**Description:**
With the most compact dimensions and maximum performance, ODU MINI-CARD® sets up the optimal connection between boards, for both THT and SMT soldering. The two guiding pins moulded on to the insulator simplify the centring during assembly and absorb the PCB’s horizontal mechanical forces.

**Board-to-board connector, pitch 1.27 × 2.54 mm.**

**Features:**
- Detachable connection using pin and female headers
- 2-row
- 12, 16, 30, 40 and 50 contacts
- Pin headers: 2 THT and 5 SMT models
- Female headers in SMT termination technology
- Fully automatic placement (pick-and-place) in the SMT versions using vacuum adapter plate and tape-and-reel packaging

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

Issue: 2014-03
## Contents

Female headers for Series 525

<table>
<thead>
<tr>
<th>Chapter</th>
<th>From page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number key for ODU MINI-CARD®, Series 525</td>
</tr>
<tr>
<td>2</td>
<td>Technical data</td>
</tr>
<tr>
<td>3</td>
<td>SMT female headers</td>
</tr>
</tbody>
</table>
### Explanation of number codes for ODU MINI-CARD®, Series 525

<table>
<thead>
<tr>
<th>No.</th>
<th>Meaning</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Series</td>
<td>$525$ = Female headers</td>
</tr>
</tbody>
</table>
| B   | Type            | $026$ = SMT version (not stackable)  
$031$ = SMT version (stackable) |
| C   | Surface         | $035 = In mating area 0.75 μm Au on Ni, in termination area 2.0 μm Sn on Ni |
| D   | Number of contacts | $012 = 12 contacts (example) |
| E   | Packaging       | $002 = Tube  
$050 = Tape-and-reel |

### Ordering example for Series 525

```
5 2 5 . 0 3 1 . 0 3 5 . 0 1 2 . 0 0 2
```

A = Series: $525$ Female headers  
B = Type: SMT version (stackable)  
C = Surface: In mating area 0.75 μm Au on Ni  
in termination area 2.0 μm Sn μm on Ni  
D = Number of contacts: 12 contacts  
E = Packaging: Tube
ODU MINI-CARD® female headers, Series 525

Technical data

Electrical specification
- Contact resistance: \( \leq 6 \text{ m}\Omega \)
- Test voltage: 500 V eff.
- Operating voltage: 30 V
- Nominal current: 0.5 A
  (single contact at 25 °C)
- Insulation resistance \( \geq 1 \text{ G}\Omega \)

Mechanical specification
- Operating temperature: \(-40 \text{ °C to } +125 \text{ °C}\)
- SMT solder temperature 260 °C
  at solder point max. 30 s:
- Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3
- Mating force per contact: \(< 0.18 \text{ N}\)
- Mating cycles: \(> 100\)

Material and surface plating
- Contact surface
  - Mating area: 0.75 \(\mu\)m Au on 1.25 \(\mu\)m Ni
  - Termination area: 2.0 \(\mu\)m Sn on 1.25 \(\mu\)m Ni
- Insulator material: LCP black
  GF acc. to UL 94 V-0
- Contact material: Sockets: Be-Cu alloy
ODU MINI-CARD® SMT female header
2-row, straight, in pitch 1.27 × 2.54 mm

Features
– Component height 6.0 mm
– 525.031. fully stackable without contact loss
– SMT female header for board-to-board connection
– Vacuum adapter plate
– 2 moulded-on guiding pins

Technical data, see page 6.

Dimensional drawing (schematic)

Order information and dimensional table (All dimensions are in mm)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>Part number</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension C</th>
<th>Dimension D</th>
<th>Packaging unit _ = 002 Tube</th>
<th>Packaging unit _ = 050 Tape-and-reel</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>525.026.035.012</td>
<td>6.35</td>
<td>7.95</td>
<td>5.08</td>
<td>1.5</td>
<td>40</td>
<td>600</td>
</tr>
<tr>
<td>16</td>
<td>525.026.035.016</td>
<td>8.89</td>
<td>10.49</td>
<td>7.62</td>
<td>1</td>
<td>40</td>
<td>500</td>
</tr>
<tr>
<td>30</td>
<td>525.031.035.030</td>
<td>17.78</td>
<td>18.98</td>
<td>16.51</td>
<td>1</td>
<td>20</td>
<td>500</td>
</tr>
<tr>
<td>40</td>
<td>525.031.035.040</td>
<td>24.13</td>
<td>25.33</td>
<td>22.86</td>
<td>1</td>
<td>15</td>
<td>550</td>
</tr>
<tr>
<td>50</td>
<td>525.031.035.050</td>
<td>30.48</td>
<td>31.68</td>
<td>29.21</td>
<td>1</td>
<td>10</td>
<td>550</td>
</tr>
</tbody>
</table>

