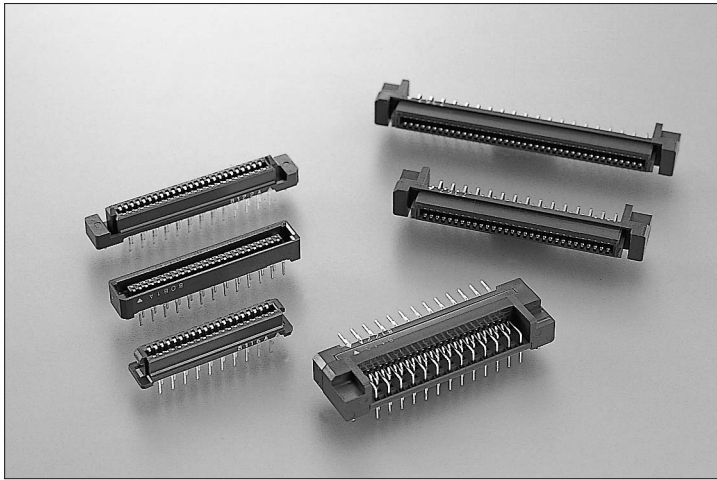


HIGH DENSITY CONNECTORS
50mil(1.27mm) PITCH 2 PIECE CONNECTOR

8900 SERIES





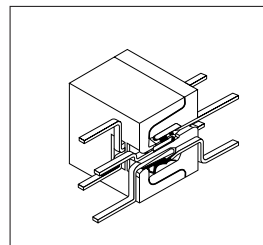
FEATURES

- Low insertion and withdrawal force
- Mating process is reliable and self-aligning
- Guide pins assure smooth mating and un-mating
- Insulator protects the contacts from damage or breakage
- PPS insulator offers high temperature resistance
- Stacked mating heights of 7, 8, 9, 10 and 12mm (0.276, 0.315, 0.354, 0.394 and 0.472")
- Eight sizes: 20, 30, 40, 50, 60, 80, 100 and 120 pins
- Audible "click" assures users of complete mating
- Three variations; Horizontal, Vertical, and Stacked
- 3 rows of terminals conserve board space
- RoHS compliance

SPECIFICATIONS

- Insulator : Glass-filled PPS (UL 94V-0), Brown
Alignment plate : Glass-filled Nylon 66 (UL 94V-0), Brown
- Contact material : Copper alloy
- Plating : Contact area ; Gold over Nickel
(1)Standard : 0.05 μ m min. Gold
(2)Upon request : 0.25 μ m min. Gold
Terminal area ; Tin copper over Nickel (Receptacle)
Gold over Nickel (Plug)
- Current rating : 0.5A per contact
- Contact resistance : 40m Ω max.
- Dielectric withstanding voltage : 650V AC for 1 minute
- Insulation resistance : 1,000M Ω min. at 500V DC
- Operating temperature : -55°C to +85°C
- Insertion force :
1.9kg max. / 20 pin, 3.8kg max. / 40 pin,
5.7kg max. / 60 pin, 9.5kg max. / 100 pin
- Withdrawal force :
0.3kg min. / 20 pin, 0.6kg min. / 40 pin,
0.9kg min. / 60 pin, 1.5kg min. / 100 pin

• 8900 Series Concept



Today, new electronic equipment must be made lighter and smaller with more functions than existing equipment. Therefore, KEL has developed the highly reliable mating concept in miniature sizes for Horizontal, Vertical, and Stacked applications. Select mating heights from 7 to 12 mm for your board stacking application.

ORDER CODE

89 - - - - - **F**

- **F** : RoHS Compliance
- Standoff height (Straight type only)
Receptacle
A : For mating heights of 7, 9mm (0,276, 0,354") (without alignment plate)
B : For mating heights of 8, 10mm (0,315, 0,394") (without alignment plate)
D : For mating heights of 10, 12mm (0,394, 0,472") (with alignment plate)
Plug
A : For mating heights of 7, 8, 10mm (0,276, 0,315, 0,394") (without alignment plate)
C : For mating heights of 9, 10, 12mm (0,354, 0,394, 0,472") (with alignment plate)
- Plating of contact area
Omit : Au 0.05 μ m (Standard)
D : Au 0.25 μ m
- Contact tail style
S : Straight
L : Right angle (with flanges only)
- Contact name
177 : Receptacle (8901, 8903)
178 : Plug (8911, 8913)
- Number of contacts
020 : 20 pin
030 : 30 pin
040 : 40 pin
050 : 50 pin
060 : 60 pin
080 : 80 pin
100 : 100 pin
120 : 120 pin
- Series name
Receptacle
8901 : With flanges and hooks
8903 : Without flanges and hooks
Plug
8911 : With flanges and hooks
8913 : Without flanges and hooks

• Please consult sales office regarding non-standard items.
* See the table on page B-5 for 10mm mating height combinations.

