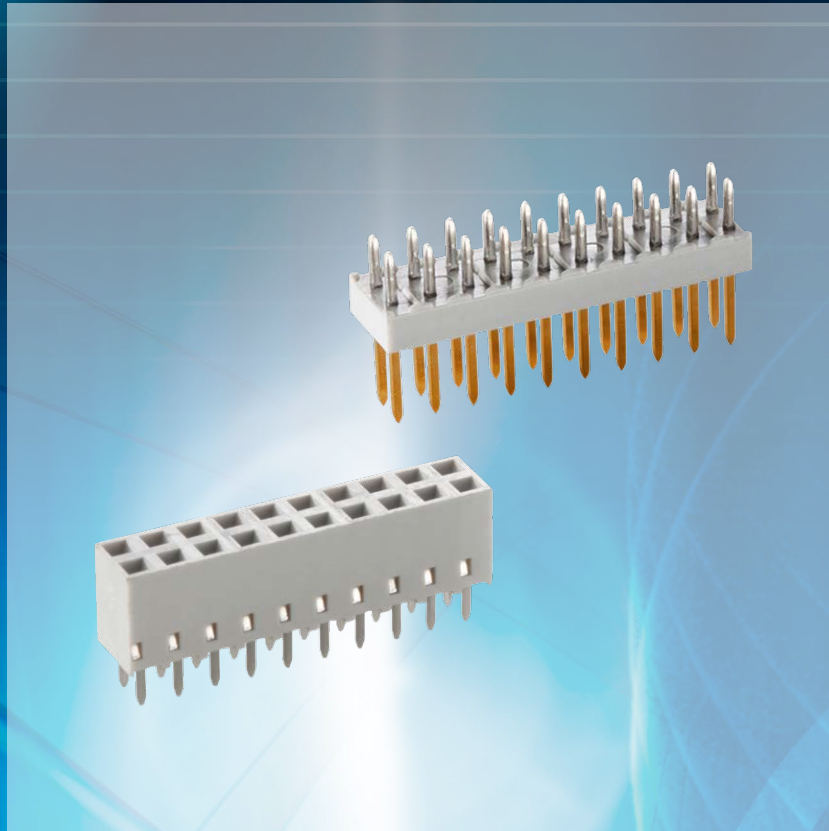


ODU CARD



Contents

Chapter		From page	
1	Female headers, Series 517	3	
2	Pin headers, Series 511	18	

Description:

The ODU CARD connectors are suitable as pluggable contact elements with a medium or high number of contacts. Thanks to the geometrically favourable positioning, they allow a high packing density on the PCBs. ODU CARD connectors are available as square sockets/pin combination.

**Board-to-board connector,
pitch = 2.54 mm.**

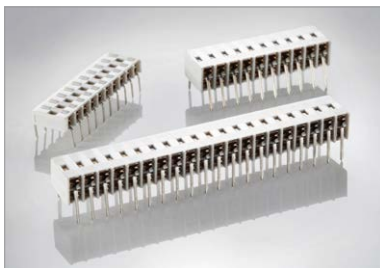
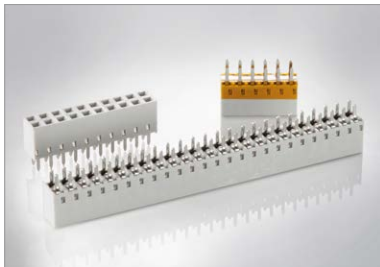
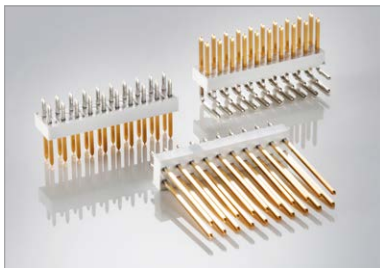
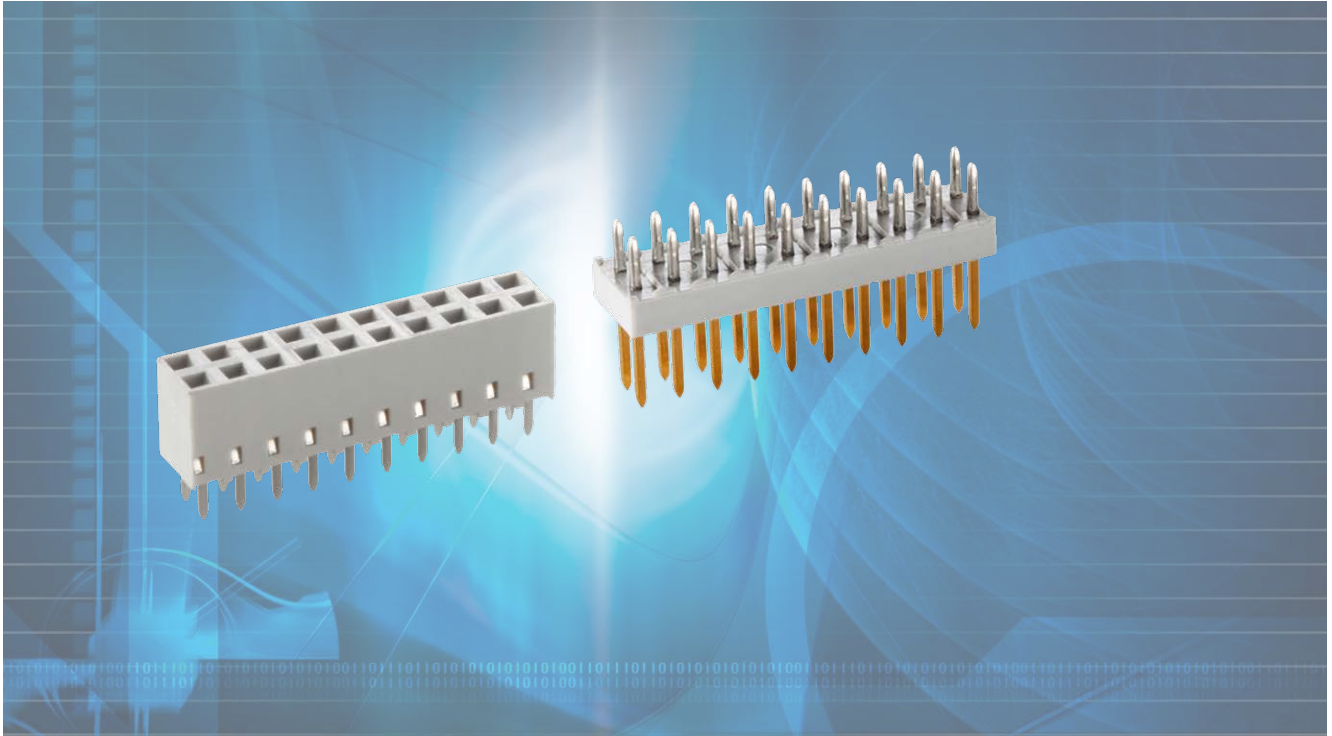
Features:

- Detachable connection using pin and female headers
- 1- and 2-row versions
- 1-row: 2 – 30 contacts
- 2-row: 2 – 60 contacts (in steps of 2)
- Pin headers with optimal pin tip shape
- Female headers for vertical assembly also available with covering foil

All dimensions in mm.
Some of the pictures are illustrations.
Errors and omissions excepted.

Issue: 2014-03

ODU CARD Female headers Series 517



Contents

Female headers, Series 517

Chapter		From page	
1	Number codes for ODU CARD, Series 517	5	
2	1-row female headers	6	
3	2-row female headers	12	

Explanation of number codes for ODU CARD, Series 517

Pitch 2.54 mm for cross-section 0.64 × 0.64 mm

No.	Meaning	Coding
A	Series	517 = Female headers, pitch 2.54 mm
B	Type	022 = Vertical assembly, 2-point contact, 1-row 023 = Vertical assembly, 2-point contact, 2-row 027 = Vertical assembly, with angled soldering lugs, 4-point contact, 1-row 028 = Vertical assembly, with angled soldering lugs, 4-point contact, 2-row 032 = Pluggable on one side, insulator 5.08 / 2.8 mm, mating length 6.0 mm, 2-row, straight 033 = Vertical assembly, with cranked soldering lug, 2-point contact, 2-row 220 = Horizontal assembly, 4-point contact, 1-row 221 = Horizontal assembly, 4-point contact, 2-row
C	Surface plating	003 = In mating area 0.5 µm Au on Ni, in termination area 2.0 µm Sn on Ni (standard) 009 = Flash-gold-plated (upon request) 035 = In mating area 0.75 µm Au on Ni, in termination area 2.0 µm Sn on Ni (upon request)
D	Number of contacts	010 = 10 contacts (example)
E	Packaging	000 = Cardboard box

Ordering example for Series 517

A	B	C	D	E
5	17	.022	.003	.010.000

- A = Series: 517 female headers, pitch 2.54 mm
- B = Type: vertical assembly, 2-point contact, 1-row
- C = Surface plating: in mating area 0.5 µm Au on Ni, in termination area 2.0 µm Sn on Ni (standard)
- D = Number of contacts: 10
- E = Packaging: cardboard box

ODU CARD female headers, Series 517 for pin headers in cross-section 0.64 × 0.64 mm

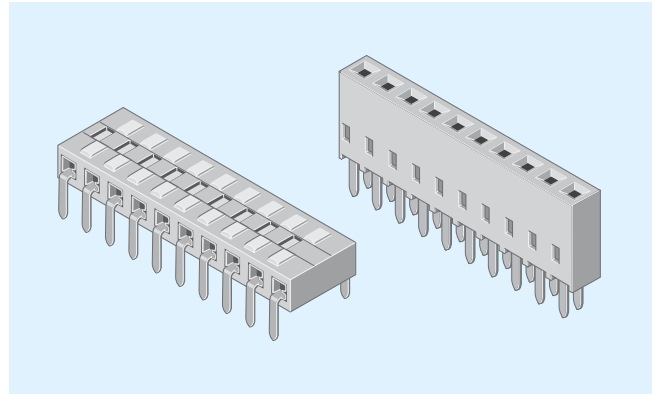
1-row, for horizontal and vertical assembly, in pitch 2.54 mm

Brief description

The 1-row female headers are designed for either horizontal or vertical assembly on PCBs, matching the ODU CARD 1-row pin headers with 0.64 × 0.64 mm pins.

The contact points of the sockets are selectively gold-plated in the mating area. The contacts of the horizontal version have 4 contact points and those of the vertical versions have 2 contact points.

The version for vertical assembly is suitable for through-hole assembly and is pluggable on both sides. The soldering pitch in the horizontal version is 7.5 × 2.54 mm.



Technical data

Electrical specification

Terminations:	Solder contacts
Contact load:	5 A
Contact resistance:	≤ 4 mΩ
Insulation resistance:	> 1 GΩ
Test voltage:	1,500 V ~

Mechanical specification

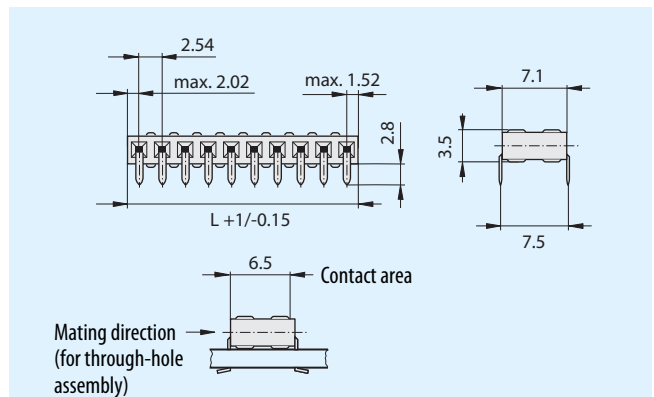
Operating temperature:	- 40 °C to +125 °C
Humidity level:	75 % rel. humidity in accordance with DIN EN 60721-3-3

Material and surface plating

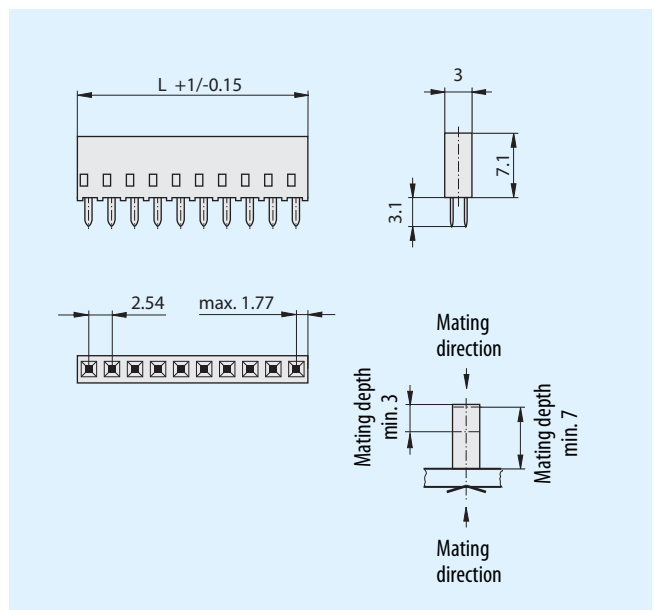
Contact surface	
Mating area:	0,5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00 *)
Termination area:	2.0 μm Sn on 1.25 μm Ni
Werkstoff Insulator:	PBT grey GF in accordance with UL94 V-0
Contact material:	Copper alloy

*) Applies to contact points in the mating area.
Rest of surface plating is flash-gold-plated or Sn on Ni.

