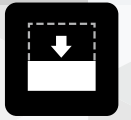
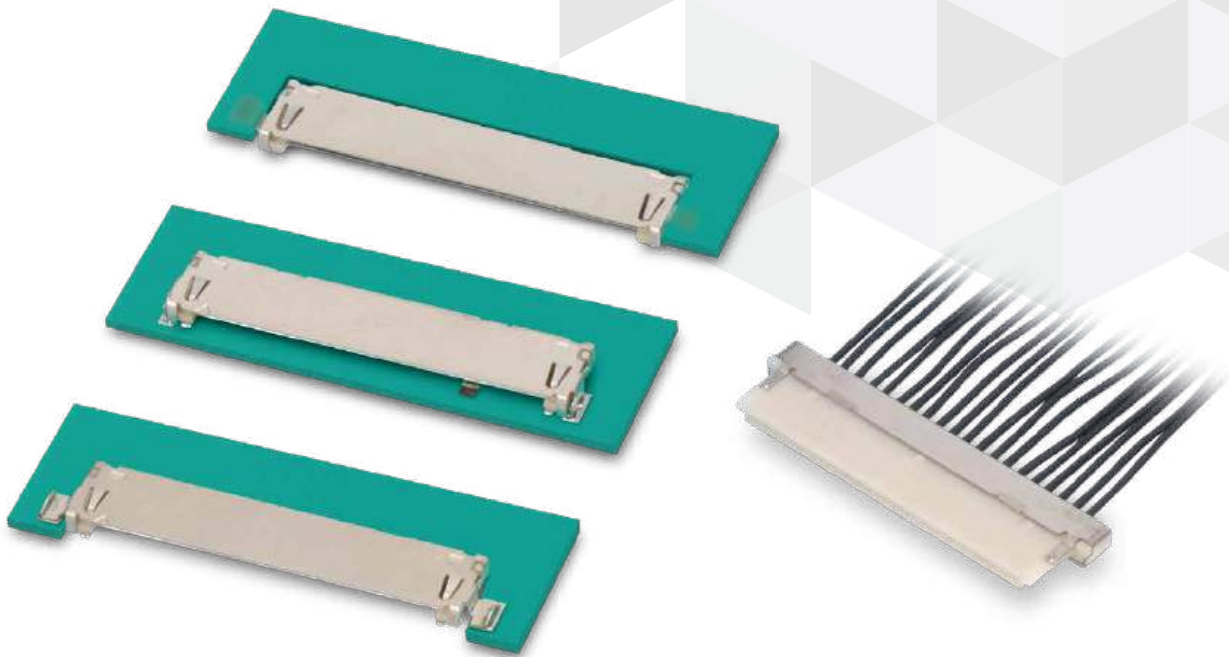


DF19 Series

1.0mm Pitch, Low Profile Wire-to-Board Connectors



Low Profile



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Features

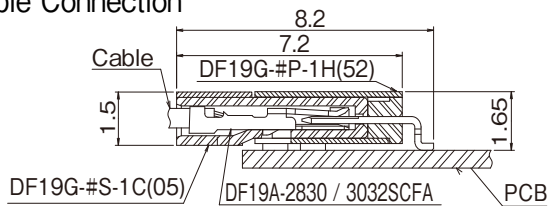
1. De Facto Standard for LCD Panel Connection

DF19 has been accepted as the market standard for LCD panels (12in. or less) due to its high performance for LVD high speed differential signals.

2. Low Profile Design

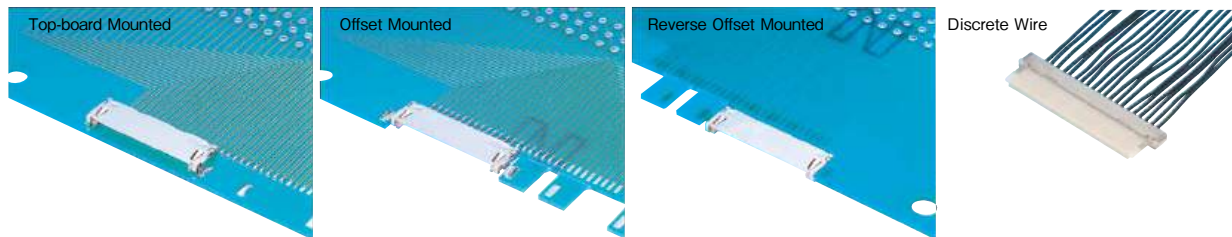
Cable type: 1.5mm thickness (1.6mm Max.)

