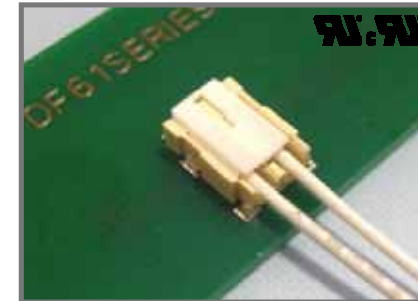
**DF59 Series**  
3 Amps, 230 V



**DF57 Series**  
0.5 to 2.5 Amps, 100 V



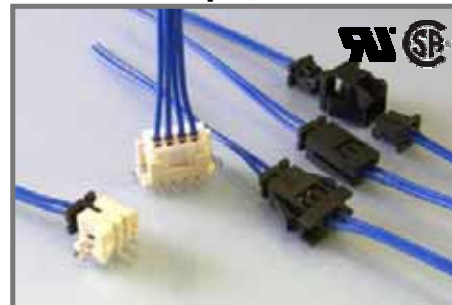
**DF61 Series**  
5 Amps Max, 350 V



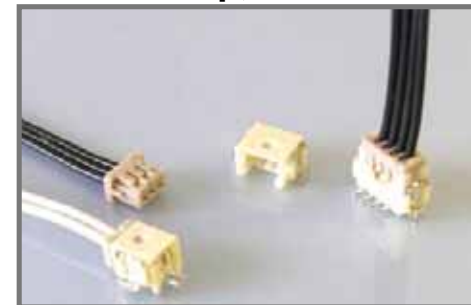
**DF62 Series**  
1 to 3 Amps, 250 V



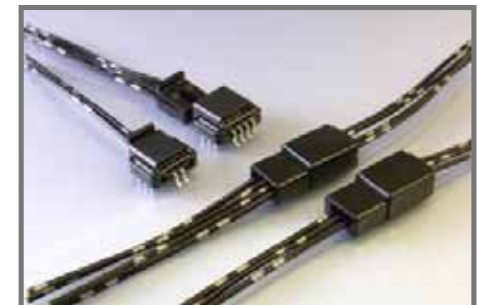
**DF3 Series**  
3 Amps, 250 V



**DF13 Series**  
1 Amp, 150 V



**GT8E**  
3 Amps, 250 V

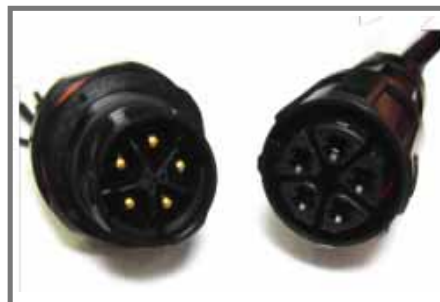


### • For Outdoor Applications Waterproof

Street Lamp



**HR41 Series**  
Power Connector



**HR34B Series**  
Push-on Bayonet  
Lock



**HR30 Series**  
Small Size & Light Weight



**LF Series**  
Bayonet Lock



# Connectors for Industrial Machinery

## Power Supply

- **EM-W / EM-M / EF1 Series for High Current**



50 Amps



50 Amps



130 Amps

## Servo Motor

- **HR34B / HR08D Series with Push-On Bayonet Lock**



## PLC

- **FX18 Series High Speed Transmission**

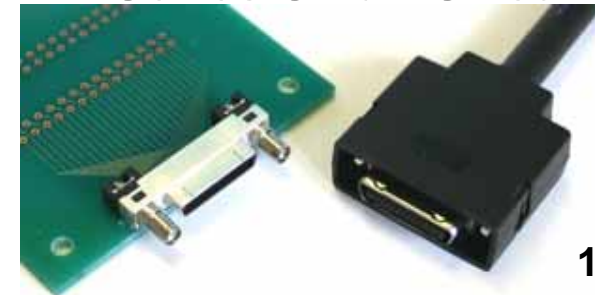


- **FX20 Series Floating Stacking Connector**



## PLC

- **DH Series Small-Sized Interface**

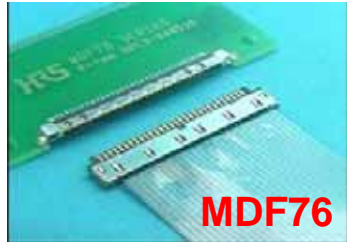


1 mm pitch



# Connectors for Ultrasound Diagnostic Equipment

## LCD Interface



**MDF76**

1 mm Pitch,  
Shielded Connector

## Key Pad to Main Body



**GT17H**

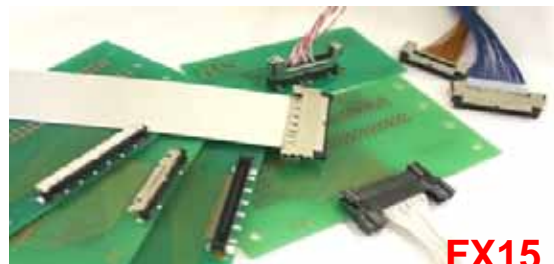
Robust USB Signal  
Connector

## Main Body (Internal)



**IT1**

Highly Reliable 2-Point  
Contact,  
Floating Structure



**FX15**

1 mm Pitch, High Speed  
Connector for LVDS



**FX18**

High Speed Transmission



**FX20**

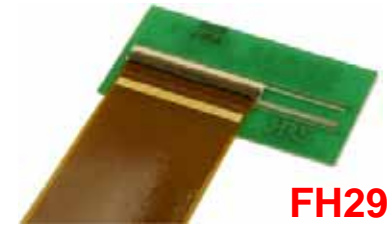
Floating Stacking Connector

## Probe Head



**DF36**

Enhanced Grounding  
Up to 50 pos.