Dimensions for horizontal assembly



Dimensions for vertical assembly



ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm
1-row, for horizontal and vertical assembly, in pitch 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

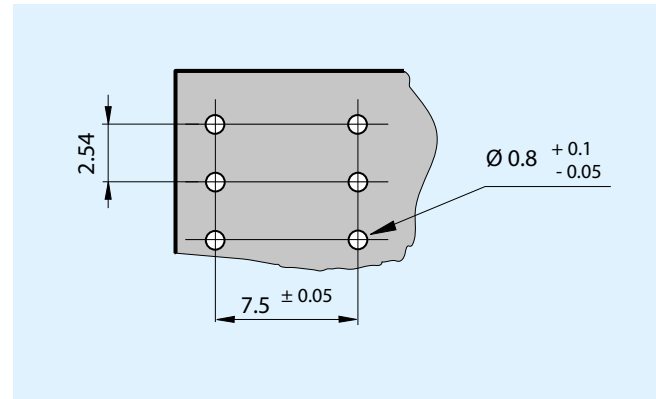
Number of contacts	Dimension L	Part number ¹⁾	
		Horizontal installation	Vertical installation
2	5.08	517.220.003.002.000	517.022.003.002.000
3	7.62	517.220.003.003.000	517.022.003.003.000
4	10.16	517.220.003.004.000	517.022.003.004.000
5	12.70	517.220.003.005.000	517.022.003.005.000
6	15.24	517.220.003.006.000	517.022.003.006.000
7	17.78	517.220.003.007.000	517.022.003.007.000
8	20.32	517.220.003.008.000	517.022.003.008.000
9	22.86	517.220.003.009.000	517.022.003.009.000
10	25.40	517.220.003.010.000	517.022.003.010.000
11	27.94	517.220.003.011.000	517.022.003.011.000
12	30.48	517.220.003.012.000	517.022.003.012.000
13	33.02	517.220.003.013.000	517.022.003.013.000
14	35.56	517.220.003.014.000	517.022.003.014.000
15	38.10	517.220.003.015.000	517.022.003.015.000
16	40.64	517.220.003.016.000	517.022.003.016.000
17	43.18	517.220.003.017.000	517.022.003.017.000
18	45.72	517.220.003.018.000	517.022.003.018.000
19	48.26	517.220.003.019.000	517.022.003.019.000
20	50.80	517.220.003.020.000	517.022.003.020.000
21	53.34	517.220.003.021.000	517.022.003.021.000
22	55.88	517.220.003.022.000	517.022.003.022.000
23	58.42	517.220.003.023.000	517.022.003.023.000
24	60.96	517.220.003.024.000	517.022.003.024.000
25	63.50	517.220.003.025.000	517.022.003.025.000
26	66.04	517.220.003.026.000	517.022.003.026.000
27	68.58	517.220.003.027.000	517.022.003.027.000
28	71.12	517.220.003.028.000	517.022.003.028.000
29	73.66	517.220.003.029.000	517.022.003.029.000
30	76.20	517.220.003.030.000	517.022.003.030.000

¹⁾ For _ please enter the required surface plating:
 003: 0.5 µm Au on Ni (standard)
 009: Flash-gold-plated (upon request)
 035: 0.75 µm Au on Ni (upon request)

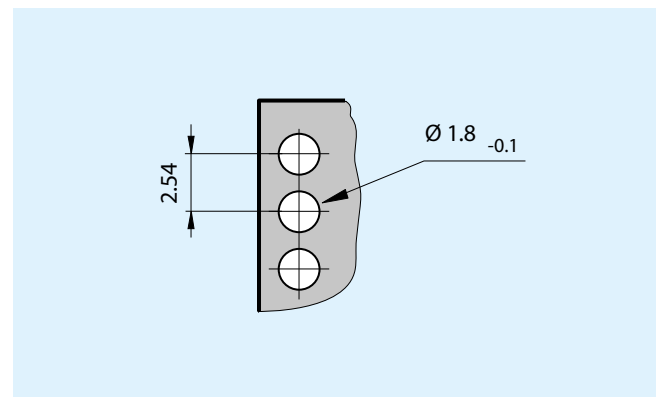
Number codes, see page 5.

Vertical models with straight or cranked soldering lug are also available with covering foil (solder proof).

PCB layout for horizontal assembly



PCB layout for vertical assembly

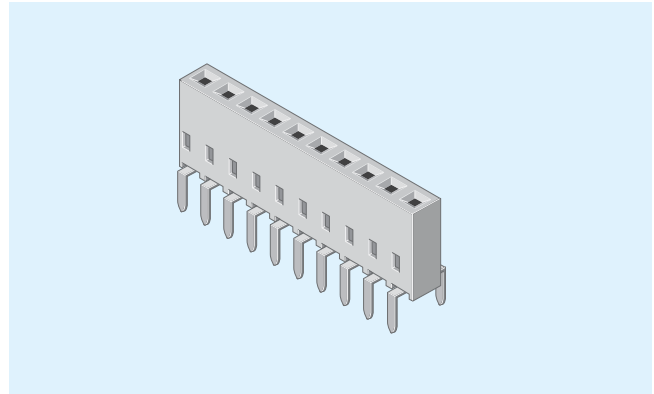


ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm
1-row, for vertical assembly with angled soldering lugs

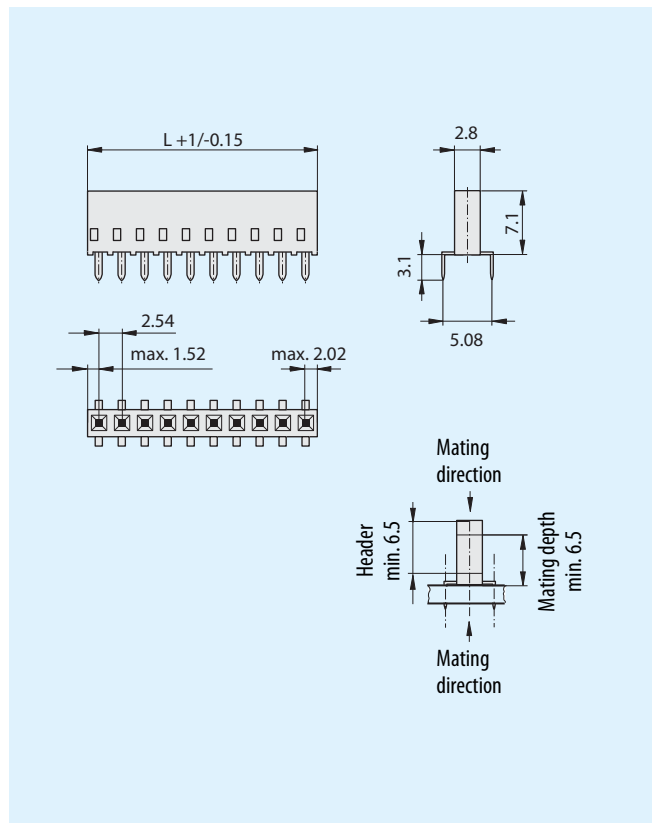
Brief description

Female headers, 1-row, in through-hole version with 2.54-mm pitch, matching ODU CARD pin headers. The soldering lugs are angled, the solder hole is next to the mating hole. The advantages of this female header model are:

- No manual soldering because these connectors can be soldered together with other components in the splash bath.
- No covering the female contacts because they are not moistened by the rising solder.
- Special holes are eliminated because the soldering lugs are produced in a 5.08-mm pitch.



Dimensions



Technical data

Electrical specification

- Contact load: 5 A
- Contact resistance: ≤ 4 mΩ
- Insulation resistance: > 1 GΩ
- Test voltage: 1,500 V ~

Mechanical specification

- Operating temperature: - 40 °C to +125 °C
- Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

Material and surface plating

- Contact surface
 - Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45 204 Class 00 *)
 - Termination area: 2.0 μm Sn on 1.25 μm Ni
- Insulator material: PBT grey
GF in accordance with UL94 V-0
- Contact material: Copper alloy
- Terminations: Solder contacts

*) Applies to contact points in the mating area.
Rest of surface plating is flash-gold-plated or Sn on Ni.

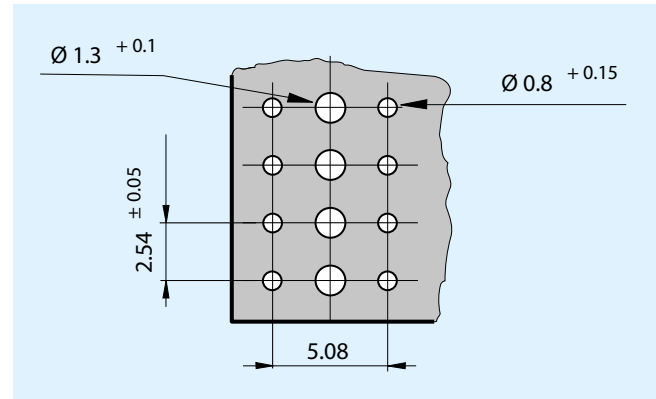
ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm
1-row, for vertical assembly with angled soldering lugs

Order information and dimensional table

(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾
2	5.08	517.027.003.002.000
3	7.62	517.027.003.003.000
4	10.16	517.027.003.004.000
5	12.70	517.027.003.005.000
6	15.24	517.027.003.006.000
7	17.78	517.027.003.007.000
8	20.32	517.027.003.008.000
9	22.86	517.027.003.009.000
10	25.40	517.027.003.010.000
11	27.94	517.027.003.011.000
12	30.48	517.027.003.012.000
13	33.02	517.027.003.013.000
14	35.56	517.027.003.014.000
15	38.10	517.027.003.015.000
16	40.64	517.027.003.016.000
17	43.18	517.027.003.017.000
18	45.72	517.027.003.018.000
19	48.26	517.027.003.019.000
20	50.80	517.027.003.020.000
21	53.34	517.027.003.021.000
22	55.88	517.027.003.022.000
23	58.42	517.027.003.023.000
24	60.96	517.027.003.024.000
25	63.50	517.027.003.025.000
26	66.04	517.027.003.026.000
27	68.58	517.027.003.027.000
28	71.12	517.027.003.028.000
29	73.66	517.027.003.029.000
30	76.20	517.027.003.030.000

PCB layout



¹⁾ For _ please enter the required surface plating:

- 003: 0.5 µm Au on Ni (standard)
- 009: Flash-gold-plated (upon request)
- 035: 0.75 µm Au on Ni (upon request)

Number codes, see page 5.

**ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm**

1-row, for vertical assembly with cranked soldering lugs, in soldering pitch 2.54 mm

Brief description

Female headers, 1-row, are manufactured for PCBs that require the pitch 2.54 mm.

The soldering lugs are cranked to this dimension. They match the ODU CARD pin headers, 1-row, with pins with a cross-section of 0.64 × 0.64 mm. The contact points of the sockets are selectively gold-plated and the soldering lugs are tin-plated.