Mating Variations

Horizontal Mating

Unit:mm(inch)

Vertical Mating

Unit:mm(inch)

| Standoff Height | H |
|-----------------|----------------|
| A | 9.105 (0.359) |
| C | 11.105 (0.437) |

| Standoff Height | J |
|-----------------|----------------|
| A | 9.105 (0.359) |
| B | 10.105 (0.398) |
| D | 12.105 (0.477) |

Stacked Mating

Unit:mm(inch)

Additional mating combinations shown below.

8900 Series Stacked Mating Combinations

8911 series with flanges and hooks

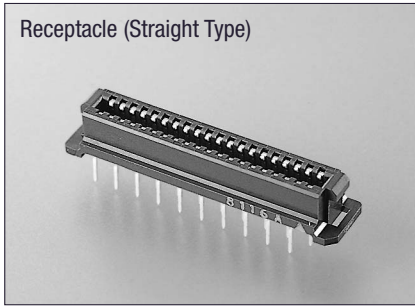
8903 series without flanges and hooks

■ Selection Guide

| Type | 7mm(0.276inch) | 8mm(0.315inch) | 9mm(0.354inch) | 10mm(0.394inch) | 12mm(0.472inch) |
|---------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| With flanges and hooks | 8911-□□□-178S□-A-F | 8911-□□□-178S□-A-F | 8911-□□□-178S□-C-F | 8911-□□□-178S□-A-F | 8911-□□□-178S□-C-F |
| | 8901-□□□-177S□-A-F | 8901-□□□-177S□-B-F | 8901-□□□-177S□-A-F | 8901-□□□-177S□-D-F | 8901-□□□-177S□-D-F |
| | 8911-□□□-178S□-C-F | 8901-□□□-177S□-B-F | 8901-□□□-177S□-A-F | 8911-□□□-178S□-C-F | 8901-□□□-177S□-B-F |
| Without flanges and hooks | 8913-□□□-178S□-A-F | 8913-□□□-178S□-A-F | 8913-□□□-178S□-C-F | 8913-□□□-178S□-A-F | 8913-□□□-178S□-C-F |
| | 8903-□□□-177S□-A-F | 8903-□□□-177S□-B-F | 8903-□□□-177S□-A-F | 8903-□□□-177S□-D-F | 8903-□□□-177S□-D-F |
| | 8913-□□□-178S□-C-F | 8903-□□□-177S□-B-F | 8903-□□□-177S□-A-F | 8913-□□□-178S□-C-F | 8903-□□□-177S□-D-F |

8903-□□□-177S□-□-F (Receptacle, Without flanges and hooks)

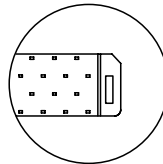
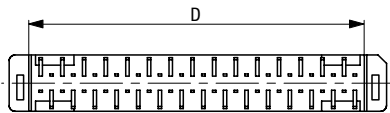
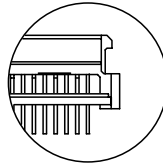
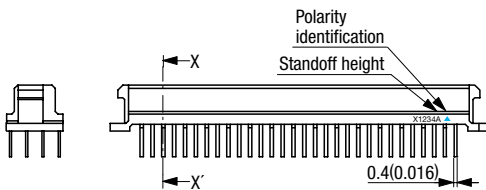
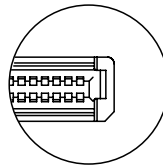
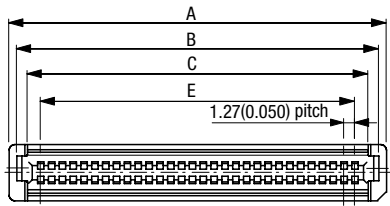
Receptacle (Straight Type)