**FH29**

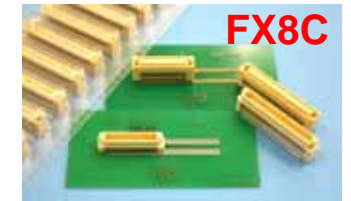
0.2 mm Pitch,  
Up to 120 pos.

## Probe Box



**FX10/11**

Pitch: 0.5 mm  
Stacking Height: 2 to 5 mm



**FX8C**

Pitch: 0.6 mm  
Stacking Height: 3 to 16 mm

## Main Body (Interface)



**GT32**

USB3.0 Transmission



**DH**

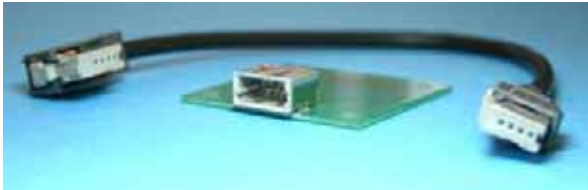
High Speed Transmission



# Hirose Unique Automotive Connectors

## High Speed

### GT17H Series



### GT17HN Series

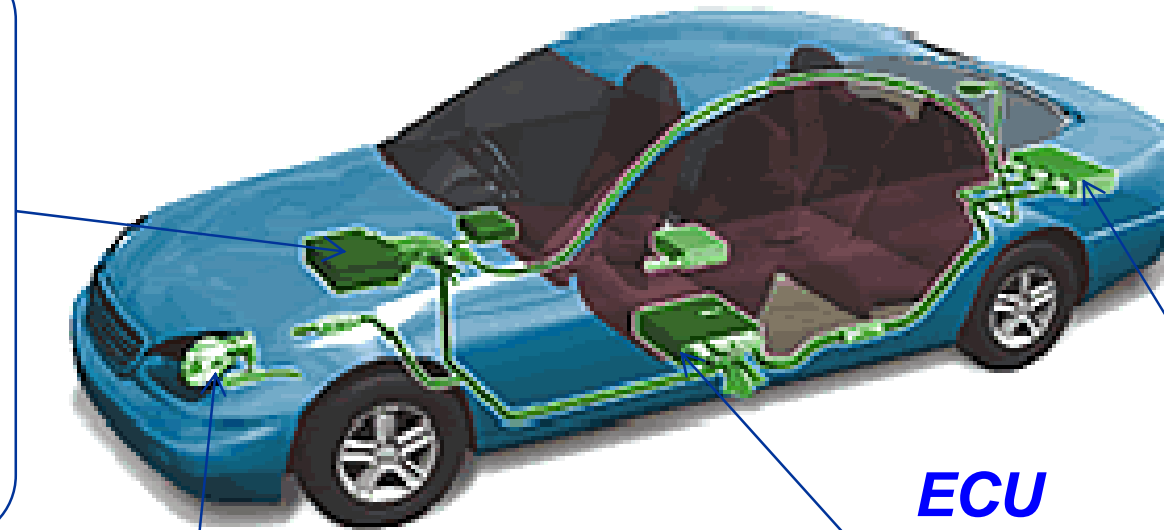


## EV/HEV

### GT28 Series



### GT35 Series



## ECU

### GT8E Series



### GT25 Series



### GT34 Series



### GT23F Series



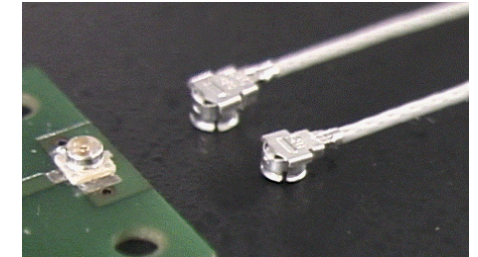
## HID

### GT15EH Series

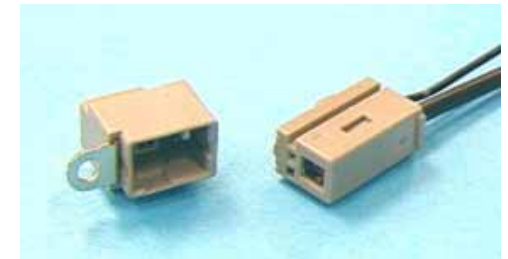


## Antenna

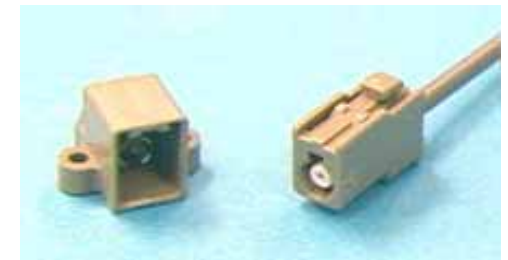
### U.FL



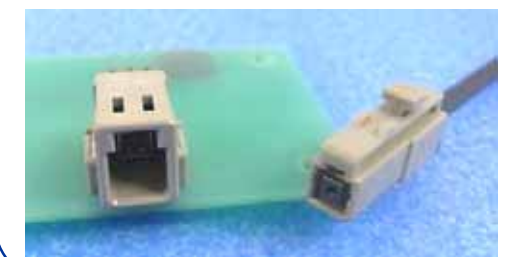
### GT13 Series



### GT16 Series

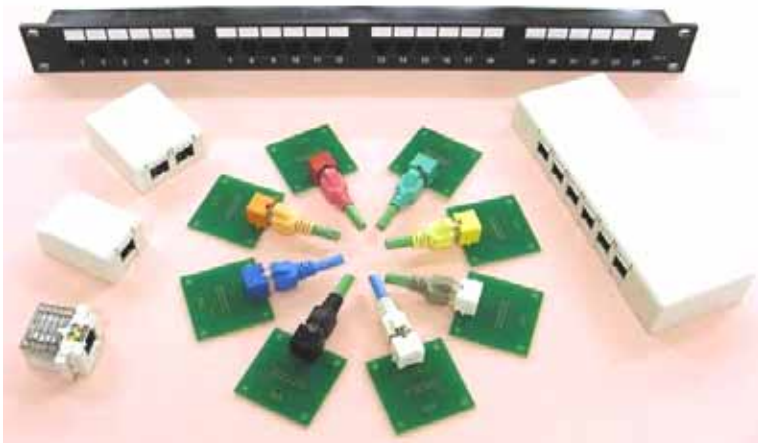