Technical data

Electrical specification

- Contact load: 5 A
- Contact resistance: ≤ 4 mΩ
- Insulation resistance: > 1 GΩ
- Test voltage: 1,500 V ~

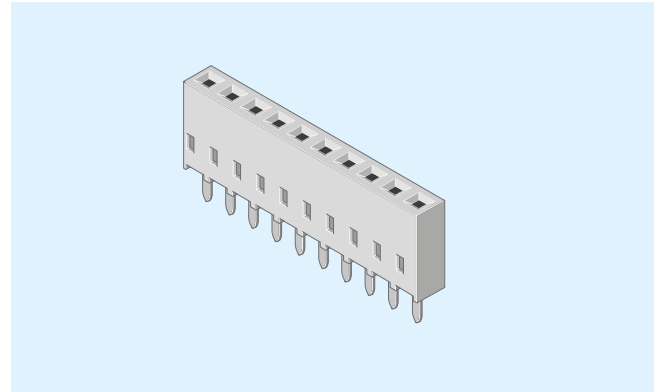
Mechanical specification

- Operating temperature: - 40 °C to +125 °C
- Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

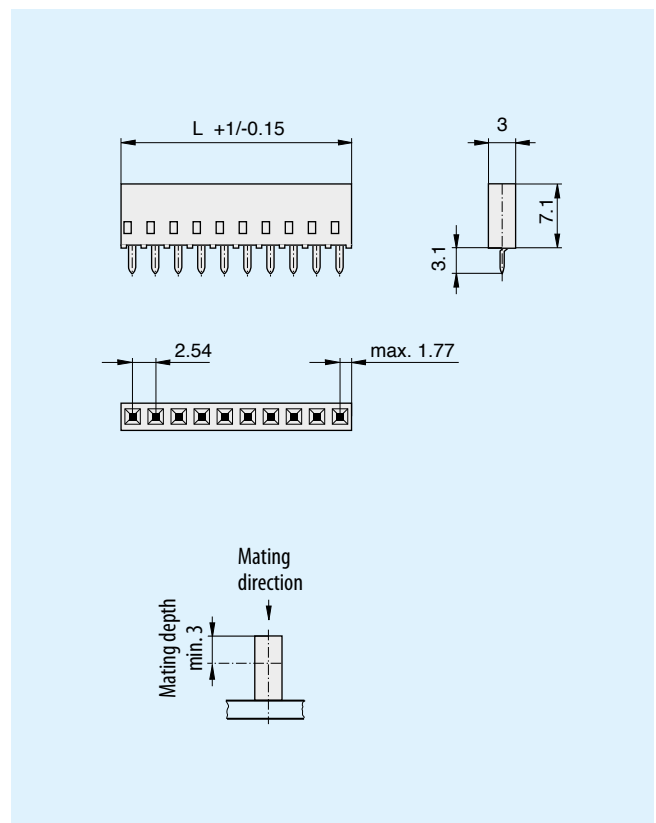
Material and surface plating

- Contact surface
 - Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00 *)
 - Termination area: 2.0 μm Sn on 1.25 μm Ni
- Insulator material: PBT grey
GF in accordance with UL94 V-0
- Contact material: Copper alloy
- Terminations: Solder contacts

*) Applies to contact points in the mating area.
Rest of surface plating is flash-gold-plated or Sn on Ni.



Dimensions



**ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm**

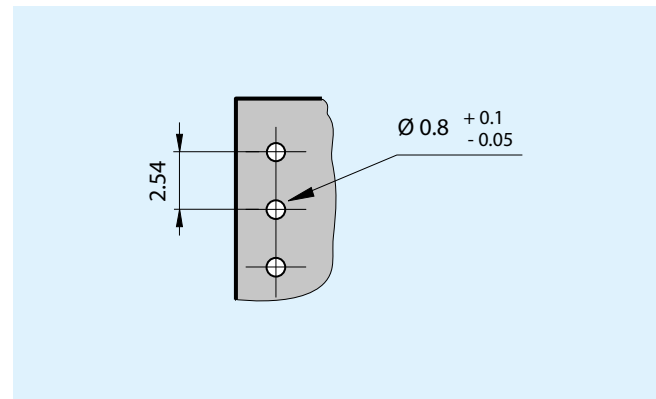
1-row, for vertical assembly with cranked soldering lugs, in soldering pitch 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾
2	5.08	517.032.003.002.000
3	7.62	517.032.003.003.000
4	10.16	517.032.003.004.000
5	12.70	517.032.003.005.000
6	15.24	517.032.003.006.000
7	17.78	517.032.003.007.000
8	20.32	517.032.003.008.000
9	22.86	517.032.003.009.000
10	25.40	517.032.003.010.000
11	27.94	517.032.003.011.000
12	30.48	517.032.003.012.000
13	33.02	517.032.003.013.000
14	35.56	517.032.003.014.000
15	38.10	517.032.003.015.000
16	40.64	517.032.003.016.000
17	43.18	517.032.003.017.000
18	45.72	517.032.003.018.000
19	48.26	517.032.003.019.000
20	50.80	517.032.003.020.000
21	53.34	517.032.003.021.000
22	55.88	517.032.003.022.000
23	58.42	517.032.003.023.000
24	60.96	517.032.003.024.000
25	63.50	517.032.003.025.000
26	66.04	517.032.003.026.000
27	68.58	517.032.003.027.000
28	71.12	517.032.003.028.000
29	73.66	517.032.003.029.000
30	76.20	517.032.003.030.000

PCB layout



¹⁾ For _ please enter the required surface plating:

003: 0.5 µm Au on Ni (standard)

009: Flash-gold-plated (upon request)

035: 0.75 µm Au on Ni (upon request)

Number codes, see page 5.

Vertical models with straight or cranked soldering lugs are also available with covering foil (solder proof).

ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm
2-row, for horizontal and vertical assembly, in pitch 2.54 mm

Brief description

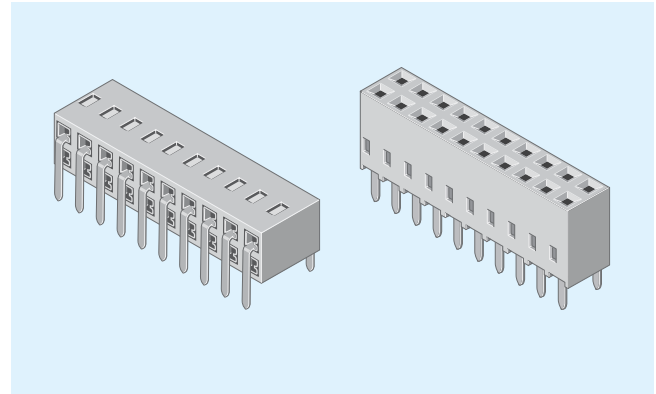
The 2-row female headers, which have been designed for either horizontal or vertical assembly on PCBs, match the 2-row ODU CARD pin headers with 0.64 × 0.64 mm pins.

The contact points of the sockets are selectively gold-plated in the mating area.

The contacts of the horizontal model have 4 contact points, and those of the vertical have 2 contact points.

The version for vertical assembly is suitable for through-hole assembly and is pluggable on both sides.

The soldering pitch in the horizontal model is 7.5 × 2.54 mm and in the vertical model it is 4.0 × 2.54 mm.



Technical data

Electrical specification

- Contact load: 5 A
- Contact resistance: ≤ 4 mΩ
- Insulation resistance: > 1 GΩ
- Test voltage: 1,500 V ~

Mechanical specification

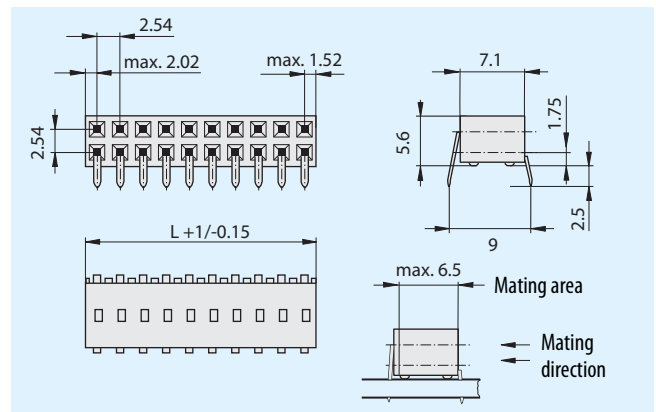
- Operating temperature: - 40 °C to +125 °C
- Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

Material and surface plating

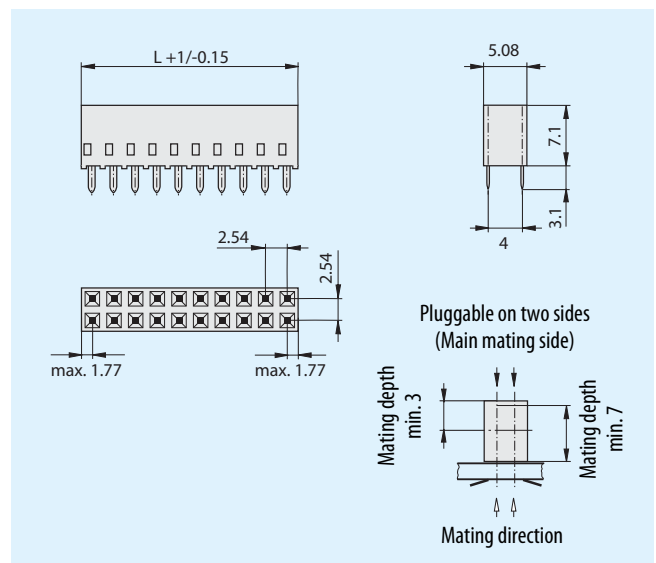
- Contact surface
 - Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00 *)
 - Termination area: 2.0 μm Sn on 1.25 μm Ni
- Insulator material: PBT grey
GF in accordance with UL94 V-0
- Contact material: Copper alloy
- Terminations: Solder contacts

*) Applies to contact points in the mating area.
Rest of surface plating is flash-gold-plated or Sn on Ni.

Dimensions for horizontal assembly



Dimensions for vertical assembly



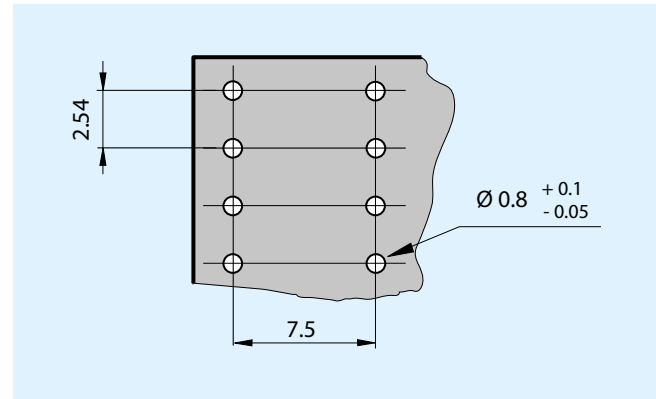
ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm
2-row, for horizontal and vertical assembly, in pitch 2.54 mm

Order information and dimensional table

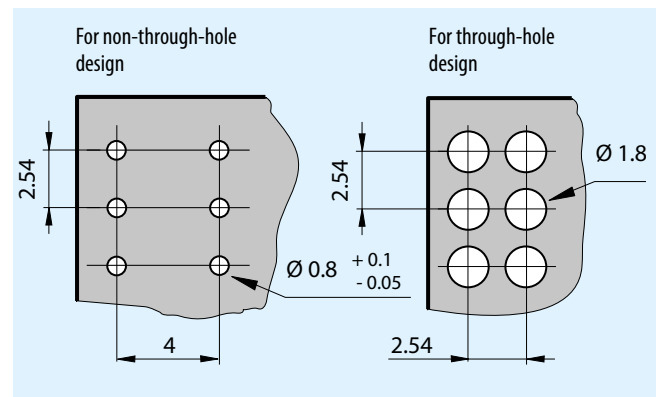
(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾	
		Horizontal installation	Vertical installation
2	2.54	517.221.003.002.000 ²⁾	517.023.003.002.000
4	5.08	517.221.003.004.000	517.023.003.004.000
6	7.62	517.221.003.006.000	517.023.003.006.000
8	10.16	517.221.003.008.000	517.023.003.008.000
10	12.70	517.221.003.010.000	517.023.003.010.000
12	15.24	517.221.003.012.000	517.023.003.012.000
14	17.78	517.221.003.014.000	517.023.003.014.000
16	20.32	517.221.003.016.000	517.023.003.016.000
18	22.86	517.221.003.018.000	517.023.003.018.000
20	25.40	517.221.003.020.000	517.023.003.020.000
22	27.94	517.221.003.022.000	517.023.003.022.000
24	30.48	517.221.003.024.000	517.023.003.024.000
26	33.02	517.221.003.026.000	517.023.003.026.000
28	35.56	517.221.003.028.000	517.023.003.028.000
30	38.10	517.221.003.030.000	517.023.003.030.000
32	40.64	517.221.003.032.000	517.023.003.032.000
34	43.18	517.221.003.034.000	517.023.003.034.000
36	45.72	517.221.003.036.000	517.023.003.036.000
38	48.26	517.221.003.038.000	517.023.003.038.000
40	50.80	517.221.003.040.000	517.023.003.040.000
42	53.34	517.221.003.042.000	517.023.003.042.000
44	55.88	517.221.003.044.000	517.023.003.044.000
46	58.42	517.221.003.046.000	517.023.003.046.000
48	60.96	517.221.003.048.000	517.023.003.048.000
50	63.50	517.221.003.050.000	517.023.003.050.000
52	66.04	517.221.003.052.000	517.023.003.052.000
54	68.58	517.221.003.054.000	517.023.003.054.000
56	71.12	517.221.003.056.000	517.023.003.056.000
58	73.66	517.221.003.058.000	517.023.003.058.000
60	76.20	517.221.003.060.000	517.023.003.060.000

PCB layout for horizontal assembly



PCB layout for vertical assembly



¹⁾ For _ please enter the required surface plating:
 003: 0.5 µm Au on Ni (standard)
 009: Flash-gold-plated (upon request)
 035: 0.75 µm Au on Ni (upon request)

²⁾ Upon request

Number codes, see page 5.