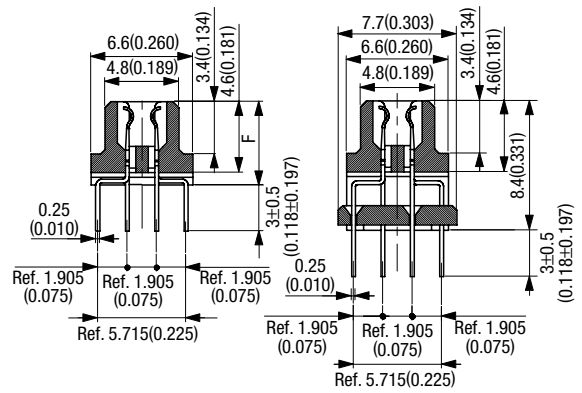
Unit:mm(inch)

A, B type (Standoff height)

D type



X-X' Cross Section



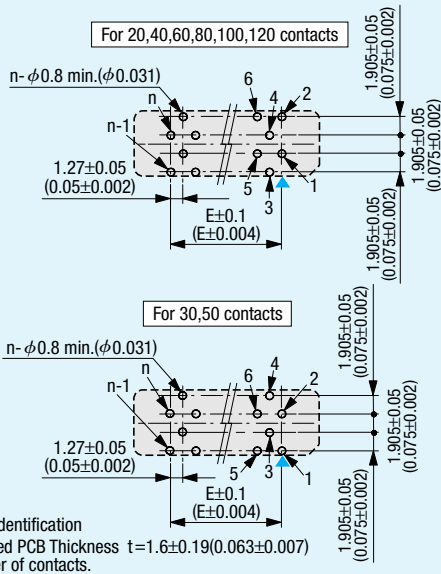
A, B type

D type

| Type | F |
|------|----------------|
| A | 5.4 (0.213) |
| B | 6.4 (0.252) |

| Packaging style |
|-----------------|
| Pipe |

Printed Circuit Board Layout
(Component Side View)



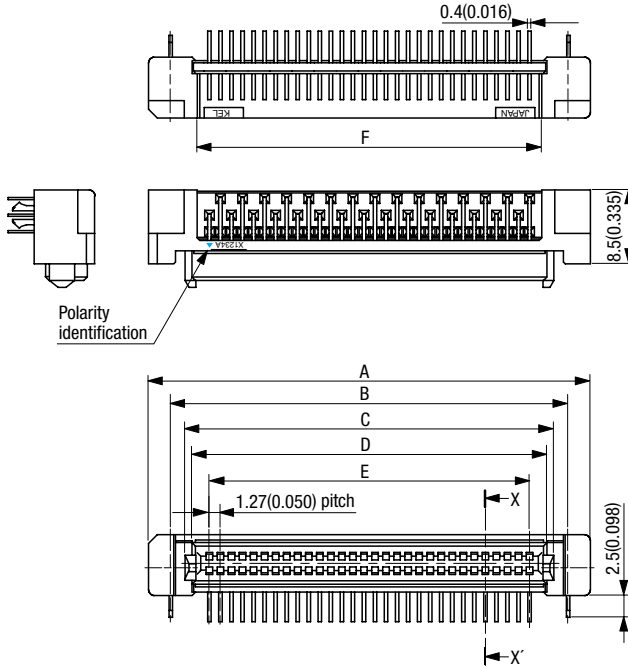
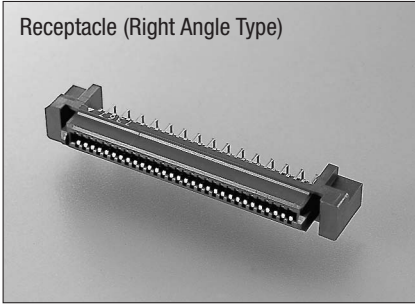
Product Table / Dimensions