### GT21 Series



# High Speed Transmission Connectors for Network System

- **TM23 Series Meeting CAT6 Requirements**



- **FX10 Series 100 G Optical Module Standard I/F**



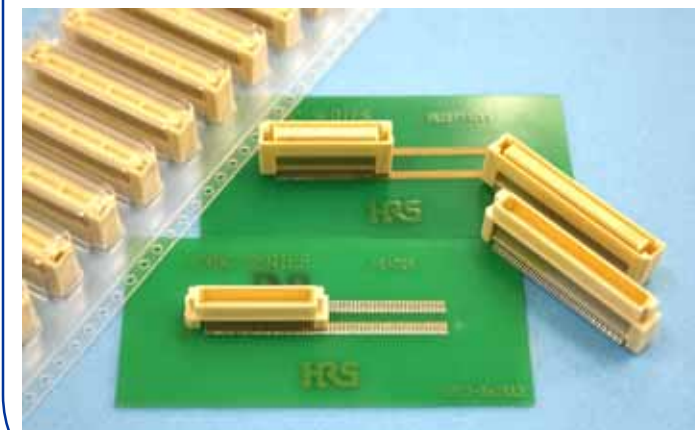
- **XG1 Series Blade Type High Speed Mezzanine Connector**



- **IT3 Series High Speed BGA Mezzanine Connector**



- **FX8C Series SMT Mezzanine Connector**





# Connectors for BTS (RRH)

**High performance products with harsh environment resistance.**

**Environment Resistant Connector**

**Small-sized Signal Connectors**



**Connector for Fan**



**Optical Connector**



**SW20 Series**



**Connector for Power**

**JR25 Series**



**HR41 Series**



**Floating Coax Connectors**

**PO(F) Series**



**Board to Board Connector**



**FX20 Series**

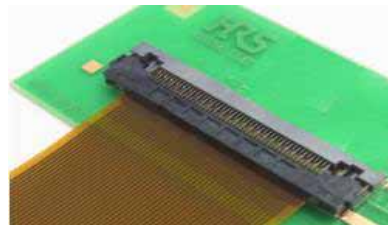


# Connectors for Office Automation



## FFC Connection

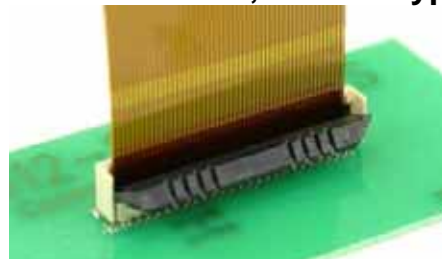
**FH50 Series**  
0.5 mm Pitch,  
Incomplete Lock  
Prevention