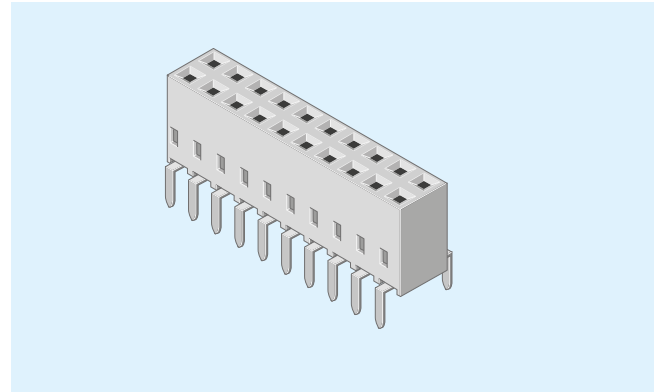
Vertical models with straight or cranked soldering lugs are also available with covering foil (solder proof).

ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm
2-row, for vertical assembly with angled soldering lugs

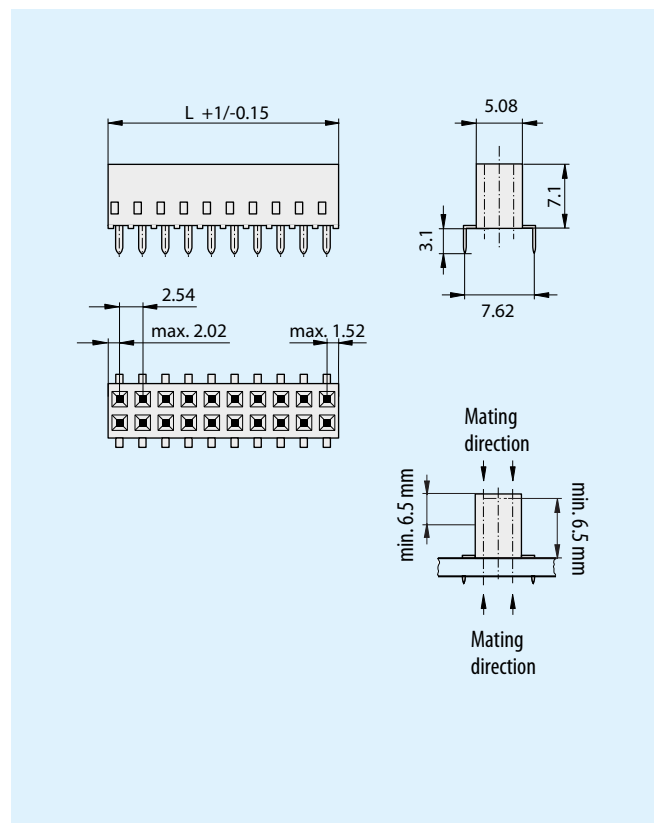
Brief description

Female headers, 2-row, in through-hole design with a 2.54-mm pitch, matching the ODU CARD pin headers. The soldering lugs are angled, the solder hole is next to the mating hole. The advantages of this female header model are:

- No manual soldering because these connectors can be soldered together with other components in the splash bath.
- No covering the sockets contacts because they are not moistened by the rising solder.
- Special holes are eliminated because the soldering lugs are produced in the 7.62-mm pitch.



Dimensions



Technical data

Electrical specification

Contact load: 5 A
 Contact resistance: ≤ 4 m
 Insulation resistance: > 1 GΩ
 Test voltage: 1,500 V ~

Mechanical specification

Operating temperature: - 40 °C to +125 °C
 Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

Material and surface plating

Contact surface
 Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00 *)
 Termination area: 2.0 μm Sn on 1.25 μm Ni
 Insulator material: PBT grey GF in accordance with UL94 V-0
 Contact material: Copper alloy
 Terminations: Solder contacts

*) Applies to contact points in the mating area. Rest of surface plating is flash-gold-plated or Sn on Ni.

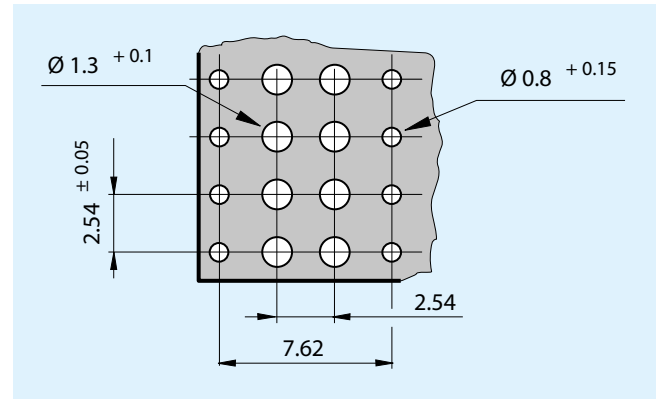
ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm
2-row, for vertical assembly with angled soldering lugs

Order information and dimensional table

(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾
2	2.54	517.028.003.002.000
4	5.08	517.028.003.004.000
6	7.62	517.028.003.006.000
8	10.16	517.028.003.008.000
10	12.70	517.028.003.010.000
12	15.24	517.028.003.012.000
14	17.78	517.028.003.014.000
16	20.32	517.028.003.016.000
18	22.86	517.028.003.018.000
20	25.40	517.028.003.020.000
22	27.94	517.028.003.022.000
24	30.48	517.028.003.024.000
26	33.02	517.028.003.026.000
28	35.56	517.028.003.028.000
30	38.10	517.028.003.030.000
32	40.64	517.028.003.032.000
34	43.18	517.028.003.034.000
36	45.72	517.028.003.036.000
38	48.26	517.028.003.038.000
40	50.80	517.028.003.040.000
42	53.34	517.028.003.042.000
44	55.88	517.028.003.044.000
46	58.42	517.028.003.046.000
48	60.96	517.028.003.048.000
50	63.50	517.028.003.050.000
52	66.04	517.028.003.052.000
54	68.58	517.028.003.054.000
56	71.12	517.028.003.056.000
58	73.66	517.028.003.058.000
60	76.20	517.028.003.060.000

PCB layout



¹⁾ For _ please enter the required surface plating:

- 003: 0.5 µm Au on Ni (standard)
- 009: Flash-gold-plated (upon request)
- 035: 0.75 µm Au on Ni (upon request)

Number codes, see page 5.

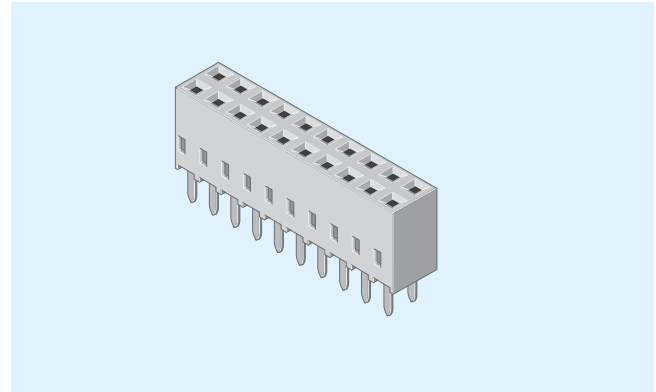
ODU CARD female headers, Series 517 for pin headers in cross-section 0.64 × 0.64 mm

2-row, for vertical assembly with cranked soldering lugs, in soldering pitch 2.54 mm × 2.54 mm

Brief description

Female headers, 2-row with a soldering pitch of 2.54 × 2.54 mm, are manufactured for PCBs that require the 2.54-mm pitch. The soldering lugs are cranked to this dimension. They match the ODU CARD pin headers, 2-row, with pins with a cross-section of 0.64 × 0.64 mm.

The contact points of the sockets are selectively gold-plated and the soldering lugs are tin-plated.



Technical data

Electrical specification

Contact load:	5 A
Contact resistance:	≤ 4 mΩ
Insulation resistance:	> 1 GΩ
Test voltage:	1,500 V ~

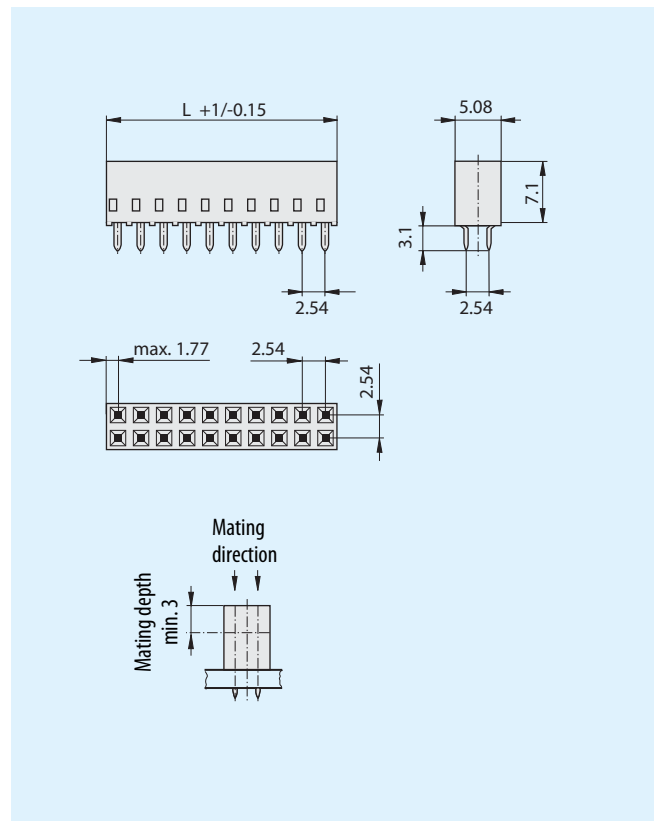
Mechanical specification

Operating temperature:	- 40 °C to +125 °C
Humidity level:	75 % rel. humidity in accordance with DIN EN 60721-3-3

Material and surface plating

Contact surface	
Mating area:	0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00 *)
Termination area:	2.0 μm Sn on 1.25 μm Ni
Insulator material:	PBT grey GF in accordance with UL94 V-0
Contact material:	Copper alloy
Terminations:	Solder contacts

Dimensions



*) Applies to contact points in the mating area.
Rest of surface plating is flash-gold-plated or Sn on Ni.

**ODU CARD female headers, Series 517
for pin headers in cross-section 0.64 × 0.64 mm**

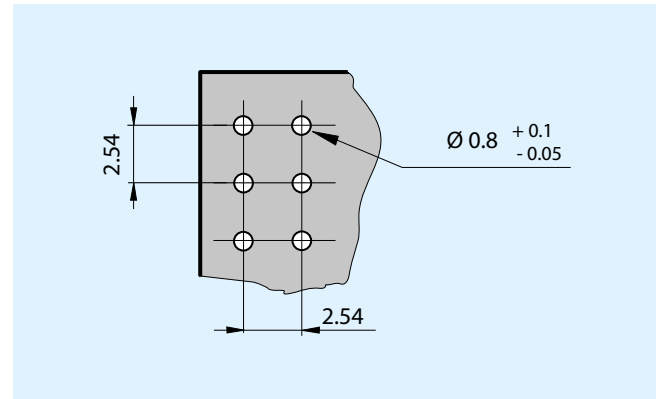
2-row, for vertical assembly with cranked soldering lugs, in soldering pitch 2.54 mm × 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾
2	2.54	517.033.003.002.000
4	5.08	517.033.003.004.000
6	7.62	517.033.003.006.000
8	10.16	517.033.003.008.000
10	12.70	517.033.003.010.000
12	15.24	517.033.003.012.000
14	17.78	517.033.003.014.000
16	20.32	517.033.003.016.000
18	22.86	517.033.003.018.000
20	25.40	517.033.003.020.000
22	27.94	517.033.003.022.000
24	30.48	517.033.003.024.000
26	33.02	517.033.003.026.000
28	35.56	517.033.003.028.000
30	38.10	517.033.003.030.000
32	40.64	517.033.003.032.000
34	43.18	517.033.003.034.000
36	45.72	517.033.003.036.000
38	48.26	517.033.003.038.000
40	50.80	517.033.003.040.000
42	53.34	517.033.003.042.000
44	55.88	517.033.003.044.000
46	58.42	517.033.003.046.000
48	60.96	517.033.003.048.000
50	63.50	517.033.003.050.000
52	66.04	517.033.003.052.000
54	68.58	517.033.003.054.000
56	71.12	517.033.003.056.000
58	73.66	517.033.003.058.000
60	76.20	517.033.003.060.000