| No. of contacts | Part Number | A | B | C | D | E | Number of packaging |
|-----------------|--------------------|------------------|------------------|------------------|------------------|------------------|---------------------|
| 20 | 8903-020-177S□-□-F | 18.83 (0.741) | 17.03 (0.670) | 14.53 (0.572) | 13.43 (0.529) | 11.43 (0.450) | 27 |
| 30 | 8903-030-177S□-□-F | 25.18 (0.991) | 23.38 (0.920) | 20.88 (0.822) | 19.78 (0.779) | 17.78 (0.700) | 20 |
| 40 | 8903-040-177S□-□-F | 31.53 (1.241) | 29.73 (1.170) | 27.23 (1.072) | 26.13 (1.029) | 24.13 (0.950) | 16 |
| 50 | 8903-050-177S□-□-F | 37.88 (1.491) | 36.08 (1.420) | 33.58 (1.322) | 32.48 (1.279) | 30.48 (1.200) | 13 |
| 60 | 8903-060-177S□-□-F | 44.23 (1.741) | 42.43 (1.670) | 39.93 (1.572) | 38.83 (1.529) | 36.83 (1.450) | 11 |
| 80 | 8903-080-177S□-□-F | 56.93 (2.241) | 55.13 (2.170) | 52.63 (2.072) | 51.53 (2.029) | 49.53 (1.950) | 8 |
| 100 | 8903-100-177S□-□-F | 69.63 (2.741) | 67.83 (2.670) | 65.33 (2.572) | 64.23 (2.529) | 62.23 (2.450) | 7 |
| 120 | 8903-120-177S□-□-F | 82.33 (3.241) | 80.53 (3.170) | 78.03 (3.072) | 76.93 (3.029) | 74.93 (2.950) | 6 |

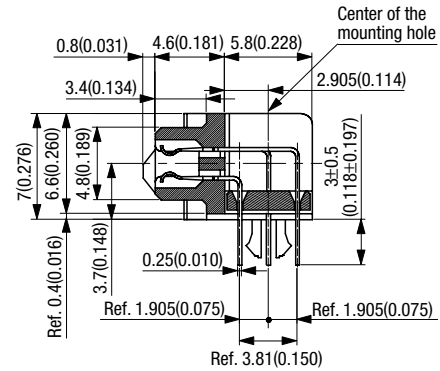
8901-□□□-177L□-F (Receptacle, With flanges and hooks)

Unit:mm(inch)

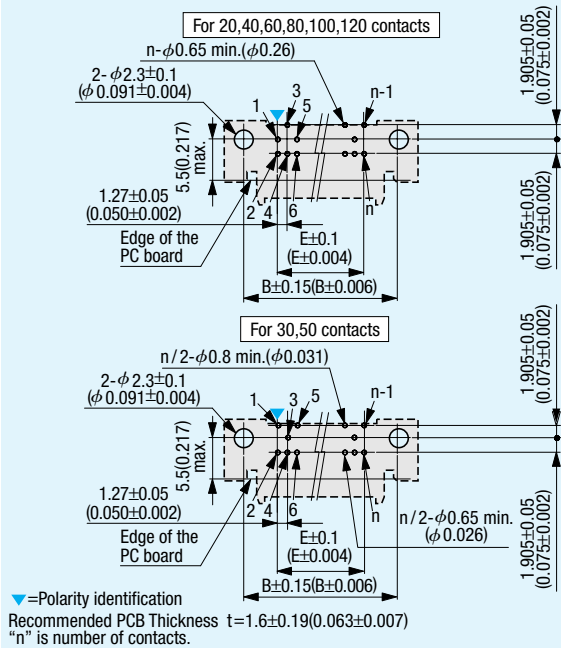
Receptacle (Right Angle Type)



X-X' Cross Section



Printed Circuit Board Layout (Component Side View)



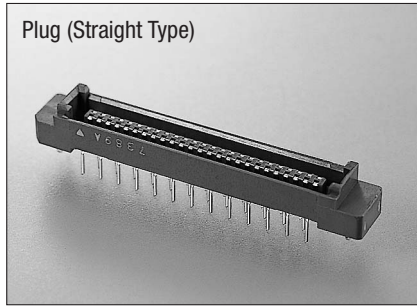
| Packaging style |
|-----------------|
| Pipe |