Cable Connection



3. Wide Varieties

Header is available in top-board, offset and reverse mount offset styles to meet a wide array of application needs.



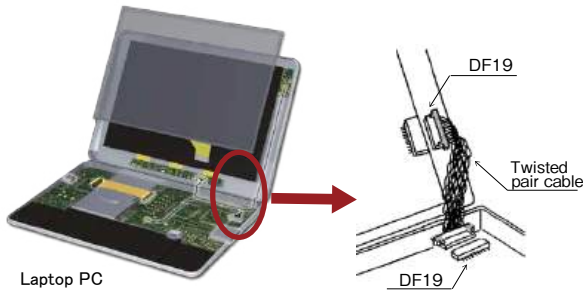
4. Ground Connection with Outer Shell

Metal shell enables ground connection.

5. Glow Wire Compatible (IEC60695-2-11 Standard)

Applications

Mobile phones, LCD connections, DVC, DSC, PDA, camera modules, and other small equipment



Product Specifications

| | | | | | |
|---------------|------------|----------|----------|------------------------------------|--------------|
| Rated Current | 28 AWG | 30 AWG | 32 AWG | Operating Temperature (Note 1) | -35 to +85°C |
| | 1A/pin | 0.9A/pin | 0.8A/pin | Operating Humidity Range (Note 2) | 40 to 80% |
| Rated Voltage | 100V AC/DC | | | Storage Temperature Range (Note 3) | -10 to +60°C |
| | | | | Storage Humidity Range (Note 3) | 40 to 70% |

Note 1: Includes temperature rise due to current flow.

Note 2: Please use without condensation.

Note 3: Applicable to unused items in packaged state.

Note 4: Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.

| Item | Specification | Conditions |
|---------------------------|--|--|
| Insulation Resistance | 500M Ω Min. | 100V DC |
| Withstanding Voltage | No flashover or insulation breakdown. | 300V AC for 1 min. |
| Contact Resistance | 30m Ω Max. | 1mA |
| Vibration | No electrical discontinuity of 1 μ s or more. | Frequency: 10 to 55 Hz, single amplitude of 0.75mm, in 3 direction for 10 cycles |
| Humidity (Steady State) | Contact Resistance: 30m Ω Max. Insulation Resistance: 500M Ω Min. | 96 hours at temperature of 40 \pm 2°C and humidity of 90 to 95% |
| Temperature Cycle | Contact Resistance: 30m Ω Max. Insulation Resistance: 500M Ω Min. | Temperature: -55°C \rightarrow +5 to +35°C \rightarrow +85°C \rightarrow +5 to +35°C Time (Minutes): 30 \rightarrow 10 \rightarrow 30 \rightarrow 10 for 5 cycles |
| Mating Durability | Contact Resistance: 30m Ω Max. | 30 cycles |
| Soldering Heat Resistance | No deformation of the insulator parts affecting performance. | Re-flow soldering: At the recommended temperature profile Manual soldering: Soldering iron temperature 350°C, 5 seconds |

Materials / Finish

| Product | Component | Material | Finish / Color | Remarks | RoHS2 |
|----------------------|----------------|-----------------|-----------------------|---------|-------|
| Pin Header | Insulator | Polyamide | Black or Beige | UL94V-0 | ○ |
| | Contacts | Phosphor Bronze | Partially Gold Plated | - | |
| | Exterior Shell | Phosphor Bronze | Partially Tin Plated | - | |
| Crimp Case | Insulator | Polyamide | Beige | UL94V-0 | |
| | Exterior Shell | Stainless Steel | Tin Plated | - | |
| Socket Crimp Contact | Contact | Phosphor Bronze | Gold 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.