PCB layout



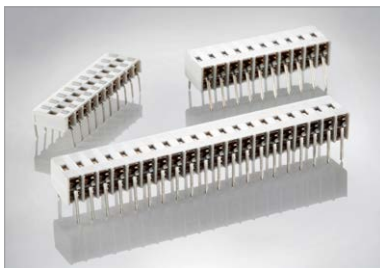
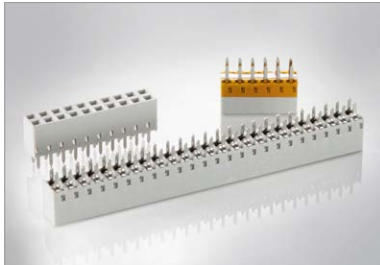
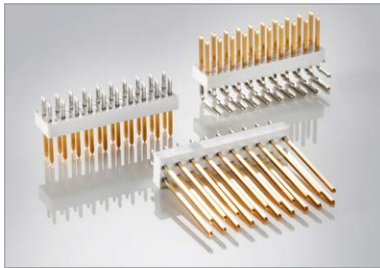
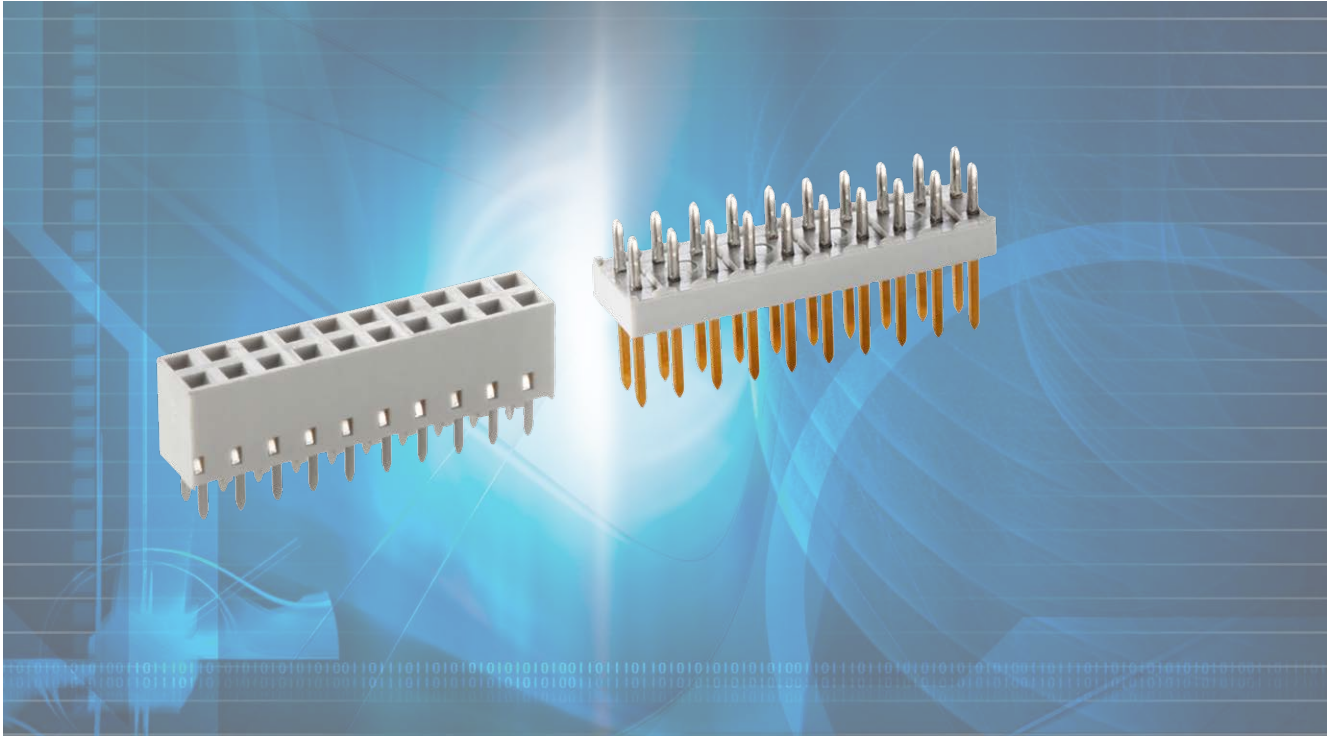
¹⁾ For _ please enter the required surface plating:

- 003: 0.5 µm Au on Ni (standard)
- 009: Flash-gold-plated (upon request)
- 035: 0.75 µm Au on Ni (upon request)

Number codes, see page 5.

Vertical models with straight or cranked soldering lugs are also available with covering foil (solder proof).

ODU CARD Pin headers Series 511



Contents

Pin headers, Series 511

Chapter		From page	
1	Number codes for ODU CARD, Series 511	20	
2	1-row pin headers	21	
3	2-row pin headers	27	

Explanation of number codes for ODU CARD, Series 511

In 2.54-mm pitch for cross-section 0.64 × 0.64 mm

No.	Meaning	Coding
A	Series	511 = Pin headers, pitch 2.54 mm
B	Type *	020 = Pluggable on one side, insulator 3.5 / 2.8 mm Mating length 6.0 mm, 1-row, straight 024 = Pluggable on one side, insulator 2.5 / 2.5 mm Mating length 6.0 mm, 1-row, straight 021 = Pluggable on one side, insulator 3.5 / 2.8 mm Mating length 18.0 mm, 1-row, straight 025 = Pluggable on one side, insulator 2.5 / 2.5 mm Mating length 18.0 mm, 1-row, straight 030 = Pluggable on one side, insulator 6.04 / 2.8 mm Mating length 6.0 mm, 2-row, straight 032 = Pluggable on one side, insulator 5.08 / 2.8 mm Mating length 6.0 mm, 2-row, straight 031 = Pluggable on one side, insulator 6.04 / 2.8 mm Mating length 18.0 mm, 2-row, straight 037 = Pluggable on one side, insulator 5.08 / 2.8 mm Mating length 18.0 mm, 2-row, straight 270 = Pluggable on one side, mating length 6.5 mm, 2-row, angled 280 = Pluggable on one side, mating length 6.5 mm, 1-row, angled (see Female headers)
C	Surface plating (see Female headers)	003 = In mating area 0.5 µm Au on Ni, In termination area 2.0 µm Sn on Ni (standard) 009 = Flash-gold-plated (upon request) 035 = In mating area 0.75 µm Au on Ni, In termination area 2.0 µm Sn on Ni (upon request)
D	Number of contacts	010 = 10 contacts (example)
E	Packaging	000 = Cardboard box

* for B / Type: additional mating lengths upon request

Ordering example for Series 511

A	B	C	D	E
5	1 1 . 0 2 0	. 0 0 3	. 0 1 0	. 0 0 0

- A = Series: 511 Pin headers, pitch 2.54 mm
- B = Type: pluggable on one side, insulator 3.5/2.8 mm, mating length 6.0 mm, 1-row, straight
- C = Surface plating: in mating area 0.5 µm Sn on Ni
 in termination area 2.0 µm Sn on Ni (standard)
- D = Number of contacts: 10
- E = Packaging: cardboard box

ODU CARD pin headers, Series 511
Cross-section 0.64 × 0.64 mm

1-row, with straight solder pins, mating length 6.0 mm, in pitch 2.54 mm

Technical data

Electrical specification

Contact load: 5 A
 Contact resistance: ≤ 4 mΩ
 Insulation resistance: > 5 GΩ
 Test voltage: 1,500 V ~

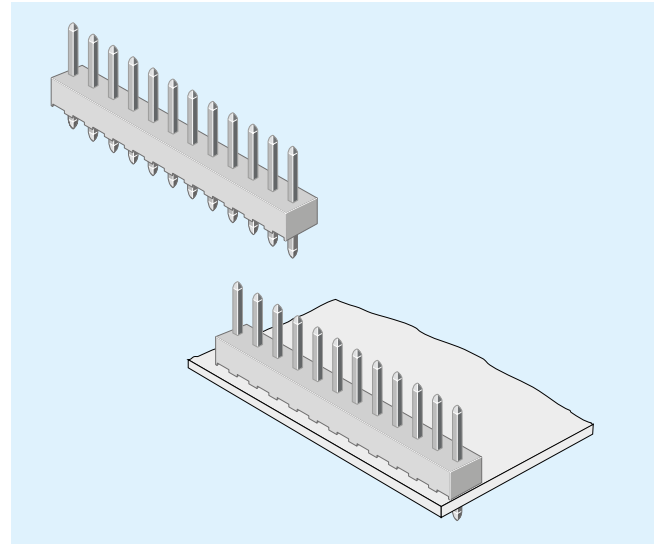
Mechanical specification

Operating temperature: - 40°C to +125°C
 Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

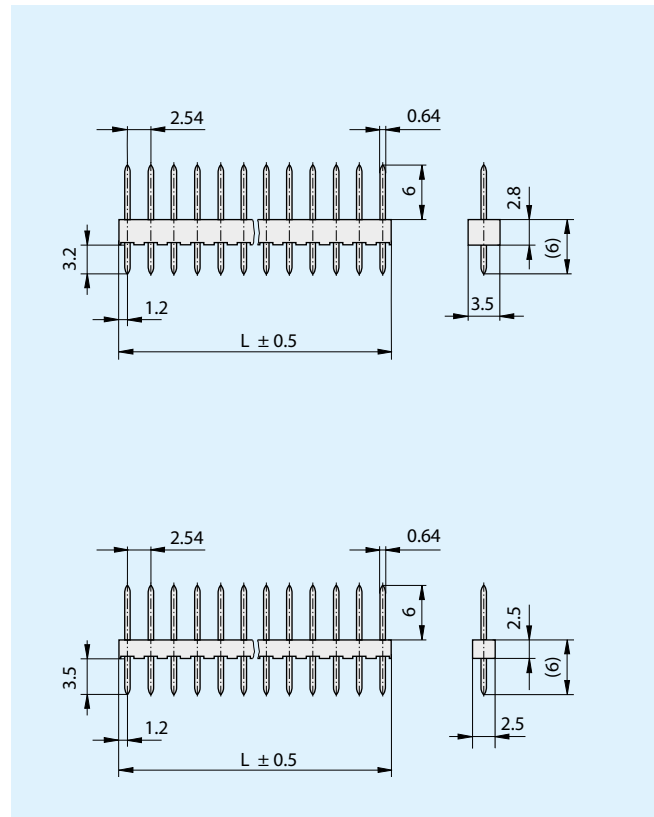
Material and surface plating

Contact surface
 Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00*)
 Termination area: 2 μm Sn on 1.25 μm Ni
 Insulator material: PBT grey
 GF in accordance with UL94 V-0
 Contact material: Copper alloy
 Terminations: Solder pins

*) Applies to contact points in the mating area.
 Rest of surface plating is flash-gold-plated or Sn on Ni.