* fully stackable, without contact loss
## Contents

**Pin headers for Series 515**

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
<th>From page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number codes for ODU MINI-CARD®, Series 515</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Technical data</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>THT pin headers</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>SMT pin headers</td>
<td>13</td>
</tr>
</tbody>
</table>
## Explanation of number codes for ODU MINI-CARD®, Series 515

<table>
<thead>
<tr>
<th>No.</th>
<th>Meaning</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Series</td>
<td>515 = Pin header</td>
</tr>
<tr>
<td>B</td>
<td>Type</td>
<td></td>
</tr>
<tr>
<td>023</td>
<td>THT model</td>
<td></td>
</tr>
<tr>
<td>025</td>
<td>SMT model</td>
<td></td>
</tr>
<tr>
<td>026</td>
<td>SMT model</td>
<td></td>
</tr>
<tr>
<td>027</td>
<td>SMT model</td>
<td></td>
</tr>
<tr>
<td>028</td>
<td>SMT model</td>
<td></td>
</tr>
<tr>
<td>029</td>
<td>THT model</td>
<td></td>
</tr>
<tr>
<td>031</td>
<td>SMT model</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Surface plating</td>
<td>035 = in mating area 0.75 μm Au on Ni, in termination area 2.0 μm Sn on Ni</td>
</tr>
<tr>
<td>D</td>
<td>Number of contacts</td>
<td>012 = 12 contacts (example)</td>
</tr>
<tr>
<td>E</td>
<td>Packaging</td>
<td>002 = Tube</td>
</tr>
<tr>
<td></td>
<td></td>
<td>050 = Tape-and-reel</td>
</tr>
</tbody>
</table>

### Ordering example for Series 515

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A = Series: 515 pin header  
B = Type: SMT model  
C = Surface: in mating area 0.75 μm Au on Ni  
D = Number of contacts: 12  
E = Packaging: Tube
ODU MINI-CARD® pin headers, Series 515

Technical data

Electrical specification
Contact resistance: \( \leq 6 \text{ m}\Omega \)
Test voltage: \( 500 \text{ V eff.} \)
Operating voltage: \( 30 \text{ V} \)
Nominal current: \( 0.5 \text{ A} \)
(single contact at 25 °C)
Isolationswiderstand \( \geq 1 \text{ G}\Omega \)

Mechanical specification
Operating temperature: PBT: -40 °C to +125 °C
LCP: -40 °C to +125 °C
SMT solder temperature at solder point max. 30 s:
LCP: 260 °C
Humidity level: 75 % rel. humidity in accordance with DIN EN 60721-3-3
Mating force per contact: < 0.18 N
Mating cycles: > 100

Material and surface plating
Contact surface
Mating area: 0.75 μm Au on 1.25 μm Ni
Termination area: 2.0 μm Sn on 1.25 μm Ni
Insulator material: THT:
PBT grey
GF acc. to UL 94 V-0
SMT:
LCP black
GF acc. to UL 94 V-0
Contact material: Cu alloy
ODU MINI-CARD® solder-in pin header
2-row, straight, in pitch 1.27 × 2.54 mm

Features
– Solder-in version for PCB assembly
– Most compact dimensions
– Packaging in tube

Technical data, see page 11.

Dimensional drawing (schematic)

Order information and dimensional table (All dimensions are in mm)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>Part number</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension C</th>
<th>Dimension D</th>
<th>PCB distance</th>
<th>Packaging unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>515.023.035.012.002</td>
<td>6.35</td>
<td>10.05</td>
<td>10.0</td>
<td>2.3</td>
<td>12.0 to 13.5 mm</td>
<td>40</td>
</tr>
<tr>
<td>30</td>
<td>515.029.035.030.002</td>
<td>17.78</td>
<td>21.48</td>
<td>7.0</td>
<td>3.0</td>
<td>9.0 to 10.5 mm</td>
<td>20</td>
</tr>
</tbody>
</table>

*) rounded in the solder area

Other numbers of contact upon request.

Number codes, see page 10.
ODU MINI-CARD® SMT pin header
2-row, straight, in pitch 1.27 × 2.54 mm

Features
- SMT pin header for board-to-board connection
- Vacuum adapter plate
- 2 moulded-on guiding pins
- Most compact dimensions
- Packaging in tube or tape-and-reel

Technical data, see page 11.