Product Table / Dimensions

| No. of contacts | Part Number | A | B | C | D | E | F | Number of packaging |
|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|---------------------|
| 20 | 8901-020-177L□-F | 25.43 (1.001) | 20.32 (0.800) | 17.03 (0.670) | 15.43 (0.607) | 11.43 (0.450) | 14.23 (0.560) | 20 |
| 30 | 8901-030-177L□-F | 31.78 (1.251) | 26.67 (1.050) | 23.38 (0.920) | 21.78 (0.857) | 17.78 (0.700) | 20.58 (0.810) | 16 |
| 40 | 8901-040-177L□-F | 38.13 (1.501) | 33.02 (1.300) | 29.73 (1.170) | 28.13 (1.107) | 24.13 (0.950) | 26.93 (1.060) | 13 |
| 50 | 8901-050-177L□-F | 44.48 (1.751) | 39.37 (1.550) | 36.08 (1.420) | 34.48 (1.357) | 30.48 (1.200) | 33.28 (1.310) | 11 |
| 60 | 8901-060-177L□-F | 50.83 (2.001) | 45.72 (1.800) | 42.43 (1.670) | 40.83 (1.607) | 36.83 (1.450) | 39.63 (1.560) | 10 |
| 80 | 8901-080-177L□-F | 63.53 (2.501) | 58.42 (2.300) | 55.13 (2.170) | 53.53 (2.107) | 49.53 (1.950) | 52.33 (2.060) | 8 |
| 100 | 8901-100-177L□-F | 76.23 (3.001) | 71.12 (2.800) | 67.83 (2.670) | 66.23 (2.607) | 62.23 (2.450) | 65.03 (2.560) | 6 |
| 120 | 8901-120-177L□-F | 88.93 (3.501) | 83.82 (3.300) | 80.53 (3.170) | 78.93 (3.107) | 74.93 (2.950) | 77.73 (3.060) | 5 |

8911-□□□-178S□-□-F (Plug, With flanges and hooks)

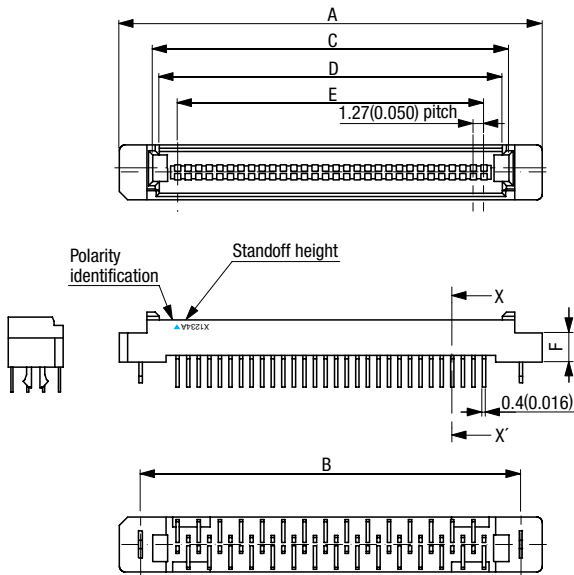
Unit:mm(inch)



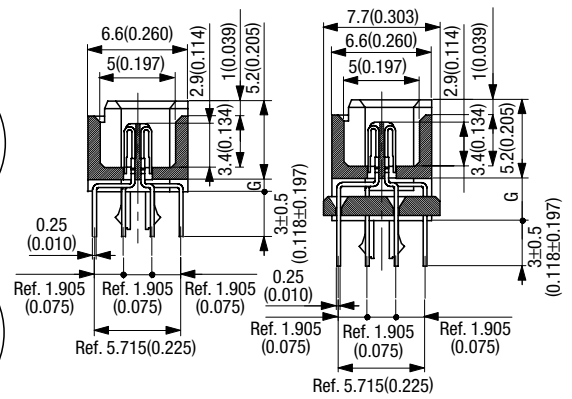
Plug (Straight Type)

A type (Standoff height)

C type



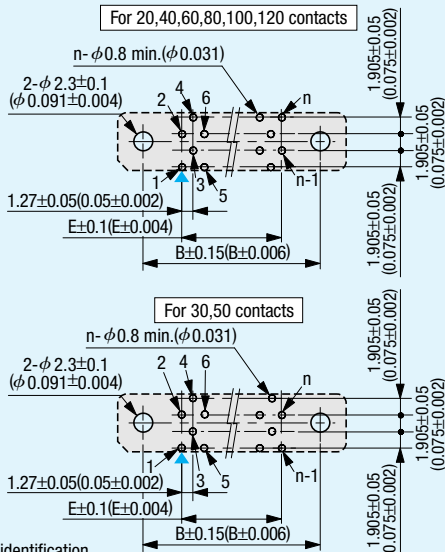
X-X' Cross Section



A type

C type

Printed Circuit Board Layout
(Component Side View)