Dimensions



ODU CARD pin headers, Series 511 Cross-section 0.64 × 0.64 mm

1-row, with straight solder pins, mating length 6.0 mm, in pitch 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

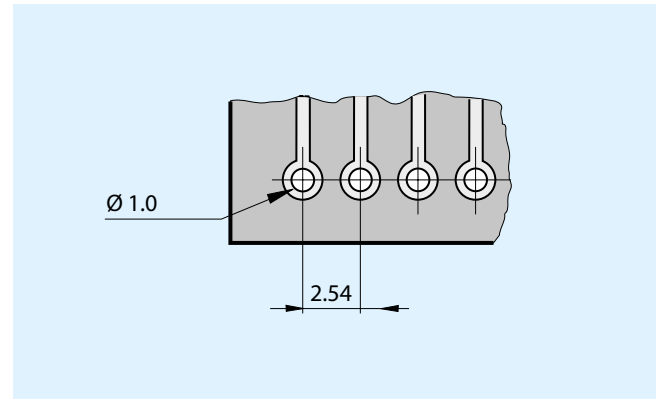
Number of contacts	Dimension L	Part number ¹⁾	
		Insulator 3.5 / 2.8	Insulator 2.5 / 2.5
2	4.94	511.020.003.002.000	511.024.003.002.000
3	7.48	511.020.003.003.000	511.024.003.003.000
4	10.02	511.020.003.004.000	511.024.003.004.000
5	12.56	511.020.003.005.000	511.024.003.005.000
6	15.10	511.020.003.006.000	511.024.003.006.000
7	17.64	511.020.003.007.000	511.024.003.007.000 ²⁾
8	20.18	511.020.003.008.000	511.024.003.008.000
9	22.72	511.020.003.009.000	511.024.003.009.000
10	25.26	511.020.003.010.000	511.024.003.010.000
11	27.80	511.020.003.011.000	511.024.003.011.000
12	30.34	511.020.003.012.000	511.024.003.012.000
13	32.88	511.020.003.013.000	511.024.003.013.000 ²⁾
14	35.42	511.020.003.014.000	511.024.003.014.000
15	37.96	511.020.003.015.000	511.024.003.015.000 ²⁾
16	40.50	511.020.003.016.000	511.024.003.016.000
17	43.03	511.020.003.017.000	511.024.003.017.000 ²⁾
18	45.58	511.020.003.018.000	511.024.003.018.000 ²⁾
19	48.12	511.020.003.019.000	511.024.003.019.000
20	50.66	511.020.003.020.000	511.024.003.020.000
21	53.20	511.020.003.021.000	511.024.003.021.000 ²⁾
22	55.74	511.020.003.022.000	511.024.003.022.000 ²⁾
23	58.28	511.020.003.023.000	511.024.003.023.000
24	60.82	511.020.003.024.000	511.024.003.024.000 ²⁾
25	63.36	511.020.003.025.000	511.024.003.025.000 ²⁾
26	65.90	511.020.003.026.000	511.024.003.026.000 ²⁾
27	68.44	511.020.003.027.000	511.024.003.027.000 ²⁾
28	70.98	511.020.003.028.000	511.024.003.028.000 ²⁾
29	73.52	511.020.003.029.000	511.024.003.029.000 ²⁾
30	76.06	511.020.003.030.000	511.024.003.030.000 ²⁾

¹⁾ For _ please enter the required surface plating:
 003: 0.5 µm Au on Ni (standard)
 009: Flash-gold-plated (upon request)
 035: 0.75 µm Au on Ni (upon request)

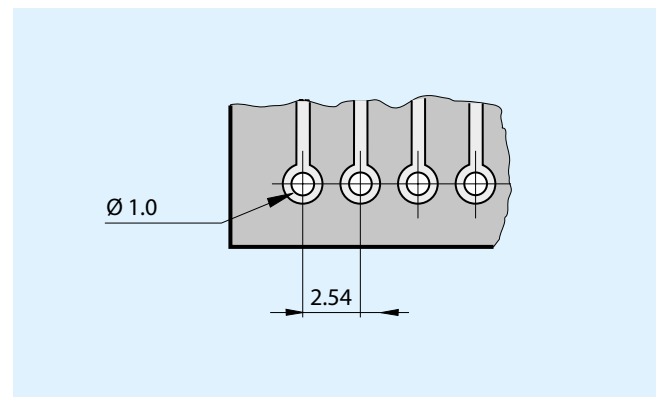
²⁾ Upon request

Number codes, see page 5.

PCB layout for Insulator 3.5 / 2.8



PCB layout for Insulator 2.5 / 2.5



ODU CARD pin headers, Series 511
Cross-section 0.64 × 0.64 mm

1-row, with straight solder pins, mating length 18.0 mm, in pitch 2.54 mm

Technical data

Electrical specification

Contact load: 5 A
 Contact resistance: ≤ 4 mΩ
 Insulation resistance: > 5 GΩ
 Test voltage: 1,500 V ~

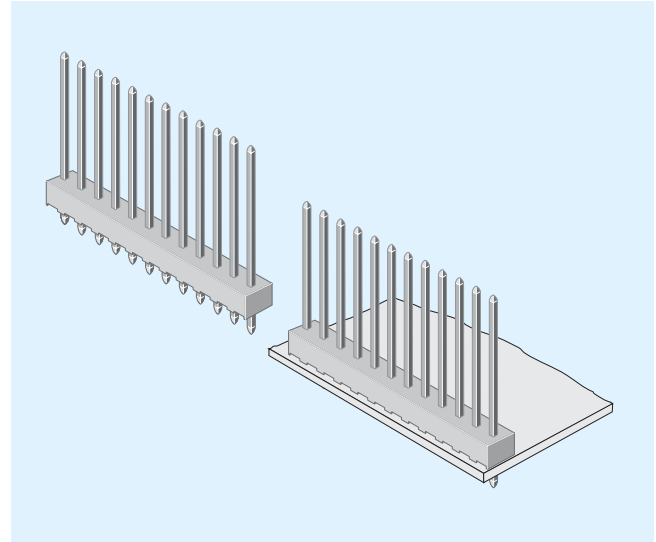
Mechanical specification

Operating temperature: - 40°C to +125°C
 Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

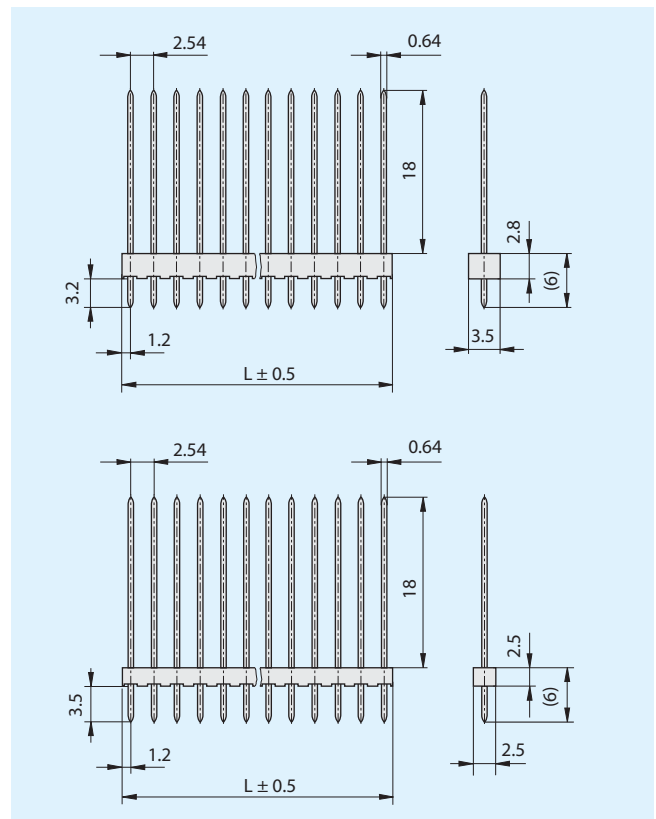
Material and surface plating

Contact surface
 Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00*)
 Termination area: 2 μm Sn auf 1,25 μm Ni
 Insulator material: PBT grey GF in accordance with UL94 V-0
 Contact material: Copper alloy
 Terminations: Solder pins

*) Applies to contact points in the mating area.
 Rest of surface plating is flash-gold-plated or Sn on Ni.



Dimensions



Pin headers also available in other mating lengths upon request.

ODU CARD pin headers, Series 511 Cross-section 0.64 × 0.64 mm

1-row, with straight solder pins, mating length 18.0 mm, in pitch 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

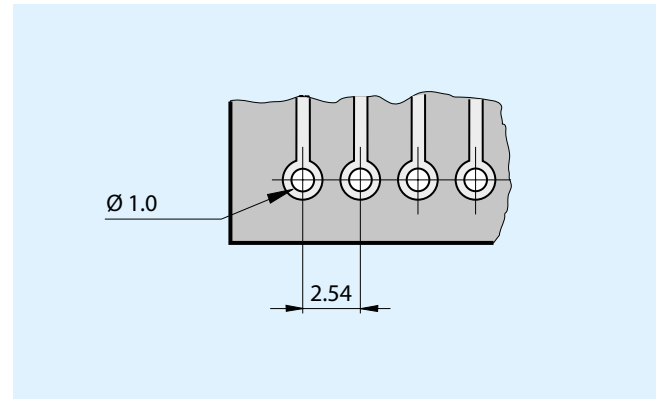
Number of contacts	Dimension L	Part number ¹⁾	
		Insulator 3.5 / 2.8	Insulator 2.5 / 2.5
2	4.94	511.021.003.002.000	511.025.003.002.000 ²⁾
3	7.48	511.021.003.003.000	511.025.003.003.000 ²⁾
4	10.02	511.021.003.004.000	511.025.003.004.000 ²⁾
5	12.56	511.021.003.005.000	511.025.003.005.000 ²⁾
6	15.10	511.021.003.006.000	511.025.003.006.000 ²⁾
7	17.64	511.021.003.007.000	511.025.003.007.000 ²⁾
8	20.18	511.021.003.008.000	511.025.003.008.000 ²⁾
9	22.72	511.021.003.009.000	511.025.003.009.000 ²⁾
10	25.26	511.021.003.010.000	511.025.003.010.000
11	27.80	511.021.003.011.000	511.025.003.011.000 ²⁾
12	30.34	511.021.003.012.000	511.025.003.012.000 ²⁾
13	32.88	511.021.003.013.000	511.025.003.013.000 ²⁾
14	35.42	511.021.003.014.000	511.025.003.014.000 ²⁾
15	37.96	511.021.003.015.000	511.025.003.015.000 ²⁾
16	40.50	511.021.003.016.000	511.025.003.016.000
17	43.03	511.021.003.017.000	511.025.003.017.000 ²⁾
18	45.58	511.021.003.018.000	511.025.003.018.000 ²⁾
19	48.12	511.021.003.019.000	511.025.003.019.000 ²⁾
20	50.66	511.021.003.020.000	511.025.003.020.000
21	53.20	511.021.003.021.000	511.025.003.021.000 ²⁾
22	55.74	511.021.003.022.000	511.025.003.022.000 ²⁾
23	58.28	511.021.003.023.000	511.025.003.023.000 ²⁾
24	60.82	511.021.003.024.000	511.025.003.024.000 ²⁾
25	63.36	511.021.003.025.000	511.025.003.025.000 ²⁾
26	65.90	511.021.003.026.000	511.025.003.026.000 ²⁾
27	68.44	511.021.003.027.000	511.025.003.027.000 ²⁾
28	70.98	511.021.003.028.000	511.025.003.028.000 ²⁾
29	73.52	511.021.003.029.000	511.025.003.029.000 ²⁾
30	76.06	511.021.003.030.000	511.025.003.030.000

¹⁾ For _ please enter the required surface plating:
 003: 0.5 µm Au on Ni (standard)
 009: Flash-gold-plated (upon request)
 035: 0.75 µm Au on Ni (upon request)

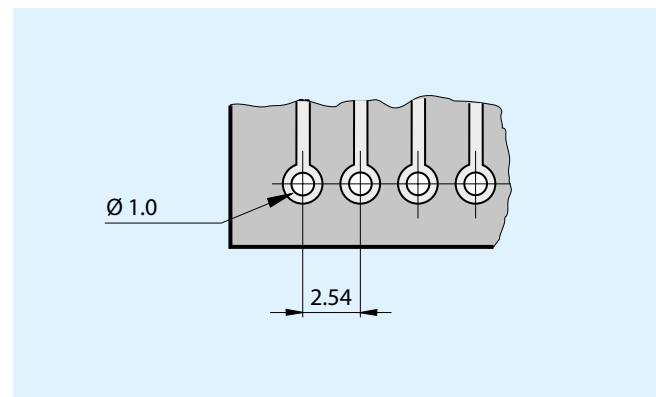
²⁾ Upon request

Number codes, see page 5.