Connector

DF19 # - # P - 1 H (52)

① ② ③ ④ ⑤ ⑥ ⑧

DF19 # - # S - 1 F - GND

① ② ③ ④ ⑤ ⑥ ⑦

| | | | |
|-----------------|---|--------------------------------------|--|
| ① Series Name | DF19 | ③ No. of Pos. | 8, 14, 20, 30 (Note) |
| ② Configuration | Pin Header G: Top-board Mouted (1.65mm Height) K: Offset Mounted (1.0mm Height) L: Offset Mounted (1.1mm Height) KR: Reverse Offset Mounted Version of DF19K (1.0mm Height) Crimp Socket Blank: No Exterior Shell G: With Exterior Shell (EMI Prevention Specification) | ④ Connector Type | S: Single Row Socket P: Single Row Pin Header |
| | | ⑤ Contact Pitch | 1.0mm |
| | | ⑥ Mounting Type/ Termination Type | H: Right Angle SMT C: Crimp Case |
| | | ⑦ Specification | (52): Gold plated, tape & reel packaging |

Note: The pin count availabilities vary based on connection style.

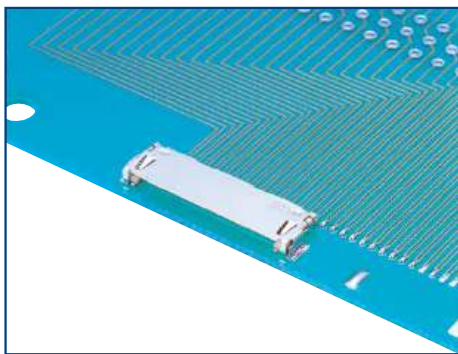
Crimp Contact

DF19A - 2830 SCF A (##)

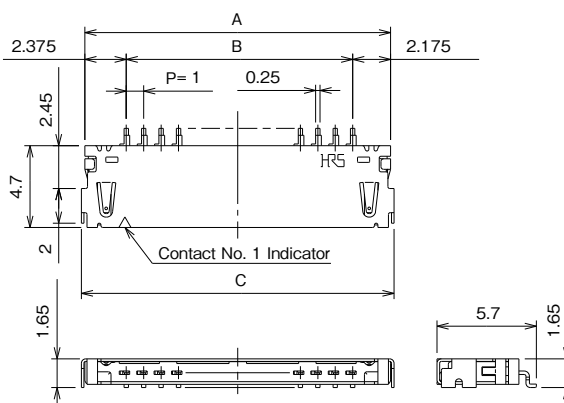
① ② ③ ④

| | | | |
|------------------------------|------------------------------------|-------------|---|
| ① Conductor Size | 2830: 28-30 AWG 3032: 30-32 AWG | ③ Plating | A: Gold Plated |
| ② Contact Type/ Packaging | SCF: Socket Contact, Reel | ④ Packaging | Blank: 10,000pcs per reel (41): 20,000pcs per reel |

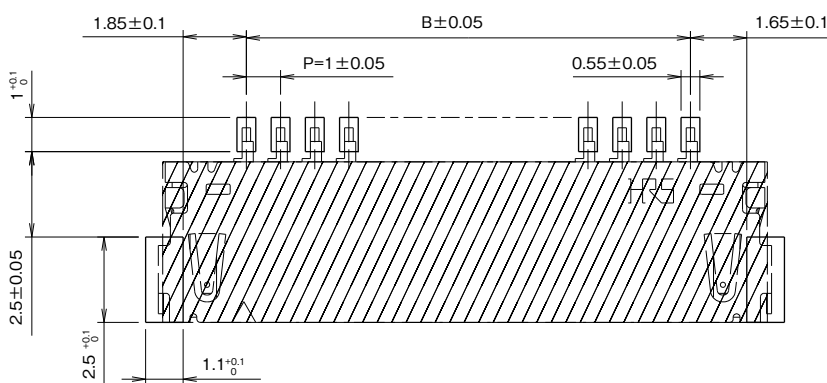
Right Angle Pin Header (SMT) (Top-Board Mounted Type)



Pictured mounted on board.



Recommended PCB Mounting Pattern

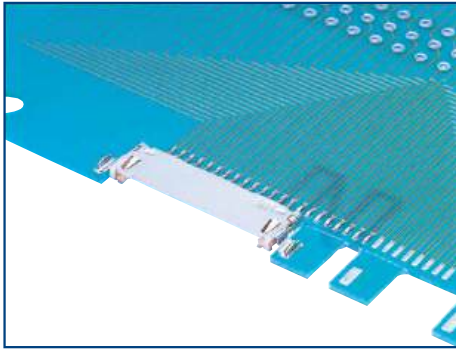


Note: If there is a pattern on the portion and resist is not applied, it may come into contact with the ground plate.