▼=Polarity identification
Recommended PCB Thickness $t=1.6\pm0.19(0.063\pm0.007)$
"n" is number of contacts.

| Type | F | G |
|------|----------------|----------------|
| A | 3.5 (0.138) | 0.8 (0.032) |
| C | 5.5 (0.217) | 2.8 (0.110) |

| Packaging style |
|-----------------|
| Pipe |

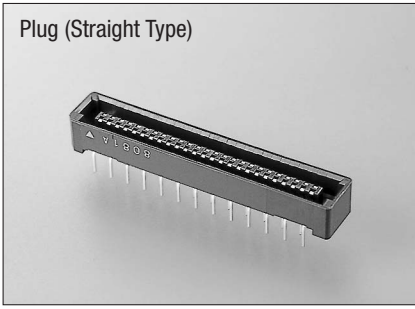
Product Table / Dimensions

| No. of contacts | Part Number | A | B | C | D | E | Number of packaging |
|-----------------|--------------------|------------------|------------------|------------------|------------------|------------------|---------------------|
| 20 | 8911-020-178S□-□-F | 25.43 (1.001) | 20.32 (0.800) | 17.43 (0.686) | 15.83 (0.623) | 11.43 (0.450) | 20 |
| 30 | 8911-030-178S□-□-F | 31.78 (1.251) | 26.67 (1.050) | 23.78 (0.936) | 22.18 (0.873) | 17.78 (0.700) | 16 |
| 40 | 8911-040-178S□-□-F | 38.13 (1.501) | 33.02 (1.300) | 30.13 (1.186) | 28.53 (1.123) | 24.13 (0.950) | 13 |
| 50 | 8911-050-178S□-□-F | 44.48 (1.751) | 39.37 (1.550) | 36.48 (1.436) | 34.88 (1.373) | 30.48 (1.200) | 11 |
| 60 | 8911-060-178S□-□-F | 50.83 (2.001) | 45.72 (1.800) | 42.83 (1.686) | 41.23 (1.623) | 36.83 (1.450) | 10 |
| 80 | 8911-080-178S□-□-F | 63.53 (2.501) | 58.42 (2.300) | 55.53 (2.186) | 53.93 (2.123) | 49.53 (1.950) | 7 |
| 100 | 8911-100-178S□-□-F | 76.23 (3.001) | 71.12 (2.800) | 68.23 (2.686) | 66.63 (2.623) | 62.23 (2.450) | 6 |
| 120 | 8911-120-178S□-□-F | 88.93 (3.501) | 83.82 (3.300) | 80.93 (3.186) | 79.33 (3.123) | 74.93 (2.950) | 5 |

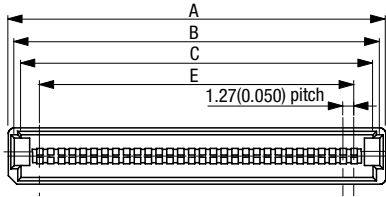
8913-□□□-178S□-□-F (Plug, Without flanges and hooks)

Unit:mm(inch)

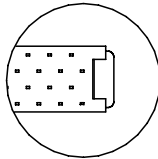
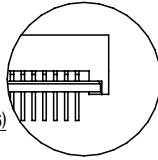
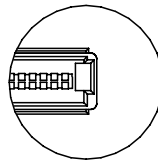
Plug (Straight Type)



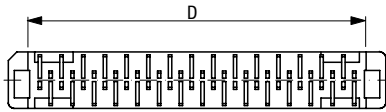
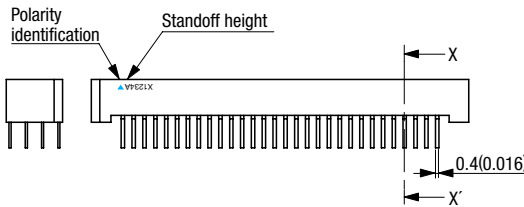
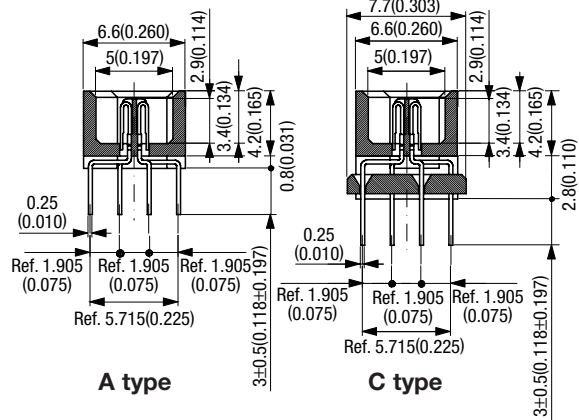
A type (Standoff height)