PCB layout for Insulator 3.5 / 2.8



PCB layout for Insulator 2.5 / 2.5



ODU CARD pin headers, Series 511
Cross-section 0.64 × 0.64 mm

1-row, with angled solder pins, mating length 6.5 mm, in pitch 2.54 mm

Technical data

Electrical specification

Contact load: 5 A
 Contact resistance: ≤ 4 mΩ
 Insulation resistance: > 5 GΩ
 Test voltage: 1,500 V ~

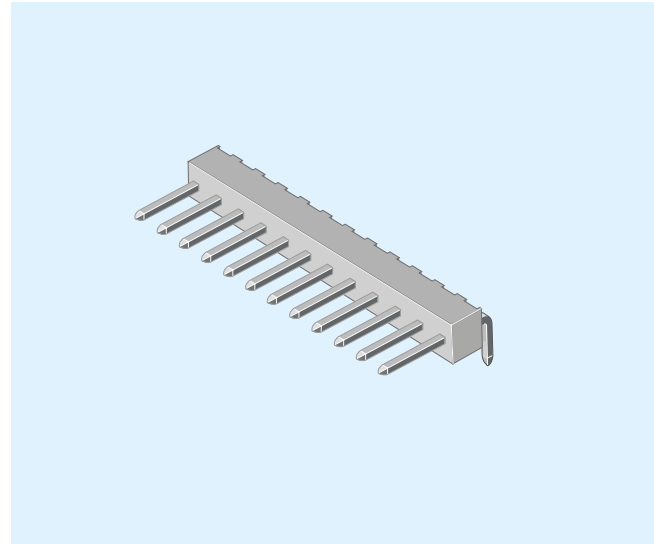
Mechanical specification

Operating temperature: - 40 °C to +125 °C
 Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

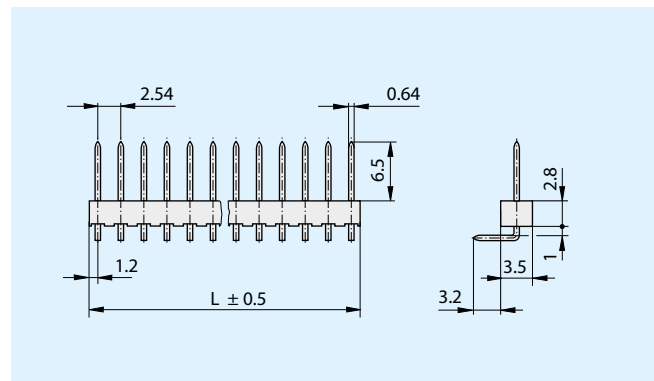
Material and surface plating

Contact surface
 Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00*)
 Termination area: 2 μm Sn auf 1,25 μm Ni
 Insulator material: PBT grey GF in accordance with UL94 V-0
 Contact material: Copper alloy
 Terminations: Solder pins

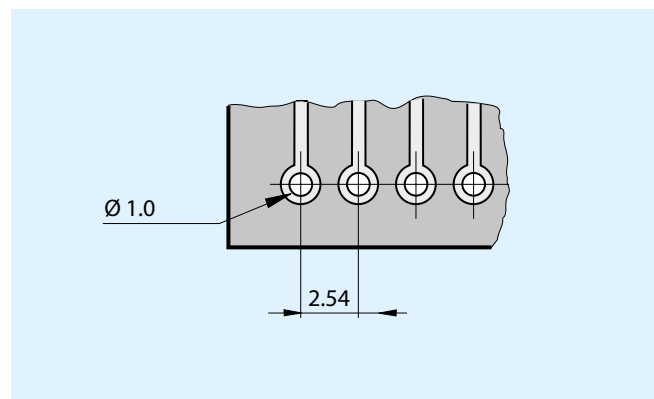
*) Applies to contact points in the mating area.
 Rest of surface plating is flash-gold-plated or Sn on Ni.



Dimensions



PCB layout



ODU CARD pin headers, Series 511

Cross-section 0.64 × 0.64 mm

1-row, with angled solder pins, mating length 6.5 mm, in pitch 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾
		Mating length 6.5 mm, 1-row, angled
2	4.94	511.280.003.002.000
3	7.48	511.280.003.003.000
4	10.02	511.280.003.004.000
5	12.56	511.280.003.005.000
6	15.10	511.280.003.006.000
7	17.64	511.280.003.007.000
8	20.18	511.280.003.008.000
9	22.72	511.280.003.009.000
10	25.26	511.280.003.010.000
11	27.80	511.280.003.011.000
12	30.34	511.280.003.012.000
13	32.88	511.280.003.013.000
14	35.42	511.280.003.014.000
15	37.96	511.280.003.015.000
16	40.50	511.280.003.016.000
17	43.03	511.280.003.017.000
18	45.58	511.280.003.018.000
19	48.12	511.280.003.019.000
20	50.66	511.280.003.020.000
21	53.20	511.280.003.021.000
22	55.74	511.280.003.022.000
23	58.28	511.280.003.023.000
24	60.82	511.280.003.024.000
25	63.36	511.280.003.025.000
26	65.90	511.280.003.026.000
27	68.44	511.280.003.027.000
28	70.98	511.280.003.028.000
29	73.52	511.280.003.029.000
30	76.06	511.280.003.030.000

¹⁾ For _ please enter the required surface plating:

003: 0.5 µm Au on Ni (standard)

009: Flash-gold-plated (upon request)

035: 0.75 µm Au on Ni (upon request)

Number codes, see page 5.

ODU CARD pin headers, Series 511
Cross-section 0.64 × 0.64 mm

2-row, with straight solder pins, mating length 6.0 mm, in pitch 2.54 mm

Technical data

Electrical specification

Contact load: 5 A
 Contact resistance: ≤ 4 mΩ
 Insulation resistance: > 5 GΩ
 Test voltage: 1,500 V ~

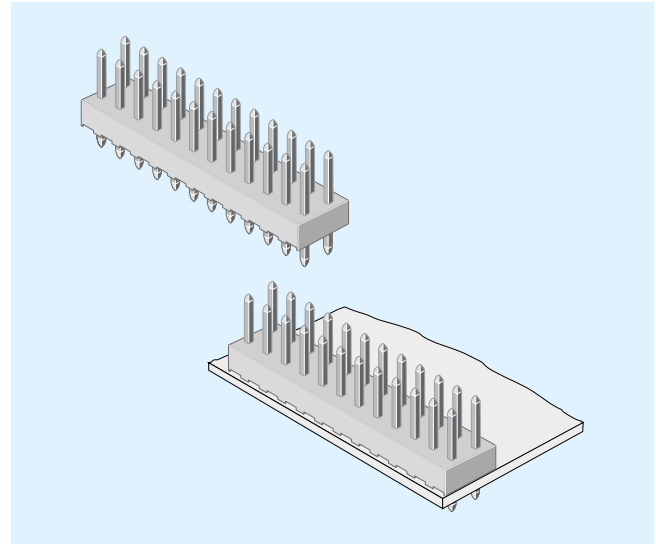
Mechanical specification

Operating temperature: - 40°C to +125°C
 Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

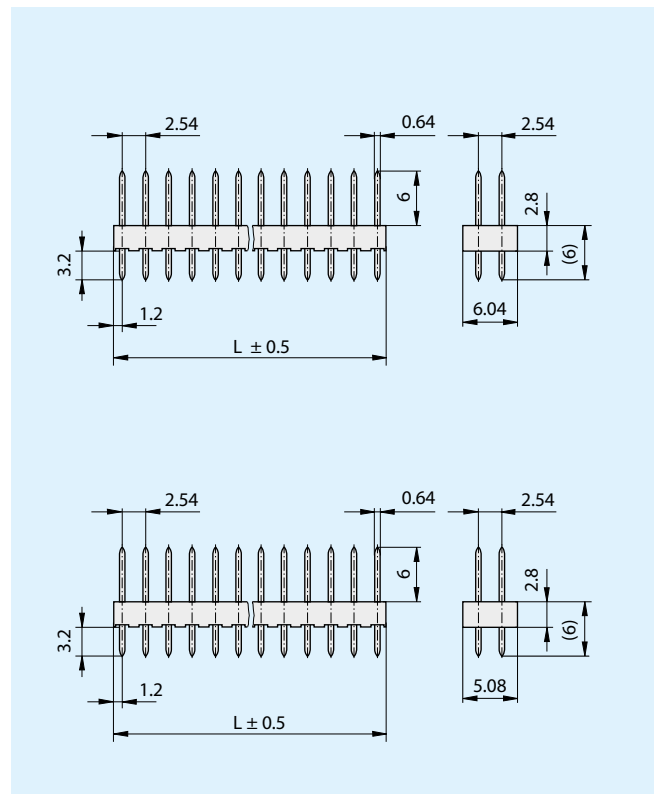
Material and surface plating

Contact surface
 Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00*)
 Termination area: 2 μm Sn auf 1,25 μm Ni
 Insulator material: PBT grey
 GF in accordance with UL94 V-0
 Contact material: Copper alloy
 Terminations: Solder pins

*) Applies to contact points in the mating area.
 Rest of surface plating is flash-gold-plated or Sn on Ni.



Dimensions



ODU CARD pin headers, Series 511 Cross-section 0.64 × 0.64 mm

2-row, with straight solder pins, mating length 6.0 mm, in pitch 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾	
		Insulator 6.04 / 2.8	Insulator 5.08 / 2.8
2	2.40	511.030.003.002.000	511.032.003.002.000
4	4.94	511.030.003.004.000	511.032.003.004.000
6	1.48	511.030.003.006.000	511.032.003.006.000
8	10.02	511.030.003.008.000	511.032.003.008.000
10	12.56	511.030.003.010.000	511.032.003.010.000
12	15.10	511.030.003.012.000	511.032.003.012.000
14	11.64	511.030.003.014.000	511.032.003.014.000
16	20.18	511.030.003.016.000	511.032.003.016.000
18	22.12	511.030.003.018.000	511.032.003.018.000
20	25.26	511.030.003.020.000	511.032.003.020.000
22	21.80	511.030.003.022.000	511.032.003.022.000
24	30.34	511.030.003.024.000	511.032.003.024.000
26	32.88	511.030.003.026.000	511.032.003.026.000
28	35.42	511.030.003.028.000	511.032.003.028.000
30	31.96	511.030.003.030.000	511.032.003.030.000
32	40.50	511.030.003.032.000	511.032.003.032.000
34	43.03	511.030.003.034.000	511.032.003.034.000
36	45.58	511.030.003.036.000	511.032.003.036.000
38	48.12	511.030.003.038.000	511.032.003.038.000 ²⁾
40	50.66	511.030.003.040.000	511.032.003.040.000
42	53.20	511.030.003.042.000	511.032.003.042.000 ²⁾
44	55.14	511.030.003.044.000	511.032.003.044.000
46	58.28	511.030.003.046.000	511.032.003.046.000 ²⁾
48	60.82	511.030.003.048.000	511.032.003.048.000
50	63.36	511.030.003.050.000	511.032.003.050.000
52	65.90	511.030.003.052.000	511.032.003.052.000
54	68.44	511.030.003.054.000	511.032.003.054.000 ²⁾
56	10.98	511.030.003.056.000	511.032.003.056.000
58	13.52	511.030.003.058.000	511.032.003.058.000 ²⁾
60	16.06	511.030.003.060.000	511.032.003.060.000

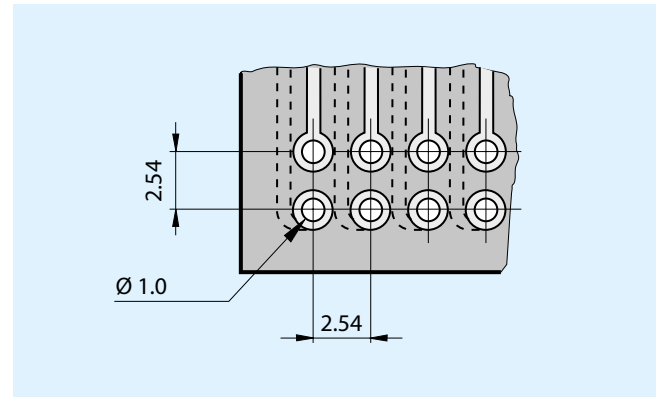
¹⁾ For _ please enter the required surface plating:

- 003: 0.5 µm Au on Ni (standard)
- 009: Flash-gold-plated (upon request)
- 035: 0.75 µm Au on Ni (upon request)

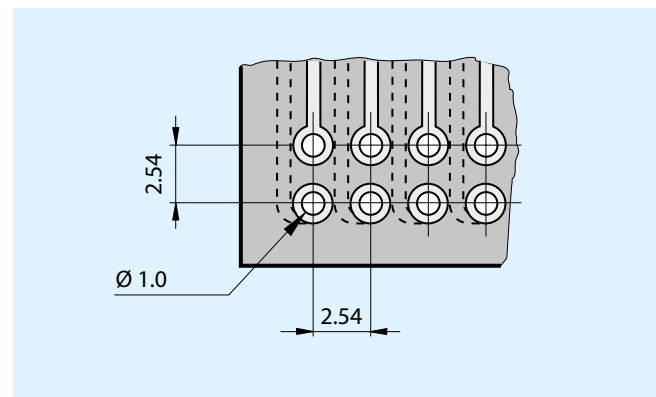
²⁾ Upon request

Number codes, see page 5.