**FH28 Series**  
0.5 mm Pitch, Horizontal type

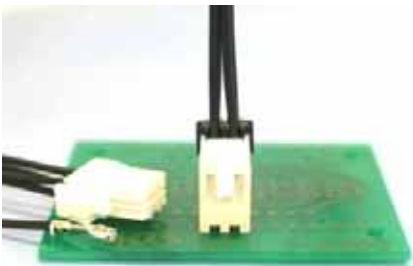


**FH40 Series**  
0.5 mm Pitch, Vertical type



## Power Supply

**DF33C Series**  
3.3 mm Pitch  
4 to 5 Amps



**DF22 Series**  
7.92 mm Pitch  
13 to 30 Amps



## Drawer Connector

**QR/P15 Series**  
Ultra-small with Crimp Contacts



**QR/P18 Series**  
High-pin-count with IDC Contacts



## High Speed Transmission

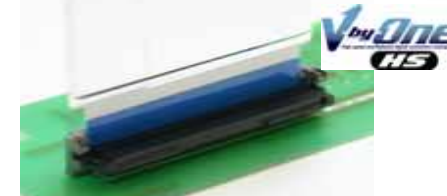
**DH Series**  
1 mm Pitch, Small I/O Connector



**FX18 Series**  
0.8 mm Pitch,  
Mezzanine Connector



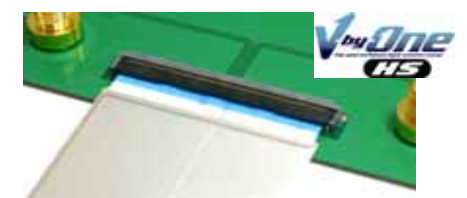
**FH48 Series**  
0.5 mm Pitch for Shielded FFC



**FX16 Series**  
Next Generation, 5.7 Gbps Transmission

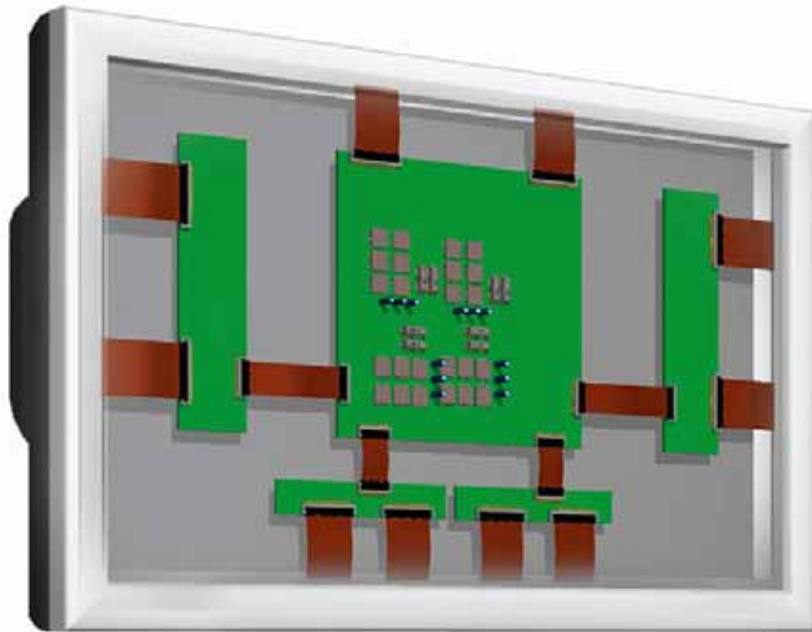


**FH41 Series**  
0.5 mm Pitch for Shielded FFC

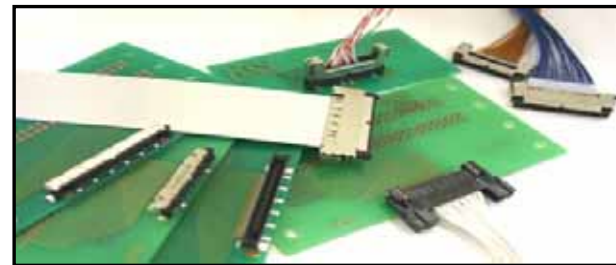


# Connectors for FPD-TV

## • Inner Connector for High Speed Transmission



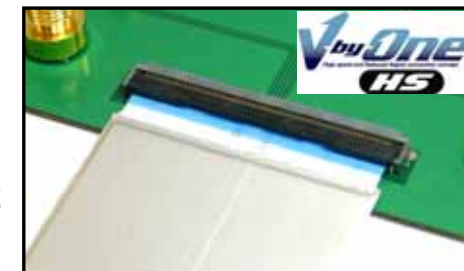
**FX15 Series**  
1 mm Pitch,  
for LVDS/TMDS



**FX16 Series**  
Next Generation High Speed Connector  
up to 5.7 Gbps



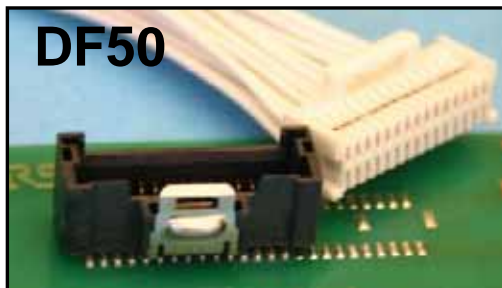
**FH48 Series**  
Pitch: 0.5 mm,  
Vertical mount



