

# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



1815235

<https://www.phoenixcontact.com/us/products/1815235>

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PCB headers, nominal cross section:  $0.5 \text{ mm}^2$ , color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/..-HHI-SMD WH, pitch: 2.5 mm, pin layout: Linear pad geometry, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape

## Your advantages

- White design: Stable color when welding and during use
- Designed for integration into the SMT soldering process
- Supplied in tape-on-reel packing according to IEC 60286-3 for automated mounting
- Inverted header with socket contacts for touch-proof device outputs or PCB/PCB connections
- Additional solder anchors reduce the mechanical strain on the soldering spots

# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



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## Commercial Data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 1815235             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 500 pc              |
| Sales Key                            | A03                 |
| Product Key                          | AAAUSA              |
| Catalog Page                         | Page 399 (C-1-2013) |
| GTIN                                 | 4046356761444       |
| Weight per Piece (including packing) | 2.53 g              |
| Weight per Piece (excluding packing) | 2.53 g              |
| Customs tariff number                | 85366930            |
| Country of origin                    | IN                  |

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## Technical Data

### Product properties

|                       |                        |
|-----------------------|------------------------|
| Product line          | COMBICON Connectors XS |
| Product type          | PCB headers            |
| Number of positions   | 6                      |
| Pitch                 | 2.5 mm                 |
| Number of connections | 6                      |
| Number of rows        | 1                      |
| Mounting flange       | without                |
| Number of potentials  | 6                      |
| Pin layout            | Linear pad geometry    |

### Electrical properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 6 A    |
| Nominal voltage $U_N$       | 160 V  |
| Pollution degree            | 3      |
| Contact resistance          | 4.2 mΩ |
| Rated voltage (III/3)       | 160 V  |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated voltage (III/2)       | 160 V  |
| Rated surge voltage (III/2) | 2.5 kV |

### Mounting

|                             |               |
|-----------------------------|---------------|
| Mounting type SMD soldering | SMD soldering |
| Mounting type               | SMD soldering |

### Processing notes

|                                  |                  |
|----------------------------------|------------------|
| Process                          | Reflow soldering |
| Moisture Sensitive Level         | MSL 1            |
| Classification temperature $T_c$ | 260 °C           |
| Solder cycles in the reflow      | 3                |

### Material specifications

#### Material data - contact

|   |  |
|---|--|
| Note  | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material                            | Cu alloy   |
| Surface characteristics                     | Tin-plated   |
| Metal surface contact area (top layer)      | Tin (3 - 8 μm Sn)  |
| Metal surface contact area (middle layer)   | Nickel (1.3 - 3 μm Ni)   |
| Metal surface soldering area (top layer)    | Tin (3 - 8 μm Sn)  |
| Metal surface soldering area (middle layer) | Nickel (1.3 - 3 μm Ni)   |

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## Material data - housing

|  |                     |
|--|---------------------|
| Housing color                          | signal white (9003) |
| Insulating material                    | PA                  |
| Insulating material group              | I                   |
| CTI according to IEC 60112             | 600                 |
| Flammability rating according to UL 94 | V0                  |

## Dimensions

|                     |         |
|---------------------|---------|
| Dimensional drawing |         |
| Pitch               | 2.5 mm  |
| Width [w]           | 19.8 mm |
| Height [h]          | 5 mm    |
| Length [l]          | 14 mm   |
| Installed height    | 5 mm    |

## PCB design

|              |              |
|--------------|--------------|
| Pad geometry | 1.2 x 3.2 mm |
|--------------|--------------|

## Mechanical tests

### Test for conductor damage and slackening

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

### Repeated connection and disconnection

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

### Pull-out test

|   |  |
|---|--|
| Specification   | IEC 60999-1:1999-11                      |
| Conductor cross section/conductor type/tractive force setpoint/actual value | 0.14 mm <sup>2</sup> / solid / > 10 N    |
|   | 0.2 mm <sup>2</sup> / flexible / > 10 N  |
|   | 0.5 mm <sup>2</sup> / solid / > 20 N     |
|   | 0.5 mm <sup>2</sup> / flexible / > 20 N  |
|   | 0.75 mm <sup>2</sup> / flexible / > 30 N |

### Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 10          |
| Insertion strength per pos. approx. | 3 N         |
| Withdraw strength per pos. approx.  | 2 N         |