PCB layout for Insulator 6.04 / 2.8



PCB layout for Insulator 5.08 / 2.8



ODU CARD pin headers, Series 511
Cross-section 0.64 × 0.64 mm

2-row, with straight solder pins, mating length 18.0 mm, in pitch 2.54 mm

Technical data

Electrical specification

- Contact load: 5 A
- Contact resistance: ≤ 4 mΩ
- Insulation resistance: > 5 GΩ
- Test voltage: 1,500 V ~

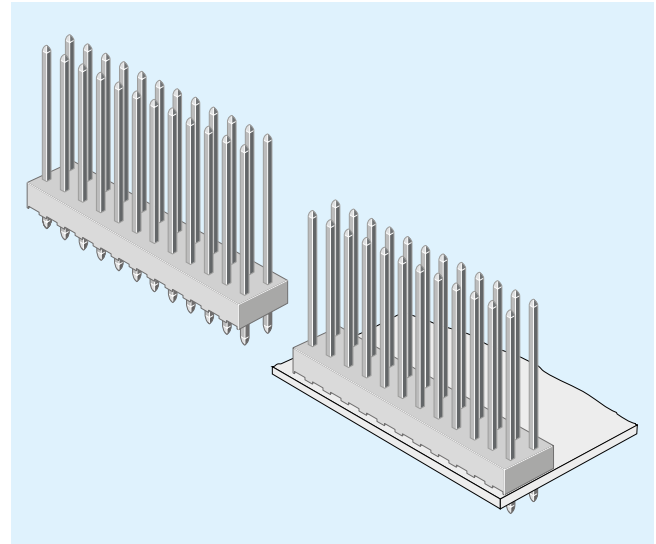
Mechanical specification

- Operating temperature: - 40°C to +125°C
- Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

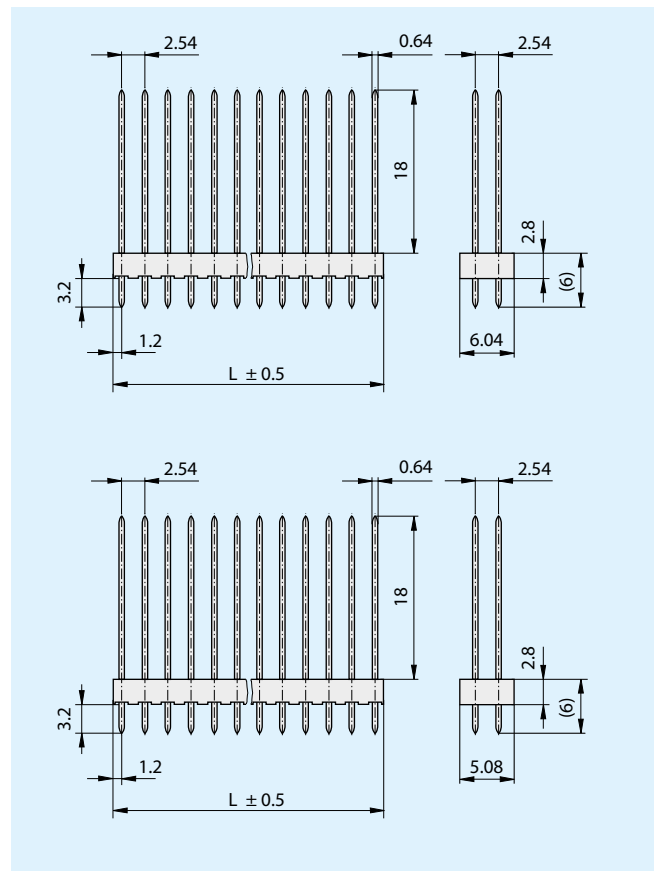
Material and surface plating

- Contact surface
 - Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00*)
 - Termination area: 2 μm Sn auf 1,25 μm Ni
- Insulator material: PBT grey GF in accordance with UL94 V-0
- Contact material: Copper alloy
- Terminations: Solder pins

*) Applies to contact points in the mating area.
 Rest of surface plating is flash-gold-plated or Sn on Ni.



Dimensions



ODU CARD pin headers, Series 511 Cross-section 0.64 × 0.64 mm

2-row, with straight solder pins, mating length 18.0 mm, in pitch 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾	
		Insulator 6.04 / 2.8	Insulator 5.08 / 2.8
2	2.40	511.031.003.002.000	511.037.003.002.000
4	4.94	511.031.003.004.000	511.037.003.004.000
6	7.48	511.031.003.006.000	511.037.003.006.000
8	10.02	511.031.003.008.000	511.037.003.008.000
10	12.56	511.031.003.010.000	511.037.003.010.000
12	15.10	511.031.003.012.000	511.037.003.012.000
14	17.64	511.031.003.014.000	511.037.003.014.000
16	20.18	511.031.003.016.000	511.037.003.016.000
18	22.72	511.031.003.018.000	511.037.003.018.000
20	25.26	511.031.003.020.000	511.037.003.020.000
22	27.80	511.031.003.022.000	511.037.003.022.000
24	30.34	511.031.003.024.000	511.037.003.024.000
26	32.88	511.031.003.026.000	511.037.003.026.000
28	35.42	511.031.003.028.000	511.037.003.028.000
30	37.96	511.031.003.030.000	511.037.003.030.000
32	40.50	511.031.003.032.000	511.037.003.032.000
34	43.03	511.031.003.034.000	511.037.003.034.000
36	45.58	511.031.003.036.000	511.037.003.036.000
38	48.12	511.031.003.038.000	511.037.003.038.000
40	50.66	511.031.003.040.000	511.037.003.040.000
42	53.20	511.031.003.042.000	511.037.003.042.000
44	55.74	511.031.003.044.000	511.037.003.044.000
46	58.28	511.031.003.046.000	511.037.003.046.000
48	60.82	511.031.003.048.000	511.037.003.048.000
50	63.36	511.031.003.050.000	511.037.003.050.000
52	65.90	511.031.003.052.000	511.037.003.052.000
54	68.44	511.031.003.054.000	511.037.003.054.000
56	70.98	511.031.003.056.000	511.037.003.056.000
58	73.52	511.031.003.058.000	511.037.003.058.000
60	76.06	511.031.003.060.000	511.037.003.060.000

¹⁾ For _ please enter the required surface plating:

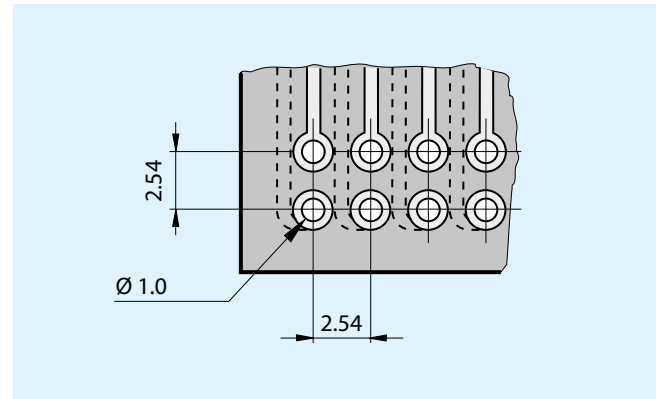
003: 0.5 µm Au on Ni (standard)

009: Flash-gold-plated (upon request)

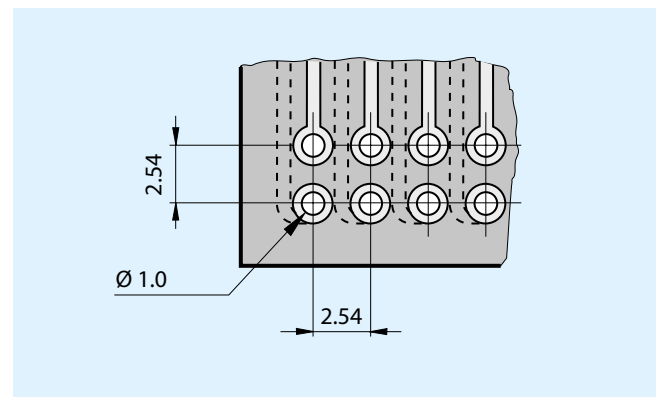
035: 0.75 µm Au on Ni (upon request)

Number codes, see page 5.

PCB layout for Insulator 6.04 / 2.8



PCB layout for Insulator 5.08 / 2.8



ODU CARD pin headers, Series 511
Cross-section 0.64 × 0.64 mm

2-row, with angled solder pins, mating length 6.5 mm, in pitch 2.54 mm

Technical data

Electrical specification

Contact load: 5 A
 Contact resistance: ≤ 4 mΩ
 Insulation resistance: > 5 GΩ
 Test voltage: 1,500 V ~

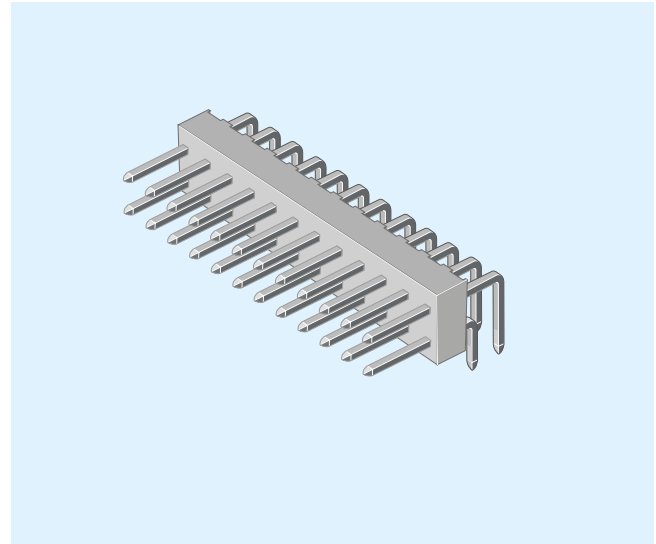
Mechanical specification

Operating temperature: - 40°C to +125°C
 Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3

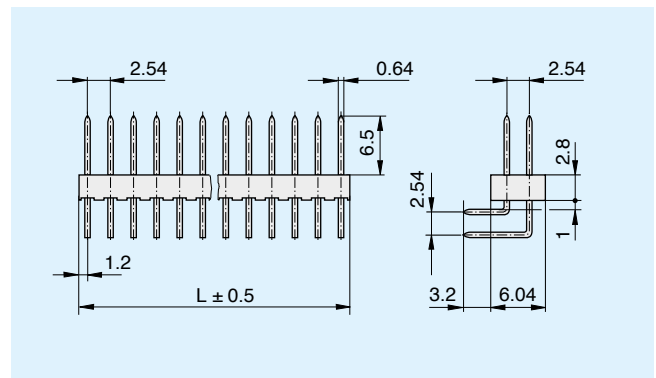
Material and surface plating

Contact surface
 Mating area: 0.5 μm Au on 1.25 μm Ni / MIL-G-45204 Cl. 00*)
 Termination area: 2 μm Sn auf 1,25 μm Ni
 Insulator material: PBT grey GF in accordance with UL94 V-0
 Contact material: Copper alloy
 Terminations: Solder pins

*) Applies to contact points in the mating area.
 Rest of surface plating is flash-gold-plated or Sn on Ni.



Dimensions



ODU CARD pin headers, Series 511
Cross-section 0.64 × 0.64 mm

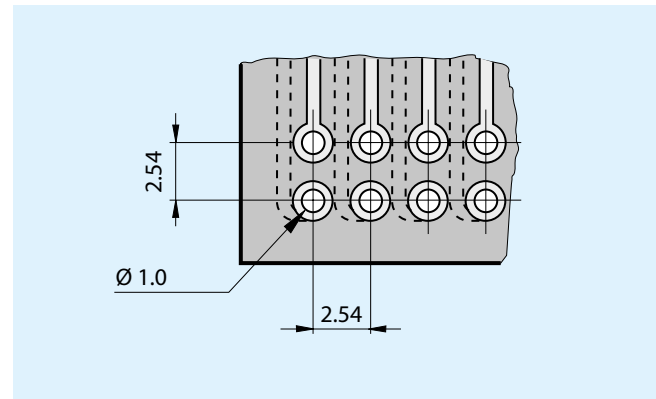
2-row, with angled solder pins, mating length 6.5 mm, in pitch 2.54 mm

Order information and dimensional table

(All dimensions are in mm)

Number of contacts	Dimension L	Part number ¹⁾
		Mating length 6.5 mm, 2-row, angled
2	2.40	511.270.003.002.000
4	4.94	511.270.003.004.000
6	7.48	511.270.003.006.000
8	10.02	511.270.003.008.000
10	12.56	511.270.003.010.000
12	15.10	511.270.003.012.000
14	17.64	511.270.003.014.000
16	20.18	511.270.003.016.000
18	22.72	511.270.003.018.000
20	25.26	511.270.003.020.000
22	27.80	511.270.003.022.000
24	30.34	511.270.003.024.000
26	32.88	511.270.003.026.000
28	35.42	511.270.003.028.000
30	37.96	511.270.003.030.000
32	40.50	511.270.003.032.000
34	43.03	511.270.003.034.000
36	45.58	511.270.003.036.000
38	48.12	511.270.003.038.000
40	50.66	511.270.003.040.000
42	53.20	511.270.003.042.000
44	55.74	511.270.003.044.000
46	58.28	511.270.003.046.000
48	60.82	511.270.003.048.000
50	63.36	511.270.003.050.000
52	65.90	511.270.003.052.000
54	68.44	511.270.003.054.000
56	70.98	511.270.003.056.000
58	73.52	511.270.003.058.000
60	76.06	511.270.003.060.000

PCB layout



¹⁾ For _ please enter the required surface plating:

- 003: 0.5 µm Au on Ni (standard)
- 009: Flash-gold-plated (upon request)
- 035: 0.75 µm Au on Ni (upon request)

Number codes, see page 5.



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