

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



1778735

<https://www.phoenixcontact.com/de/produkte/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, mounting: SMD soldering, 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: 44 mm wide tape, Article with anti-rotation pin

## 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
- Additional solder anchors reduce the mechanical strain on the soldering spots
- Vertical connection enables multi-row arrangement on the PCB

## Commercial Data

|                                      |                           |
|--------------------------------------|---------------------------|
| Item number                          | 1778735                   |
| Packing unit                         | 400 pc                    |
| Minimum order quantity               | 400 pc                    |
| Sales Key                            | E1 - Leiterplattenanschl. |
| Product Key                          | AAAUPD                    |
| Catalog Page                         | Page 23 (NTK-2014)        |
| GTIN                                 | 4046356529914             |
| Weight per Piece (including packing) | 2,149 g                   |
| Weight per Piece (excluding packing) | 2,149 g                   |
| Customs tariff number                | 85366930                  |
| Country of origin                    | IN                        |

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## Technical Data

### Product properties

|                           |                        |
|---------------------------|------------------------|
| Type                      | Standard               |
| Product line              | COMBICON Connectors XS |
| Product type              | PCB headers            |
| Product family            | PTSM 0,5/..-HV-SMD WH  |
| 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 pinning         |
| Solder pins per potential | 1                      |

### Electrical properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 6 A    |
| Nominal voltage $U_N$       | 160 V  |
| Degree of pollution         | 3      |
| Contact resistance          | 2.2 mΩ |
| Rated voltage (III/3)       | 125 V  |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated voltage (III/2)       | 160 V  |
| Rated surge voltage (III/2) | 2.5 kV |
|                             | 320 V  |
| Rated surge voltage (II/2)  | 2.5 kV |

### Mounting

|               |                |
|---------------|----------------|
| Mounting type | SMD soldering  |
| Pin layout    | Linear pinning |

### 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   |

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|   |                        |
|---|------------------------|
| Metal surface contact area (top layer)      | Tin (3 - 5 µm Sn)      |
| Metal surface contact area (middle layer)   | Nickel (1.3 - 3 µm Ni) |
| Metal surface soldering area (top layer)    | Tin (3 - 5 µm Sn)      |
| Metal surface soldering area (middle layer) | Nickel (1.3 - 3 µm Ni) |

## Material data - housing

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

## Material data – actuating element

|           |     |
|-----------|-----|
| Color ( ) | ( ) |
|-----------|-----|

## Dimensions

|                       |         |
|-----------------------|---------|
| Dimensional drawing   |         |
| Pitch                 | 2.5 mm  |
| Width [w]             | 20.6 mm |
| Height [h]            | 9.5 mm  |
| Length [l]            | 5 mm    |
| Installed height      | 7.5 mm  |
| Solder pin length [P] | 2 mm    |

## PCB design

|              |              |
|--------------|--------------|
| Pad geometry | 1.2 x 4.4 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    |

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|   |  |
|---|--|
|   | 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.         | 5 N                                      |
| Withdraw strength per pos. approx.          | 3 N                                      |
| Contact holder in insert                    |  |
| Specification                               | IEC 60512-15-1:2008-05                   |
| Contact holder in insert 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)             | 125 V                 |
| Rated surge voltage (III/3)                  | 2.5 kV                |

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|  |        |
|--|--------|
| minimum clearance value - non-homogenous field (III/3) | 1.5 mm |
| minimum creepage distance (III/3)                      | 1.9 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  |
| 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 Hz ... 60.1 Hz) |
| Sweep speed            | 5g (60.1 Hz ... 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 <sub>1</sub>            | 2.2 mΩ                |
| Contact resistance R <sub>2</sub>            | 2.4 mΩ                |
| Insertion/withdrawal cycles                  | 10                    |
| Insulation resistance, neighboring positions | > 5 MΩ                |