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## Contact holder in insert

|  |                        |
|--|------------------------|
| Specification                                  | IEC 60512-15-1:2008-05 |
| Contact holder in insert<br>Requirements >20 N | Test passed            |

## Resistance of inscriptions

|               |                        |
|---------------|------------------------|
| Specification | IEC 60068-2-70:1995-12 |
| Result        | Test passed            |

## Polarization and coding

|               |                        |
|---------------|------------------------|
| Specification | IEC 60512-13-5:2006-02 |
| Result        | Test passed            |

## Visual inspection

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60512-1-1:2002-02 |
| Result        | Test passed           |

## Dimension check

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60512-1-2:2002-02 |
| Result        | Test passed           |

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-1:2002-02 |
| Tested number of positions | 8                     |

### Insulation resistance

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-3-1:2002-02 |
| Insulation resistance, neighboring positions | > 5 MΩ                |

### Temperature cycles

|               |                     |
|---------------|---------------------|
| Specification | IEC 60999-1:1999-11 |
| Result        | Test passed         |

### Air clearances and creepage distances |

|  |                     |
|--|---------------------|
| Specification  | IEC 60664-1:2007-04 |
| Insulating material group                              | I                   |
| Comparative tracking index (IEC 60112)                 | CTI 600             |
| Rated insulation voltage (III/3)                       | 160 V               |
| Rated surge voltage (III/3)                            | 2.5 kV              |
| minimum clearance value - non-homogenous field (III/3) | 1.5 mm              |
| minimum creepage distance (III/3)                      | 2 mm                |
| Rated insulation voltage (III/2)                       | 160 V               |
| Rated surge voltage (III/2)                            | 2.5 kV              |
| minimum clearance value - non-homogenous field (III/2) | 1.5 mm              |
| minimum creepage distance (III/2)                      | 1.5 mm              |
| Rated insulation voltage (II/2)                        | 320 V               |

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|   |        |
|---|--------|
| Rated surge voltage (II/2)                            | 2.5 kV |
| minimum clearance value - non-homogenous field (II/2) | 1.5 mm |
| minimum creepage distance (II/2)                      | 1.6 mm |

## Environmental and real-life conditions

### Vibration test

|                        |                        |
|------------------------|------------------------|
| Specification          | IEC 60068-2-6:2007-12  |
| Frequency              | 10 - 150 - 10 Hz       |
| Sweep speed            | 1 octave/min           |
| Amplitude              | 0.35 mm (10 - 60.1 Hz) |
| Sweep speed            | 5g (60.1 - 150 Hz)     |
| Test duration per axis | 2.5 h                  |

### Durability test

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 2.95 kV               |
| Contact resistance $R_1$                     | 4.2 m $\Omega$        |
| Contact resistance $R_2$                     | 4.3 m $\Omega$        |
| Insertion/withdrawal cycles                  | 10                    |
| Insulation resistance, neighboring positions | > 5 M $\Omega$        |

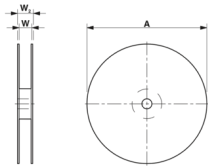
### Climatic test

|                                   |   |
|-----------------------------------|---|
| Specification                     | ISO 6988:1985-02  |
| Corrosive stress                  | 0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle |
| Thermal stress                    | 100 °C/168 h  |
| Power-frequency withstand voltage | 1.39 kV   |

### Ambient conditions

|   |   |
|---|---|
| Ambient temperature (operation)         | -40 °C ... 100 °C (dependent on the derating curve) |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C                                    |
| Relative humidity (storage/transport)   | 30 % ... 70 %                                       |
| Ambient temperature (assembly)          | -5 °C ... 100 °C                                    |

## Packaging specifications

|                             |  |
|-----------------------------|--|
| Dimensional drawing         |  |
| Type of packaging           | 44 mm wide tape  |
| [W] tape width              | 44 mm  |
| [W2] coil overall dimension | 50.4 mm  |
| [A] coil diameter           | 330 mm   |
| Outer packaging type        | Transparent-Bag  |

# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



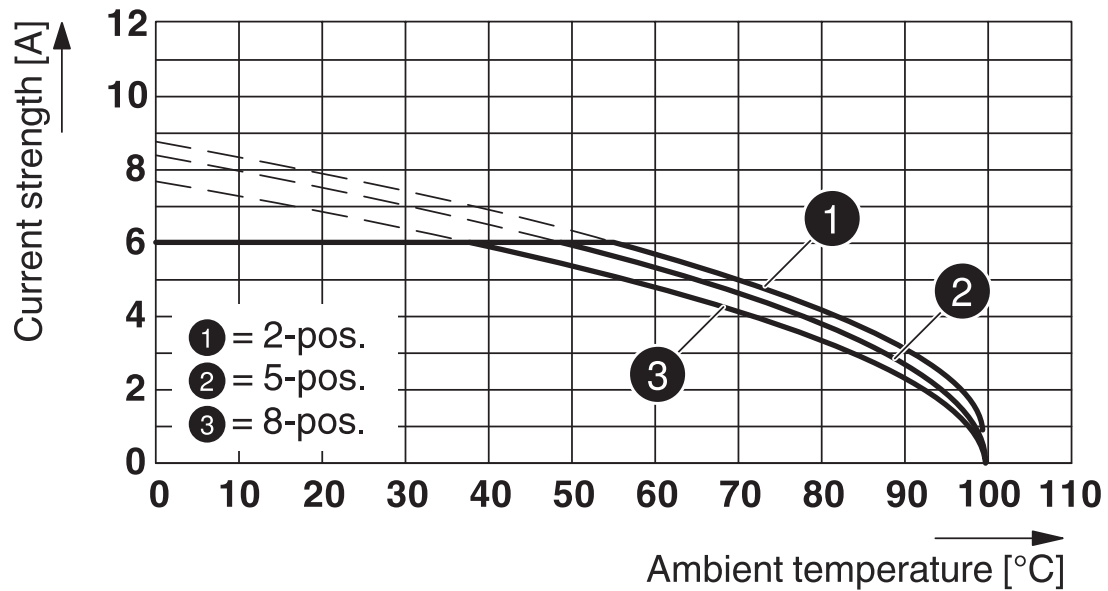
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|               |  |
|---------------|--|
| ESD level     | (D) electrostatically conductive         |
| Specification | DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07 |

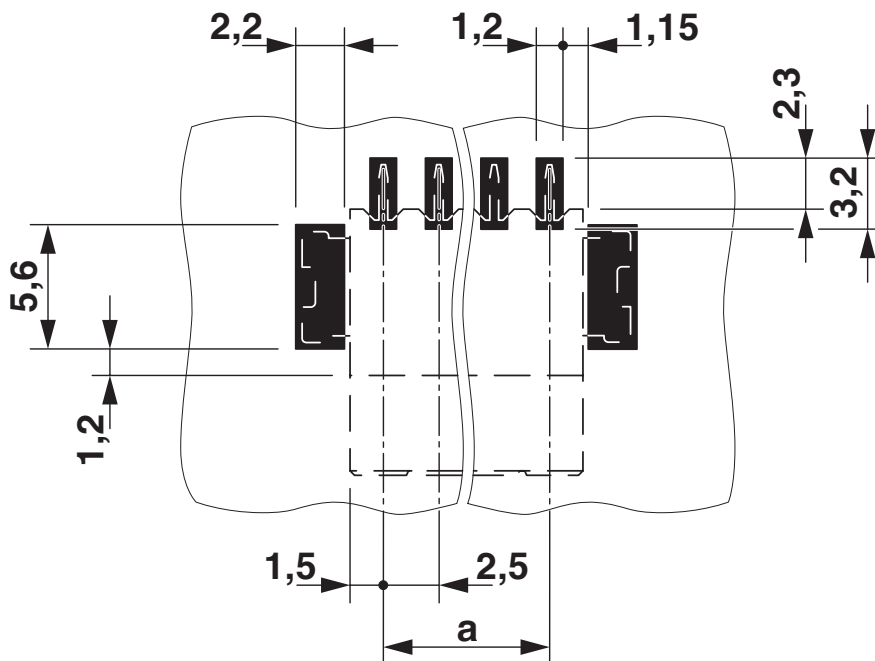
Drawings

Diagram



Type: PTSM 0,5/...-PI-2,5 WH with PTSM 0,5/...-HHI0-2,5-SMD WHR...