**FH41 Series**  
for shielded FFC  
Pitch: 0.5 mm,  
Height: 2.5 mm  
Depth: 6.2 mm

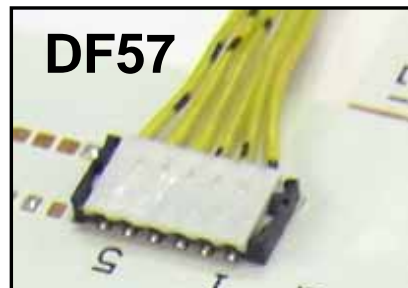
## • Popular Wire to Board and FH Connectors

## • Unique Interface



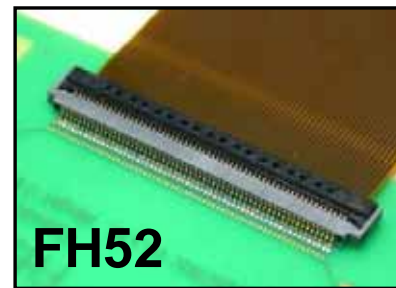
**DF50**

Pitch: 1 mm  
Double Row  
Positive Lock



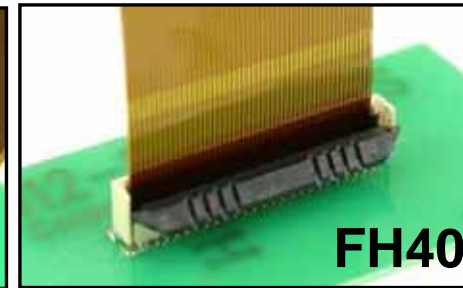
**DF57**

Pitch: 1.2 mm  
Swing Lock



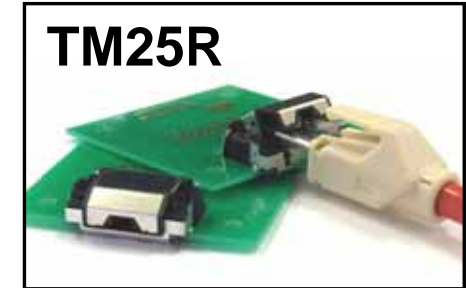
**FH52**

Pitch: 0.5 mm  
Height: 2 mm



**FH40**

Pitch: 0.5 mm  
Height: 5.8 mm  
Depth: 3.55 mm

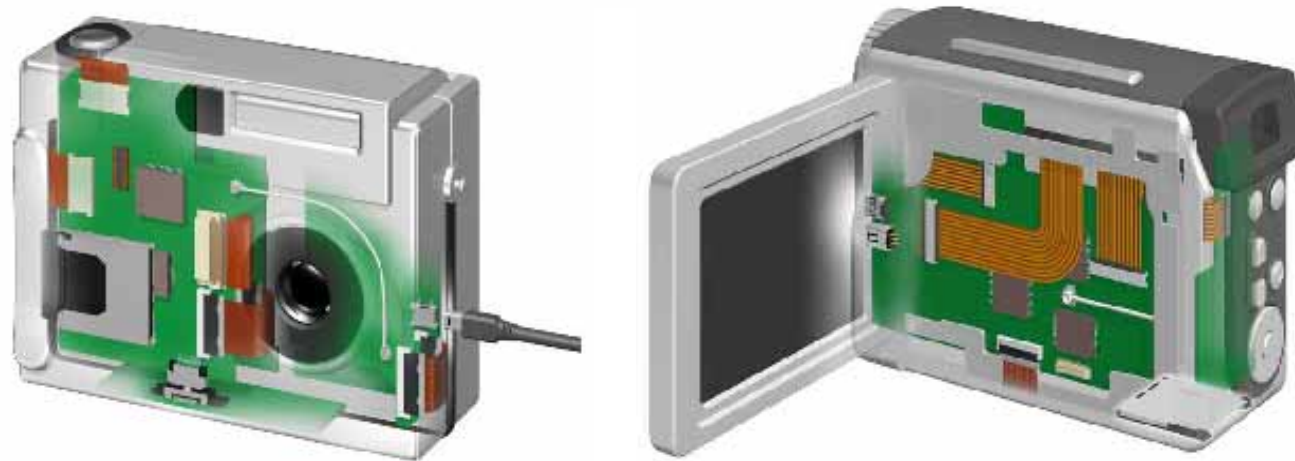


**TM25R**

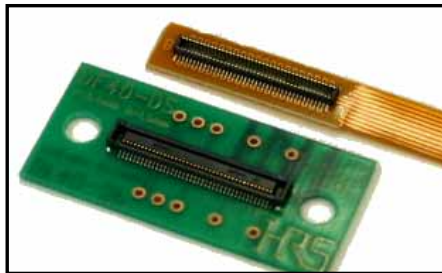
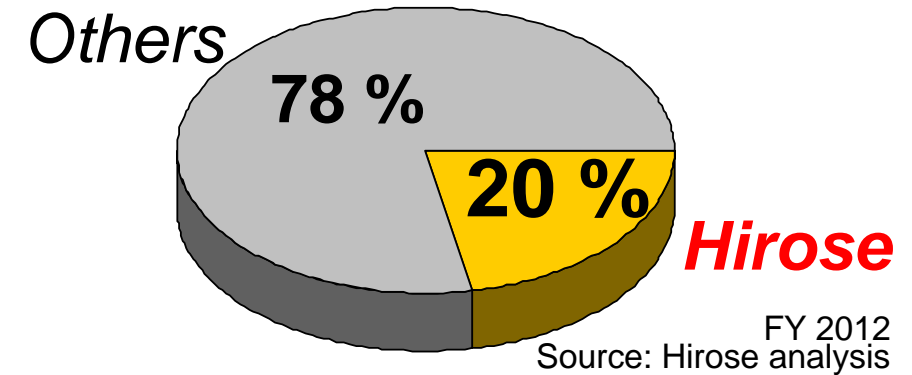
Foldable Open-Close  
RJ-45 Modular Jack



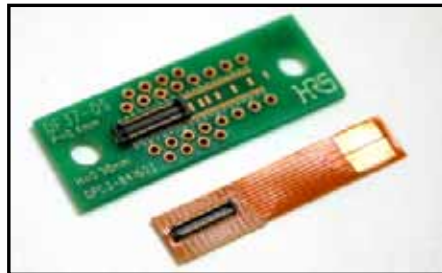