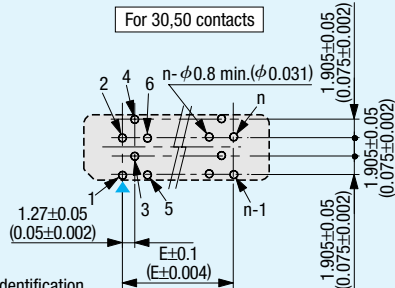
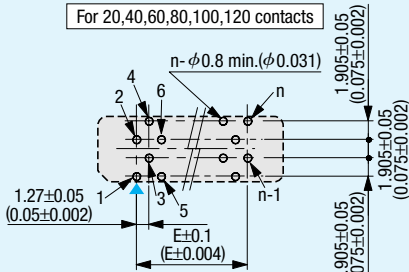
C type



X-X' Cross Section



Printed Circuit Board Layout (Component Side View)



▼=Polarity identification
Recommended PCB Thickness $t=1.6\pm 0.19(0.063\pm 0.007)$
"n" is number of contacts.

| Packaging style |
|-----------------|
| Pipe |

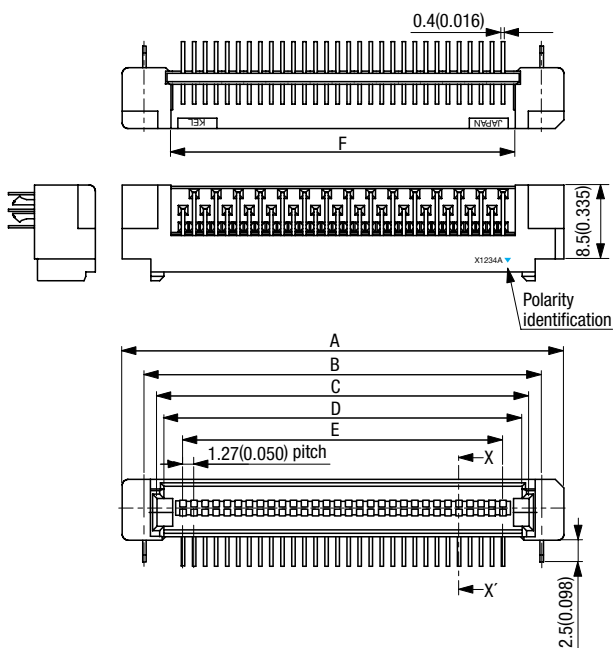
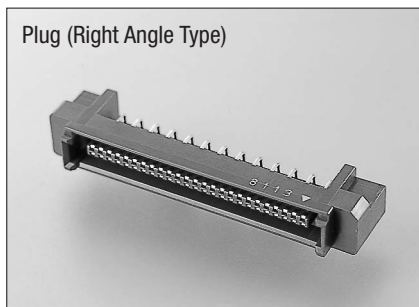
Product Table / Dimensions

| No. of contacts | Part Number | A | B | C | D | E | Number of packaging |
|-----------------|--------------------|------------------|------------------|------------------|------------------|------------------|---------------------|
| 20 | 8913-020-178S□-□-F | 18.83 (0.741) | 17.43 (0.686) | 15.83 (0.623) | 14.23 (0.560) | 11.43 (0.450) | 27 |
| 30 | 8913-030-178S□-□-F | 25.18 (0.991) | 23.78 (0.936) | 22.18 (0.873) | 20.58 (0.810) | 17.78 (0.700) | 20 |
| 40 | 8913-040-178S□-□-F | 31.53 (1.241) | 30.13 (1.186) | 28.53 (1.123) | 26.93 (1.060) | 24.13 (0.950) | 16 |
| 50 | 8913-050-178S□-□-F | 37.88 (1.491) | 36.48 (1.436) | 34.88 (1.373) | 33.28 (1.310) | 30.48 (1.200) | 13 |
| 60 | 8913-060-178S□-□-F | 44.23 (1.741) | 42.83 (1.686) | 41.23 (1.623) | 39.63 (1.560) | 36.83 (1.450) | 11 |
| 80 | 8913-080-178S□-□-F | 56.93 (2.241) | 55.53 (2.186) | 53.93 (2.123) | 52.33 (2.060) | 49.53 (1.950) | 8 |
| 100 | 8913-100-178S□-□-F | 69.63 (2.741) | 68.23 (2.686) | 66.63 (2.623) | 65.03 (2.560) | 62.23 (2.450) | 7 |
| 120 | 8913-120-178S□-□-F | 82.33 (3.241) | 80.93 (3.186) | 79.33 (3.123) | 77.73 (3.060) | 74.93 (2.950) | 6 |