Drilling plan/solder pad geometry



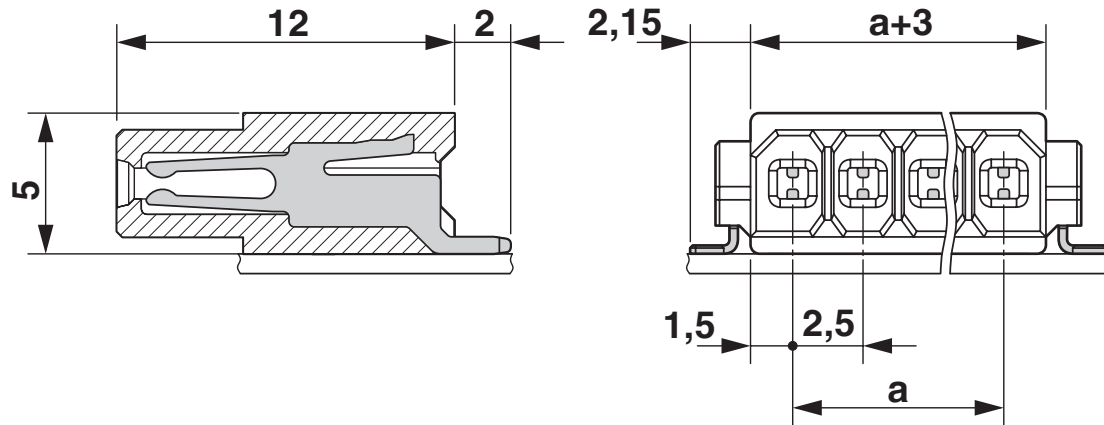
# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



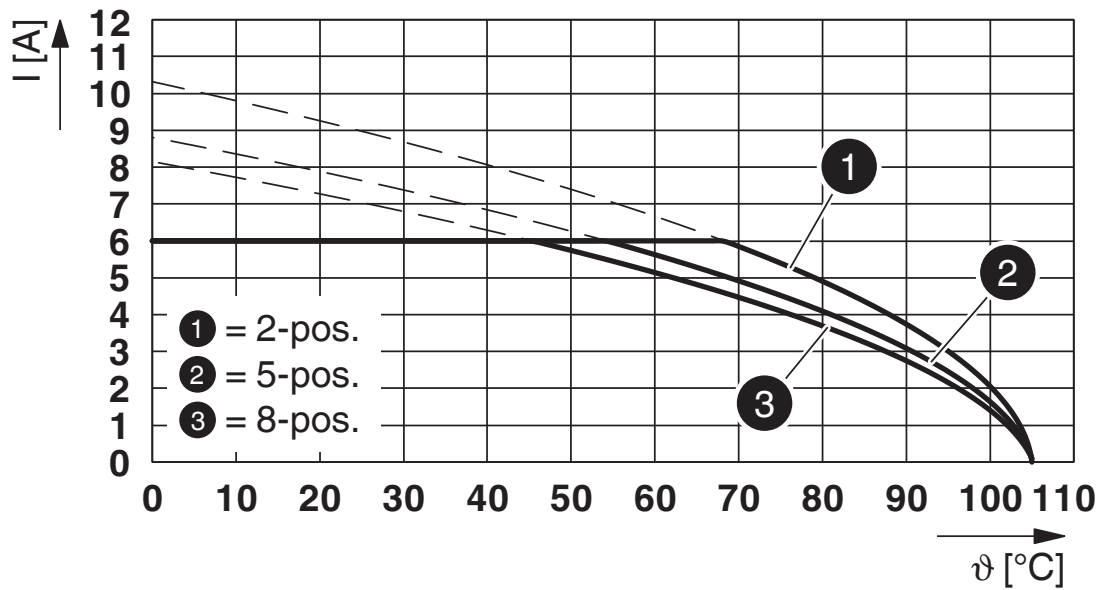
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Dimensional drawing



Diagram



Type: PTCM 0,5/...-PI-2,5 WH with PTSM 0,5/...-HHI0-2,5-SMD WHR...


# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44




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## Approvals

|  <b>UL Recognized</b><br>Approval ID: E118976-20130619 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $\text{mm}^2$ |
| Use group B   |                       |                       |                   |                             |
|   | 150 V                 | 5 A                   | -                 | -                           |

|  <b>EAC</b><br>Approval ID: B.01687 |  |  |  |  |
|--|--|--|--|--|
|--|--|--|--|--|

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40048497 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $\text{mm}^2$ |
|  | 160 V                 | 6 A                   | -                 | 0.14 - 0.5                  |

# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



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## Classifications

### ECLASS

|               |          |
|---------------|----------|
| ECLASS-9.0    | 27440402 |
| ECLASS-10.0.1 | 27440402 |
| ECLASS-11.0   | 27460201 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC002637 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



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## Environmental Product Compliance

|            |   |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
|            | No hazardous substances above threshold values          |

# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



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## Accessories

### PCB header

PCB header - SAMPLEPTSM 0,5/ 6-HHI0-2,5SMDWH - 1820822

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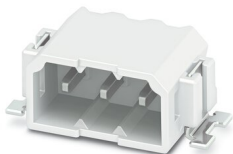


PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/...-HHI-SMD WH, pitch: 2.5 mm, pin layout: Linear pad geometry, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

### PCB header

PCB header - PTSM 0,5/ 6-HH0-2,5-SMD WH R44 - 1814951

<https://www.phoenixcontact.com/us/products/1814951>



PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/...-HH-SMD WH, pitch: 2.5 mm, pin layout: Linear pad geometry, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape

# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



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## PCB header

PCB header - PTSM 0,5/ 6-HV-2,5-SMD WH R44 - 1778735

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PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/..-HV-SMD WH, pitch: 2.5 mm, pin layout: Linear pad geometry, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape, Article with anti-rotation pin

## PCB header

PCB header - PTSM 0,5/ 6-HV0-2,5-SMD WH R44 - 1839237

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PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/..-HV-SMD WH, pitch: 2.5 mm, pin layout: Linear pad geometry, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

# PCB header - PTSM 0,5/ 6-HH10-2,5-SMD WHR44



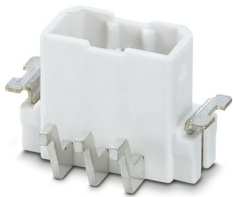
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<https://www.phoenixcontact.com/us/products/1815235>

## PCB header

PCB header - PTSM 0,5/ 6-HTB-2,5-SMD WH R44 - 1830168

<https://www.phoenixcontact.com/us/products/1830168>

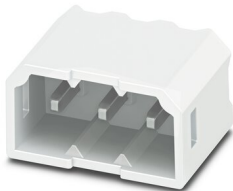


PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/..-HTB-SMD WH, pitch: 2.5 mm, pin layout: Linear pad geometry, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape

## PCB header

PCB header - PTSM 0,5/ 6-HH-2,5-THR WH R32 - 1814883

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PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/..-HH-THR WH, pitch: 2.5 mm, pin layout: Linear pinning, solder pin [P]: 2.1 mm, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 32 mm wide tape

# PCB header - PTSM 0,5/ 6-HHI0-2,5-SMD WHR44



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## PCB header

PCB header - PTSM 0,5/ 6-HV-2,5-THR WH R32 - 1815303

<https://www.phoenixcontact.com/us/products/1815303>



PCB headers, nominal cross section:  $0.5 \text{ mm}^2$ , color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/...-HV-THR WH, pitch: 2.5 mm, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 32 mm wide tape

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## Printed-circuit board connector

Printed-circuit board connector - PTSM 0,5/ 6-PI-2,5 WH - 1709454

<https://www.phoenixcontact.com/us/products/1709454>



PCB connector, nominal cross section:  $0.5 \text{ mm}^2$ , color: white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/...-PI WH, pitch: 2.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction:  $0^\circ$ , plug-in system: COMBICON PTSM, locking: without, mounting: without, type of packaging: packed in cardboard

# PCB header - PTSM 0,5/ 6-HH10-2,5-SMD WHR44



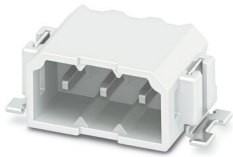
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## PCB header

PCB header - PTSM 0,5/ 6-HH-2,5-SMD WH R44 - 1708015

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PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: signal white, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/...-HH-SMD WH, pitch: 2.5 mm, pin layout: Linear pad geometry, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON PTSM, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard, Article with anti-rotation pin

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