# Connectors for DSC/DVC



● World Wide Market Share  
(Internal connector)



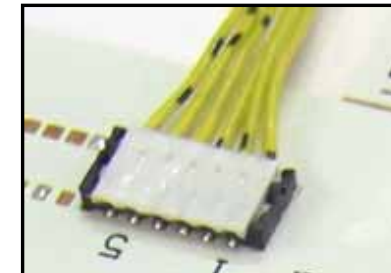
**DF40 Series**  
Pitch: 0.4 mm  
Mating Height: 1.5 mm



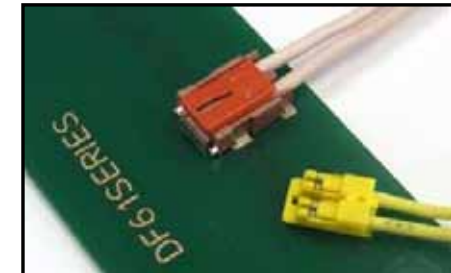
**DF37 Series**  
Pitch: 0.4 mm  
Mating Height: 0.98 mm



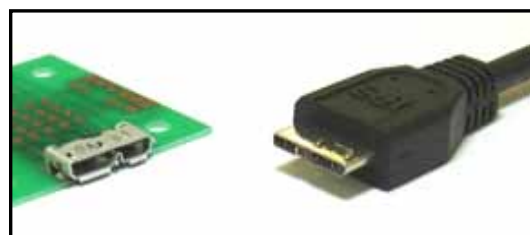
**DF56 Series**  
Pitch: 0.3 mm  
Micro Coaxial Connector



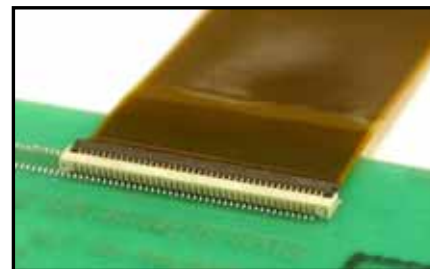
**DF57 Series**  
Pitch: 1.2 mm  
Mating Height: 1.4 mm



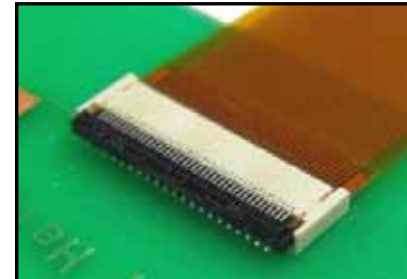
**DF61 Series**  
Pitch: 2.2 mm  
Mating Height: 2.38 mm



**ZX360 Series**  
USB3.0 Connector



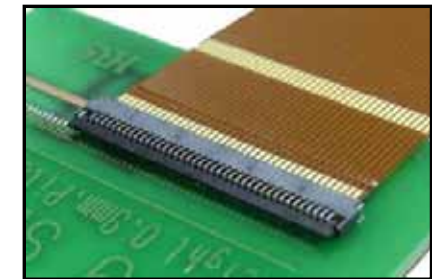
**FH43B Series**  
Pitch: 0.2 mm  
Height: 0.9 mm  
Front Flip