#### 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                                    |

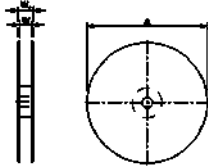
### Packaging specifications

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



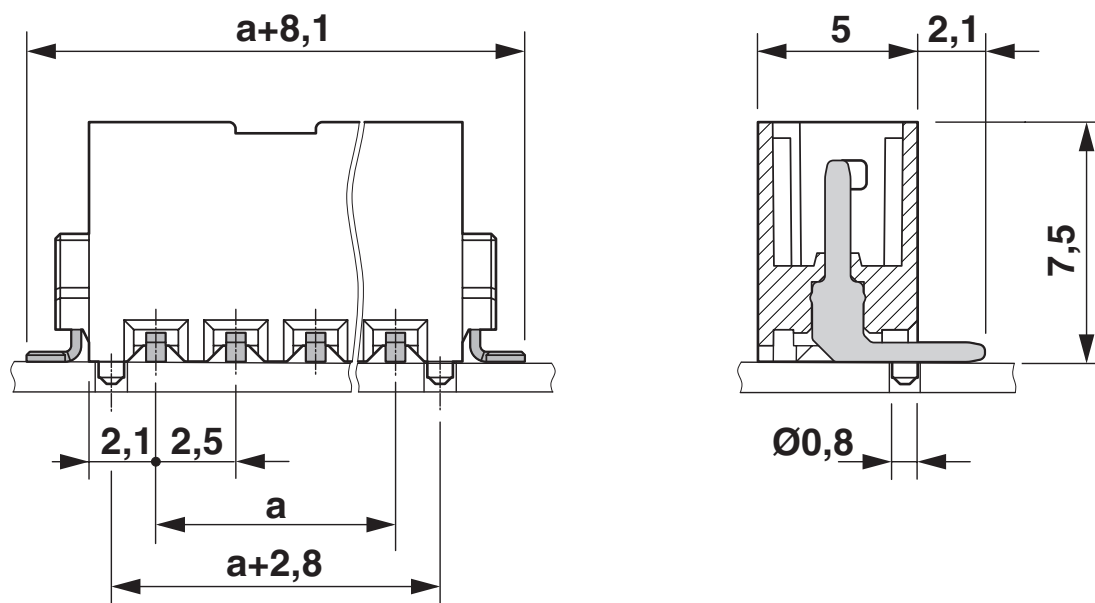
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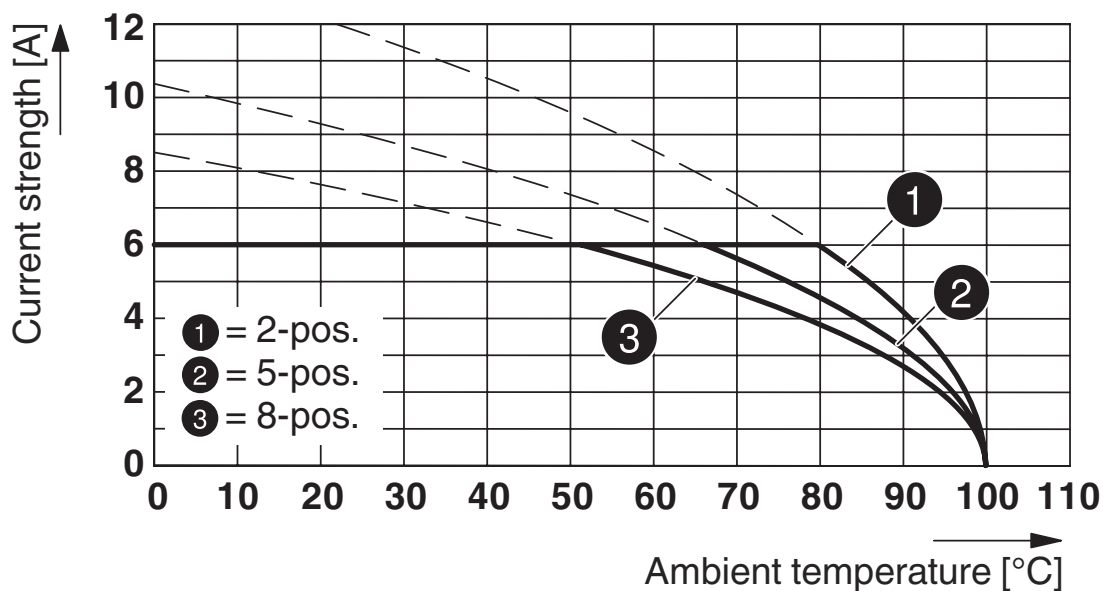
|                             |  |
|-----------------------------|--|
| Dimensional drawing         |  |
| Type of packaging           | 44 mm wide tape  |
| [W] tape width              | 44 mm  |
| [W2] coil overall dimension | 50.4 mm  |
| [A] coil diameter           | 330 mm   |
| Outer packaging type        | Transparent-Bag  |
| ESD level                   | (D) electrostatically conductive   |
| Specification               | DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07   |

Drawings

Dimensional drawing



Diagram



Type: PTSM 0,5/...-P-2,5 WH... with PTSM 0,5/...-HV-2,5-SMD WH R...


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





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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>cULus Recognized</b><br>Approval ID: E60425-20110108 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $\text{mm}^2$ |
| Use group B   |                       |                       |                   |                             |
|   | 150 V                 | 6 A                   | -                 | -                           |

|  <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                  |

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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 |
|-------------|----------|

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



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## Environmental Product Compliance

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

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



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## Accessories

### SAMPLE PTSM 0,5/ 6-HV...SMD WH - PCB header

1847106

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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: 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, mounting: SMD soldering, 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: packed in cardboard, Article with anti-rotation pin

### PTSM 0,5/ 6-P-2,5 WH - PCB connector

1704859

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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: Female connector, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: PTSM 0,5/..-P 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

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



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

1707998

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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, mounting: SMD soldering, 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

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

1815235

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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, mounting: SMD soldering, pin layout: Linear pinning, 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

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



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## PTSM 0,5/ 6-HHI-2,5-THR WH R32 - PCB header

1815028

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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-THR WH, pitch: 2.5 mm, mounting: THR soldering, 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

## PTSM 0,5/ 6-PL-2,5 WH - Printed-circuit board connector

1709463

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PCB connector, nominal cross section: 0.5 mm<sup>2</sup>, color: 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/...-PL WH, pitch: 2.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON PTSM, locking: Snap-in locking, mounting: Self-locking flange, type of packaging: packed in cardboard

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