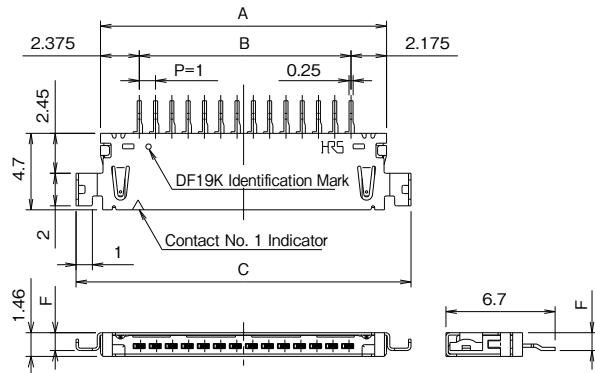
Unit : mm

| Part No. | HRS No. | No. of Pos. | A | B | C | Remarks | Purchase Unit |
|------------------|------------------|-------------|-------|------|-------|---------------------------|-------------------|
| DF19G-8P-1H(52) | CL0685-0021-0-52 | 8 | 11.55 | 7.0 | 11.95 | 1.65mm Height Above Board | 1,000pcs per reel |
| DF19G-14P-1H(52) | CL0685-0004-0-52 | 14 | 17.55 | 13.0 | 17.95 | | |
| DF19G-20P-1H(52) | CL0685-0006-6-52 | 20 | 23.55 | 19.0 | 23.95 | | |
| DF19G-30P-1H(52) | CL0685-0015-7-52 | 30 | 33.55 | 29.0 | 33.95 | | |

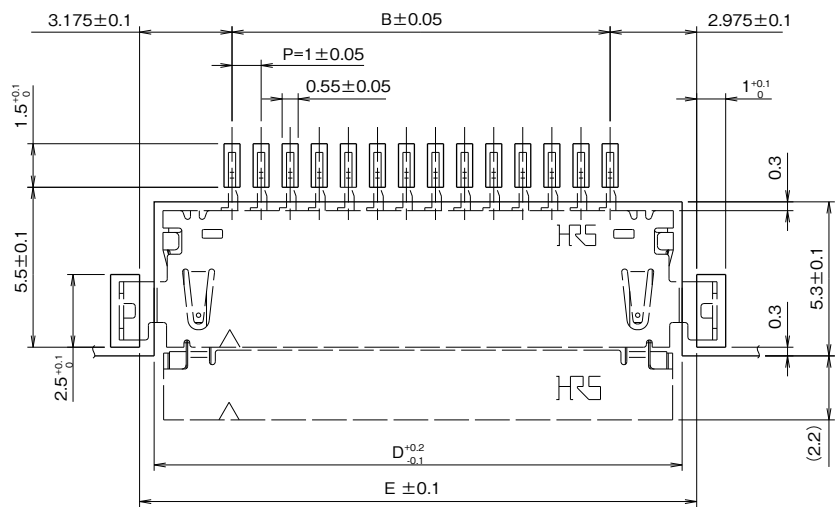
Right Angle Pin Header (SMT) (Offset Mounted Type)



Pictured mounted on board.