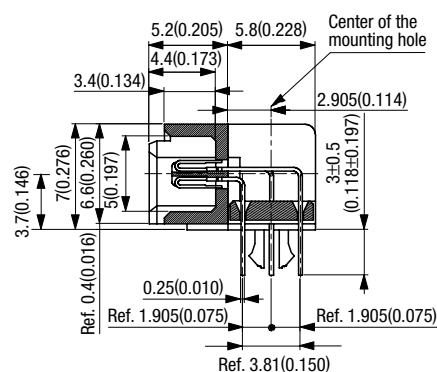
8911-□□□-178L□-F (Plug, With flanges and hooks)

Unit:mm(inch)

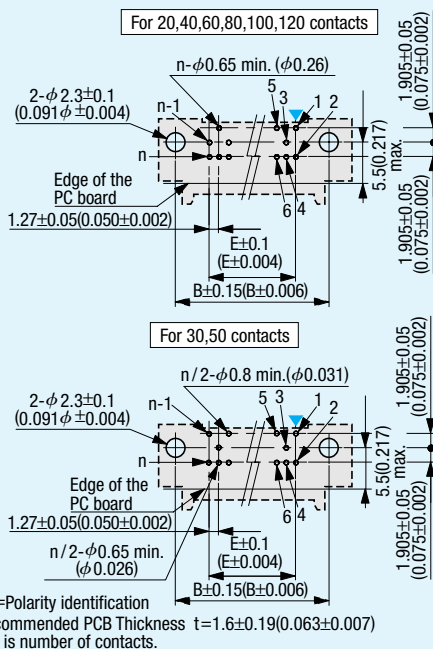
Plug (Right Angle Type)



X-X' Cross Section



Printed Circuit Board Layout (Component Side View)



| Packaging style |
|-----------------|
| Pipe |

Product Table / Dimensions

| No. of contacts | Part Number | A | B | C | D | E | F | Number of packaging |
|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|---------------------|
| 20 | 8911-020-178L□-F | 25.43 (1.001) | 20.32 (0.800) | 17.43 (0.686) | 15.83 (0.623) | 11.43 (0.450) | 14.23 (0.560) | 20 |
| 30 | 8911-030-178L□-F | 31.78 (1.251) | 26.67 (1.050) | 23.78 (0.936) | 22.18 (0.873) | 17.78 (0.700) | 20.58 (0.810) | 16 |
| 40 | 8911-040-178L□-F | 38.13 (1.501) | 33.02 (1.300) | 30.13 (1.186) | 28.53 (1.123) | 24.13 (0.950) | 26.93 (1.060) | 13 |
| 50 | 8911-050-178L□-F | 44.48 (1.751) | 39.37 (1.550) | 36.48 (1.436) | 34.88 (1.373) | 30.48 (1.200) | 33.28 (1.310) | 11 |
| 60 | 8911-060-178L□-F | 50.83 (2.001) | 45.72 (1.800) | 42.83 (1.686) | 41.23 (1.623) | 36.83 (1.450) | 39.63 (1.560) | 10 |
| 80 | 8911-080-178L□-F | 63.53 (2.501) | 58.42 (2.300) | 55.53 (2.186) | 53.93 (2.123) | 49.53 (1.950) | 52.33 (2.060) | 8 |
| 100 | 8911-100-178L□-F | 76.23 (3.001) | 71.12 (2.800) | 68.23 (2.686) | 66.63 (2.623) | 62.23 (2.450) | 65.03 (2.560) | 6 |
| 120 | 8911-120-178L□-F | 88.93 (3.501) | 83.82 (3.300) | 80.93 (3.186) | 79.33 (3.123) | 74.93 (2.950) | 77.73 (3.060) | 5 |