**FH54 Series**  
Pitch: 0.2 mm  
Height: 0.9 mm  
Back Flip



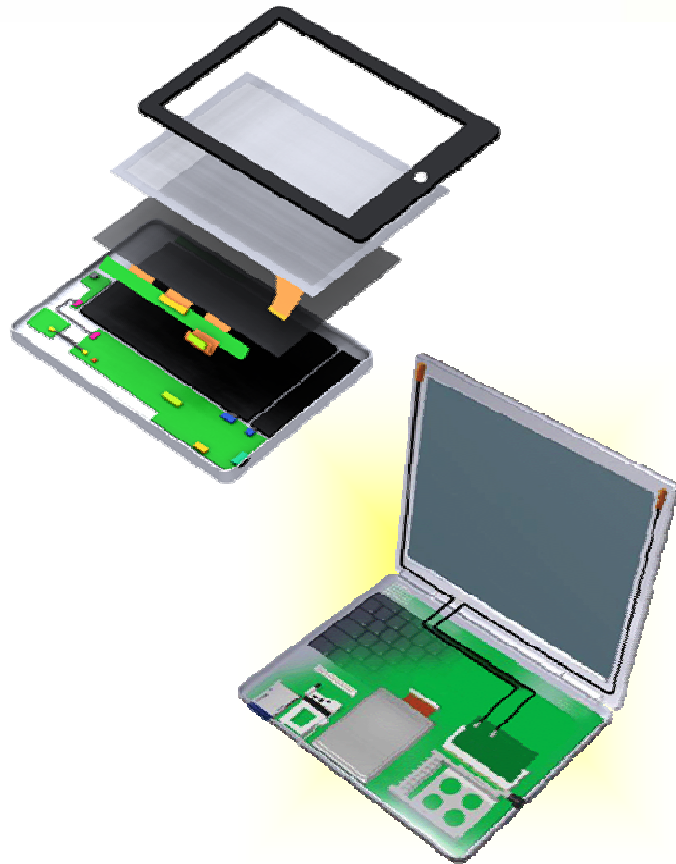
**FH35C Series**  
Pitch: 0.3 mm  
Height: 0.9 mm  
Back Flip  
(Top & Bottom Contact)



**FH34SRJ Series**  
Pitch: 0.5 mm  
Height: 1.0 mm  
Back Flip  
(Top & Bottom Contact)



## Connectors for Notebook/Tablet PC



### ● High Speed

DF40G



EMI prevention  
with shielding

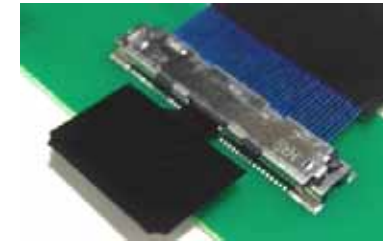
FH55/FH55M



5+ Gbps transmission

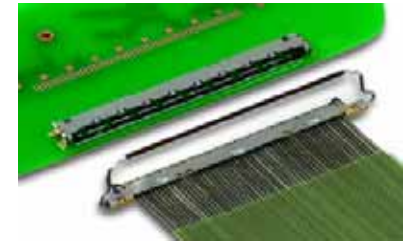
### ● Display

DF80



LVDS, eDP

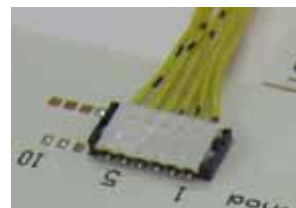
DF81



LVDS, eDP, MIPI

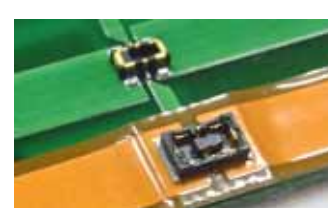
### ● Battery

DF57



0.5 to 2.5 Amps

BM22



4 Amps for power  
0.3 Amps for signal

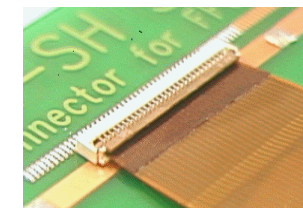
### ● LED Backlight

TF13



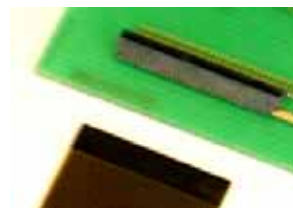
Pitch: 0.4 mm  
Height: 0.9 mm  
4 to 13 pos.

FH19C/SC/D/SD



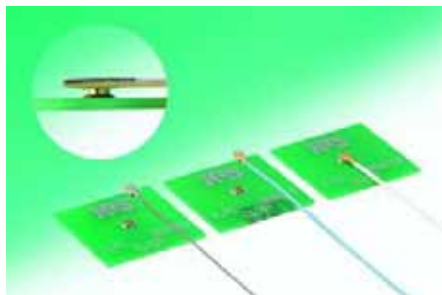
Pitch: 0.5 mm  
Height: 0.9/0.93 mm  
4 to 50 pos.

FH34SRJ



Pitch: 0.5 mm  
Height: 1.0 mm  
4 to 30 pos.