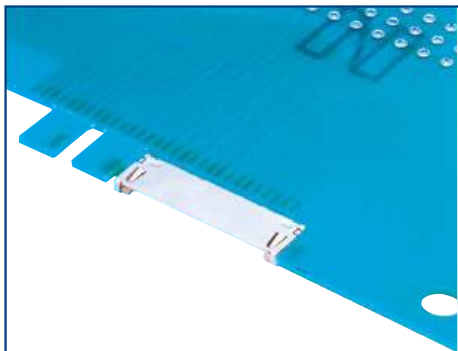
Recommended PCB Mounting Pattern



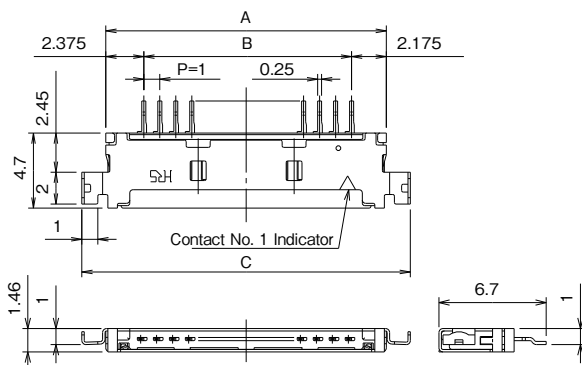
Unit : mm

| Part No. | HRS No. | No. of Pos. | A | B | C | D | E | F | Remarks | Purchase Unit |
|------------------|------------------|-------------|-------|------|-------|-------|-------|-----|--------------------------|-------------------|
| DF19K-20P-1H(52) | CL0685-0008-1-52 | 20 | 23.55 | 19.0 | 26.55 | 24.15 | 25.15 | 1.0 | 1.0mm Height Above Board | 1,000pcs per reel |
| DF19K-30P-1H(52) | CL0685-0032-6-52 | 30 | 33.55 | 29.0 | 36.55 | 34.15 | 35.15 | 1.0 | | |
| DF19L-14P-1H(52) | CL0685-0003-8-52 | 14 | 17.55 | 13.0 | 20.55 | 18.15 | 19.15 | 1.1 | 1.1mm Height Above Board | |
| DF19L-20P-1H(52) | CL0685-0019-8-52 | 20 | 23.55 | 19.0 | 26.55 | 24.15 | 25.15 | 1.1 | | |
| DF19L-30P-1H(52) | CL0685-0016-0-52 | 30 | 33.55 | 29.0 | 36.55 | 34.15 | 35.15 | 1.1 | | |

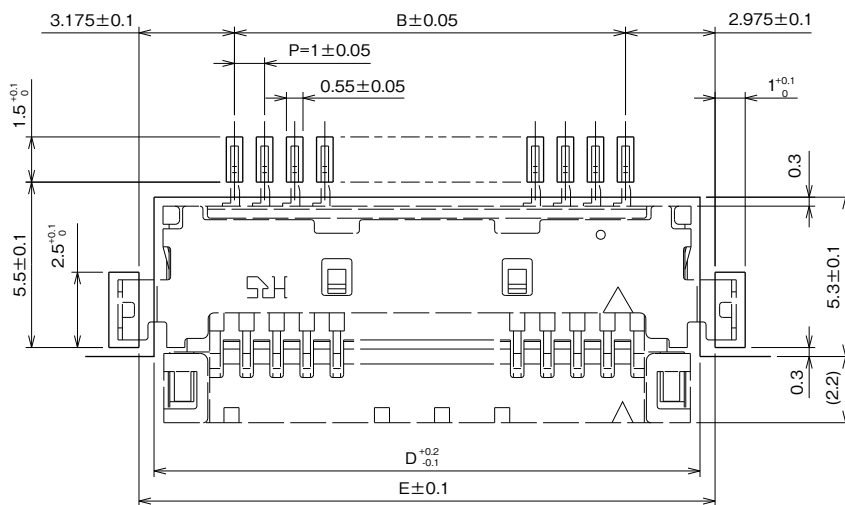
Right Angle Pin Header (SMT) (Reverse Offset Mounted Type)



Pictured mounted on board.



Recommended PCB Mounting Pattern



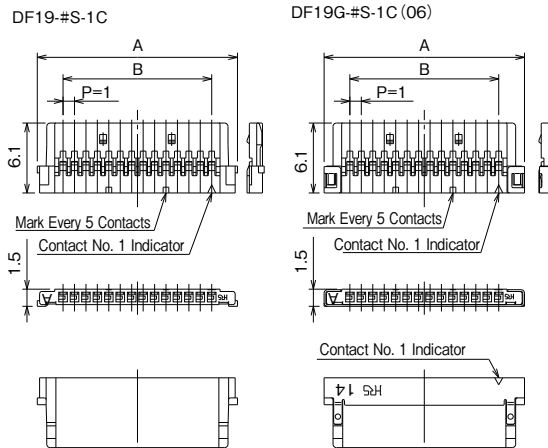
Unit : mm

| Part No. | HRS No. | No. of Pos. | A | B | C | D | E | Remarks | Purchase Unit |
|-------------------|------------------|-------------|-------|------|-------|-------|-------|--------------------------|-------------------|
| DF19KR-20P-1H(52) | CL0685-0023-5-52 | 20 | 23.55 | 19.0 | 26.55 | 24.15 | 25.15 | 1.0mm Height Above Board | 1,000pcs per reel |

Single Row Socket (Cable Type)