Dimensional drawing (schematic)

Order information and dimensional table (All dimensions are in mm)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>Part number</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension D</th>
<th>Dimension E</th>
<th>Packaging unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>515.025.035.012_</td>
<td>6.35</td>
<td>10.05</td>
<td>1.5</td>
<td>5.08</td>
<td>_ = 002 Tube</td>
</tr>
<tr>
<td>16</td>
<td>515.025.035.016_</td>
<td>8.89</td>
<td>12.59</td>
<td>1.0</td>
<td>7.62</td>
<td>_ = 050 Tape-and-reel</td>
</tr>
<tr>
<td>30</td>
<td>515.025.035.030_</td>
<td>17.78</td>
<td>21.48</td>
<td>1.0</td>
<td>16.51</td>
<td></td>
</tr>
</tbody>
</table>

Other numbers of contacts upon request.

Number codes, see page 10.

www.odu.de
ODU MINI-CARD® SMT pin header
2-row, straight, in pitch 1.27 × 2.54 mm

Features
- SMT pin header for board-to-board connection
- Vacuum adapter plate
- 2 moulded-on guiding pins
- Most compact dimensions
- Packaging in tube or tape-and-reel

Technical data, see page 11.

Dimensional drawing (schematic)

Order information and dimensional table (All dimensions are in mm)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>Part number</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension E</th>
<th>Packaging unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>S15.026.035.016.002</td>
<td>8.89</td>
<td>10.49</td>
<td>7.62</td>
<td>40</td>
</tr>
<tr>
<td>30</td>
<td>S15.026.035.030.050</td>
<td>17.78</td>
<td>19.38</td>
<td>16.51</td>
<td>250</td>
</tr>
</tbody>
</table>

Other numbers of contacts upon request.

Number codes, see page 10.
ODU MINI-CARD® SMT pin header
2-row, straight, in pitch 1.27 × 2.54 mm

Features
– SMT pin header for board-to-board connection
– Vacuum adapter plate
– 2 moulded-on guiding pins
– Most compact dimensions
– Packaging in tube or tape-and-reel

Technical data, see page 11.

Order information and dimensional table (All dimensions are in mm)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>Part number</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension E</th>
<th>Packaging unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>515.027.035.016._</td>
<td>8.89</td>
<td>10.49</td>
<td>7.62</td>
<td>_ = 002 Tube</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>_ = 050 Tape-and-reel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>170</td>
</tr>
</tbody>
</table>

Other numbers of contacts upon request.

Number codes, see page 10.
ODU MINI-CARD® SMT pin header
2-row, straight, in pitch 1.27 × 2.54 mm

Features
– SMT pin header for board-to-board connection
– Vacuum adapter plate
– 2 moulded-on guiding pins
– Most compact dimensions
– Packaging in tube or tape-and-reel

Technical data, see page 11.

Dimensional drawing (schematic)

Order information and dimensional table (All dimensions are in mm)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>Part number</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension E</th>
<th>Packaging unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>515.028.035.016._</td>
<td>8.89</td>
<td>10.49</td>
<td>7.62</td>
<td>_ = 002 Tube</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>_ = 050 Tape-and-reel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>350</td>
</tr>
</tbody>
</table>

Other numbers of contacts upon request.

Number codes, see page 10.
ODU MINI-CARD® SMT pin header
2-row, straight, in pitch 1.27 × 2.54 mm

Features
– SMT pin header for board-to-board connection
– Vacuum adapter plate
– 2 moulded-on guiding pins
– Most compact dimensions
– Packaging in tube or tape-and-reel
– Fully stackable without contact loss

Technical data, see page 11.

Dimensional drawing (schematic)

Order information and dimensional table (All dimensions are in mm)

<table>
<thead>
<tr>
<th>Number of contacts</th>
<th>Part number</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension E</th>
<th>Packaging unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>S15.031.035.030._</td>
<td>17.78</td>
<td>18.98</td>
<td>16.51</td>
<td>_ = 002 Tube</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>_ = 050 Tape-and-reel</td>
</tr>
<tr>
<td>40</td>
<td>S15.031.035.040._</td>
<td>24.13</td>
<td>25.33</td>
<td>22.86</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>50</td>
<td>S15.031.035.050._</td>
<td>30.48</td>
<td>31.68</td>
<td>29.21</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300</td>
</tr>
</tbody>
</table>

Other numbers of contacts upon request.

Number codes, see page 10.
You can find additional qualified representatives on our website: www.odu.de/sales