### ● Wireless



X.FL (Bd to FPC)

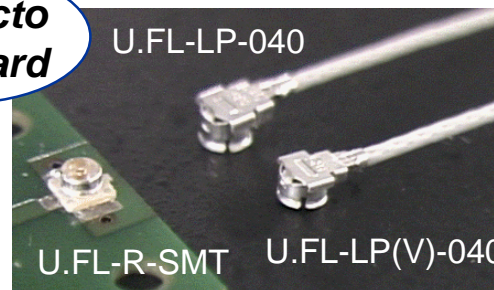
Mated Height:  
0.95 mm Max.  
Up to 6 GHz

X.FL (Low Loss)

Mated Height:  
1.3 mm Max.  
Up to 15 GHz

*De-Facto  
Standard*

U.FL-LP-040



U.FL

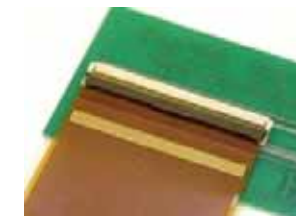
Mated Height:  
2.5 mm Max.  
Up to 6 GHz

U.FL

Mated Height:  
2.0 mm Max.  
Up to 6 GHz

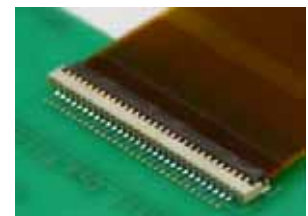
### ● Touch Panel

FH29BJ/DJ



Pitch: 0.2 mm  
Height: 1.2 mm  
34 to 100 pos.

FH36W



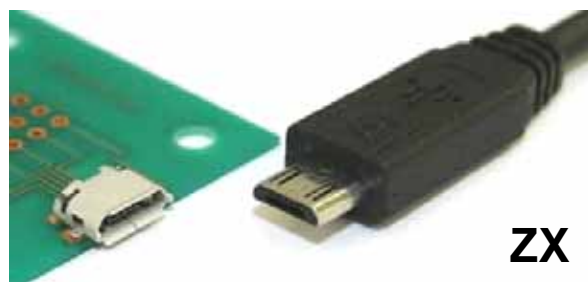
Pitch: 0.3 mm  
Height: 0.95 mm  
11 to 61 pos.

## Connectors for Mobile Phone

### External Connection

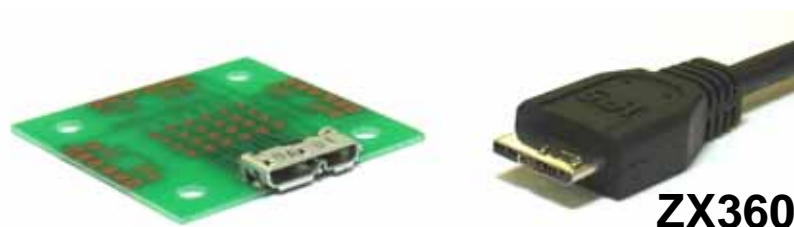
Field-proven Product Quality & Mass Production Capacity

**Micro-USB**



ZX

**USB 3.0**



ZX360



### Internal Connection

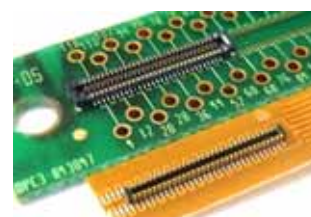
Small & User-Friendly  
**Coaxial**



X.FL

Mated Height: 1.0 mm MAX.  
Mounting Area: 3.4 mm<sup>2</sup>

**BM15**



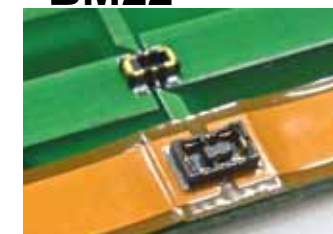
Stacking Height: 0.8 mm  
Pitch: 0.35 mm  
Depth: 1.98 mm

**BM20**



Stacking Height: 0.8 mm  
Pitch: 0.4 mm  
Depth: 2.3 mm

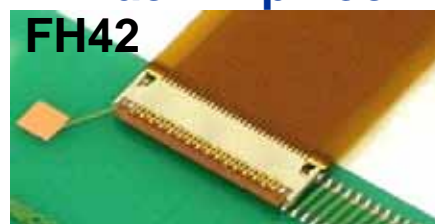
**BM22**



Stacking Height: 0.9 mm  
Depth: 2.64 mm  
Power/Signal Hybrid

### Flip Lock FPC to Board

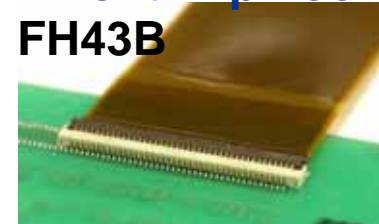
**Back Flip Lock**



FH42

Height: 0.69 mm MAX.  
Pitch: 0.3 mm  
Depth: 3.55 mm

**Front Flip Lock**



FH43B

Height: 0.9 mm  
Pitch: 0.2 mm  
Depth: 2.75 mm



**MS-180**

Height: 0.9 mm Max.  
Mounting Area: 3.88 mm<sup>2</sup>

## For More Information

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**Please visit our website at**

**<http://www.hirose.com/>**

**for the official annual report of  
HIROSE ELECTRIC Co., Ltd.**