Shown with terminated and installed contacts



Unit : mm

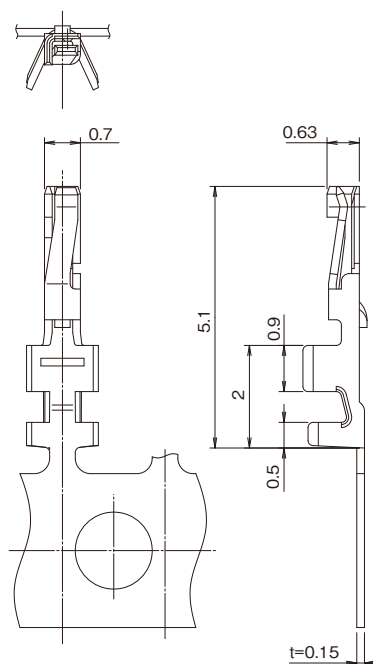
| Part No. | HRS No. | No. of Pos. | A | B | Purchase Unit |
|-------------|------------------|-------------|------|------|----------------|
| DF19-14S-1C | CL0685-0012-9-00 | 14 | 17.5 | 13.0 | 100pcs per bag |
| DF19-20S-1C | CL0685-0011-6-00 | 20 | 23.5 | 19.0 | |
| DF19-30S-1C | CL0685-0013-1-00 | 30 | 33.5 | 29.0 | |

With Exterior Shell (EMI Prevention Specification)

Unit : mm

| Part No. | HRS No. | No. of Pos. | A | B | Purchase Unit |
|------------------|------------------|-------------|------|------|----------------|
| DF19G-8S-1C(06) | CL0685-0022-2-06 | 8 | 11.5 | 7.0 | 100pcs per bag |
| DF19G-14S-1C(06) | CL0685-0005-3-06 | 14 | 17.5 | 13.0 | |
| DF19G-20S-1C(06) | CL0685-0007-9-06 | 20 | 23.5 | 19.0 | |
| DF19G-30S-1C(06) | CL0685-0014-4-06 | 30 | 33.5 | 29.0 | |

Socket Crimp Contacts



| Part No. | HRS No. | Purchase Unit (##): Blank | Purchase Unit (##): (41) |
|--------------------|------------------|------------------------------|-----------------------------|
| DF19A-2830SCFA(##) | CL0685-0048-6-## | 10,000pcs per reel | 20,000pcs per reel |
| DF19A-3032SCFA(##) | CL0685-0046-0-## | | |

Applicable Wire (Tin Plated Annealing Copper Wire)

| Part No. | UL | Wire Size | Stranded Wire Structure | Sectional Area | Jacket Diameter | Strip Length |
|--------------------|---------------------|-----------|-------------------------|----------------------|-----------------|--------------|
| DF19A-2830SCFA(##) | 1571 (Thin Type) | 28 AWG | 7/0.127mm | 0.089mm ² | φ 0.5-0.6mm | 1.2-1.9mm |
| | | 30 AWG | 7/0.1mm | 0.055mm ² | | |
| DF19A-3032SCFA(##) | | 30 AWG | 7/0.1mm | 0.055mm ² | | |
| | | 32 AWG | 7/0.08mm | 0.035mm ² | | |

Note: For applicable cable other than those listed above, refer to Crimp Condition Table. Crimp Condition Table is available from Part No. link.
(If you are using a cable that is not listed in Crimp Condition Table, please contact a Hirose sales representative.)

Applicable Tools

| Type | Part No. | HRS No. | Applicable Contact |
|------------|-------------|------------------|--|
| Applicator | AP105-DF19S | CL0901-4571-3-00 | DF19A-2830SCFA(##) DF19A-3032SCFA(##) |
| Press Unit | CM-105C | CL0901-0001-0-00 | - |

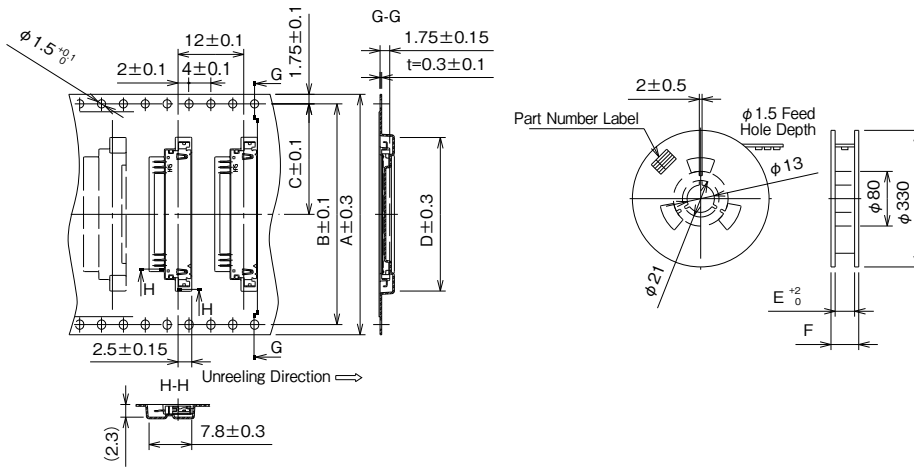
Note 1: Please conduct crimping work according to the "Crimping Quality Standard" and "Crimping Condition Table".

Note 2: Issues with non-Hirose specified tools are outside the scope of warranty.

Note 3: When non-authorized tools are used, please consult with Hirose sales representative about provision of the drawing of the crimping tool.

Embossed Carrier Tape Dimensions (JIS-C-0806 Standard)

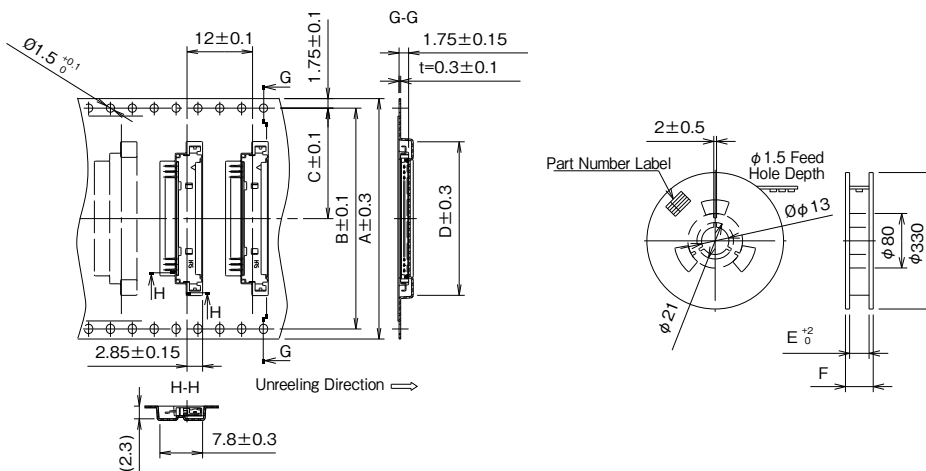
- DF19G-#P-1H(52)
- DF19K-#P-1H(52)
- DF19L-#P-1H(52)



Unit : mm

| Part No. | No. of Pos. | A | B | C | D | E | F | Remarks |
|------------------|-------------|------|------|------|------|------|------|--------------------------------------|
| DF19G-8P-1H(52) | 8 | 24.0 | - | 11.5 | 16.1 | 24.4 | 30.4 | Top-board Mounted (1.65mm Height) |
| DF19G-14P-1H(52) | 14 | 44.0 | 40.4 | 20.2 | 22.1 | 44.4 | 50.4 | |
| DF19G-20P-1H(52) | 20 | 44.0 | 40.4 | 20.2 | 28.1 | 44.4 | 50.4 | |
| DF19G-30P-1H(52) | 30 | 56.0 | 50.2 | 26.2 | 38.1 | 56.4 | 62.4 | Offset Mounted (1.0mm Height) |
| DF19K-20P-1H(52) | 20 | 44.0 | 40.4 | 20.2 | 28.1 | 44.4 | 50.4 | |
| DF19K-30P-1H(52) | 30 | 56.0 | 52.4 | 26.2 | 38.1 | 56.4 | 62.4 | Offset Mounted (1.1mm Height) |
| DF19L-14P-1H(52) | 14 | 44.0 | 40.4 | 20.2 | 22.1 | 44.4 | 50.4 | |
| DF19L-20P-1H(52) | 20 | 44.0 | 40.4 | 20.2 | 28.1 | 44.4 | 50.4 | |
| DF19L-30P-1H(52) | 30 | 56.0 | 52.4 | 26.2 | 38.1 | 56.4 | 62.4 | |

● DF19KR-20P-1H(52)



Unit : mm

| Part No. | No. of Pos. | A | B | C | D | E | F | Remarks |
|-------------------|-------------|------|------|------|------|------|------|--|
| DF19KR-20P-1H(52) | 20 | 44.0 | 40.4 | 20.2 | 28.1 | 44.4 | 50.4 | Reverse type of DF19K Offset Mounted (1.0mm Height) |

Crimping Precautions

■ Items Required Prior to Crimping

The work-related documents shown below are required before starting harness assembly.

(The ● mark represents required documents.)

Please contact your Hirose sales representative if you do not have these documents.

| Document Title | Description | Automatic Crimping Machine | Hand Crimping Tool | Remarks |
|---|--|----------------------------|--------------------|---|
| ① Crimping Machine Main Unit Instruction Manual | Explanation of main press unit | ● | - | Bundled with purchase of main press machine unit. |
| ② Applicator Instruction Manual | Crimp Method | ● | - | Bundled with purchase of applicator. |
| ③ Applicator Spare Parts List | Applicator Installation Instruction | ● | - | |
| ④ Crimp Conditions | Crimp height, tensile strength standard value | ● | - | |
| ⑤ Crimp Quality Standards | Various standards for crimping conditions | ● | - | |
| ⑥ Hand Tool Operating Instructions | Crimp method, crimp height and tensile height standard value | - | ● | Bundled with purchase of hand tool. |
| ⑦ Cable Assembly Instruction | Cable assembly | ● | ● | Please refer to our website. |

■ Tools

- Use tools designated by Hirose when crimping.
- Crimping performed using tools other than those specified is outside the scope of warranty.
- The operating instructions are available for the crimping machine and the applicator. Be sure to carefully read the operating instructions manual before beginning work.

■ Applicable Cables

Refer to Crimp Condition Table when using cables other than applicable wire. Crimp Condition Table is available from Part No. link.

(If you are using a cable that is not listed in Crimp Condition Table, please contact a Hirose sales representative.)

[Precautions]

- Cables applicable to crimping connectors are tin-plated stranded soft-copper wire.
- Avoid crimping solid wire, wires with polyester threads or tin coated wires.
- Avoid crimping two cables together.
- The crimp height setting values (Note) may vary between tin-plated and gold-plated terminals even if the same electric wires are used.
- The crimp height setting values (Note) may vary depending on the difference in the core wire configuration even if the computed cross-sectional area is the same.

Note: The crimp height is an important item that determines crimping quality. We execute crimping tests for each electric wire to ensure the optimal value for the crimp height with high precision, thereby ensuring optimal setup values.

Precautions

| | |
|--|--|
| 1. Recommended Temperature Profile | <div style="text-align: center;"> </div> <p>Note 1: Up to 2 cycles of reflow soldering are possible under the same conditions, provided that there is a return to normal temperature between the first and second cycle.</p> <p>Note 2: The temperature profile indicates the temperature of the surface of the connector lead.</p> <p>Note 3: The color of the grounding plate may change color, although this does not affect the product performance.</p> |
| 2. Recommended Manual Soldering Conditions | Manual soldering: 350±10°C for 5 seconds |
| 3. Recommended Metal Mask Thickness | 0.15mm |
| 4. Board Warpage | Maximum of 0.03mm at the connector center, with both ends of the connector as reference points. |
| 5. Cleaning Conditions | Refer to "Product Guidelines (Board-to-Wire Connector Guidelines)" |
| 6. Termination Conditions | Refer to "Product Guidelines (Board-to-Wire Connector Guidelines)" |
| 7. Cautions | <ul style="list-style-type: none"> ■ Excessive prying during mating and unmating may result in damage. ■ Black spots may appear on the mold resin but this does not affect the product quality. |
| 8. Handling | Please refer to the materials listed below on our company website when handling this product. <ul style="list-style-type: none"> ■ Product Guidelines (Board-to-Wire Connector Guidelines) ■ Crimp Condition Table ■ Crimp Quality Standard |

While Taking into Consideration

Specifications mentioned in this catalog are reference values.

When considering to order or use this product, please review the Drawing and Product Specifications sheets.

Use an appropriate cable when using the connector in combination with cables.

If considering usage of a non-specified cable, please contact your sales representative.

If assembly process is done by jigs & tools which are not identified by Hirose, the warranty of the product may be affected.

If considering usage for below mentioned applications, please contact your sales representative.

In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/ defense etc. Hirose must review before assurance of reliability can be given.