

# PTSM 0,5/ 4-HHI-2,5-SMD WHR44 - PCB header



1707993

<https://www.phoenixcontact.com/us/products/1707993>

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The figure shows a 3-position version

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: Sn, contact connection type: Socket, number of potentials: 4, number of rows: 1, number of positions: 4, number of connections: 4, product range: PTSM 0,5/..-HHI-SMD WH, pitch: 2.5 mm, mounting: SMD soldering, 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 method: 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
- 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

## Commercial data

Item number	1707993
Packing unit	500 pc
Minimum order quantity	500 pc
Note	Made to order (non-returnable)
Sales key	AA01
Product key	AAAUSA
GTIN	4046356959162
Weight per piece (including packing)	2.207 g
Weight per piece (excluding packing)	2.122 g
Customs tariff number	85366930
Country of origin	IN

1707993

<https://www.phoenixcontact.com/us/products/1707993>

## Technical data

### Product properties

Product type	PCB headers
Product family	PTSM 0,5/...-HHI-SMD WH
Product line	COMBICON Connectors XS
Number of positions	4
Pitch	2.5 mm
Number of connections	4
Number of rows	1
Number of potentials	4
Mounting type	without
Pin layout	Linear pad geometry
Solder pins per potential	1

### Electrical properties

#### Properties

Nominal current $I_N$	6 A
Nominal voltage $U_N$	160 V
Contact resistance	4.2 m $\Omega$
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
Rated voltage (II/2)	320 V
Rated surge voltage (II/2)	2.5 kV

### Mounting

Mounting type	SMD soldering
Pin layout	Linear pad geometry

#### 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

# PTSM 0,5/ 4-HHI-2,5-SMD WHR44 - PCB header



1707993

<https://www.phoenixcontact.com/us/products/1707993>

Metal surface contact area (top layer)	Tin (3 µm - 8 µm Sn)
Metal surface contact area (middle layer)	Nickel (1.3 µm - 3 µm Ni)
Metal surface soldering area (top layer)	Tin (3 µm - 8 µm Sn)
Metal surface soldering area (middle layer)	Nickel (1.3 µm - 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

## Dimensions

Dimensional drawing	
Pitch	2.5 mm
Width [w]	14.8 mm
Height [h]	5 mm
Length [l]	14 mm

## PCB design

Pad geometry	1.2 x 3.2 mm
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## Mechanical tests

### Visual inspection

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

### Dimension check

Specification	IEC 60512-1-2:2002-02
Result	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

### Contact holder in insert

Specification	IEC 60512-15-1:2008-05
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1707993

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Contact holder in insert Requirements >20 N	Test passed
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## Insertion and withdrawal forces

Specification	IEC 60512-13-2:2006-02
Result	Test passed
No. of cycles	10
Insertion strength per pos. approx.	3 N
Withdraw strength per pos. approx.	2 N

## 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

## 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
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

## Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance R <sub>1</sub>	4.2 mΩ
Contact resistance R <sub>2</sub>	4.3 mΩ
Insertion/withdrawal cycles	10
Insulation resistance, neighboring positions	> 5 MΩ

1707993

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## 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

## 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)
Acceleration	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis

## Ambient conditions

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

## Packaging specifications

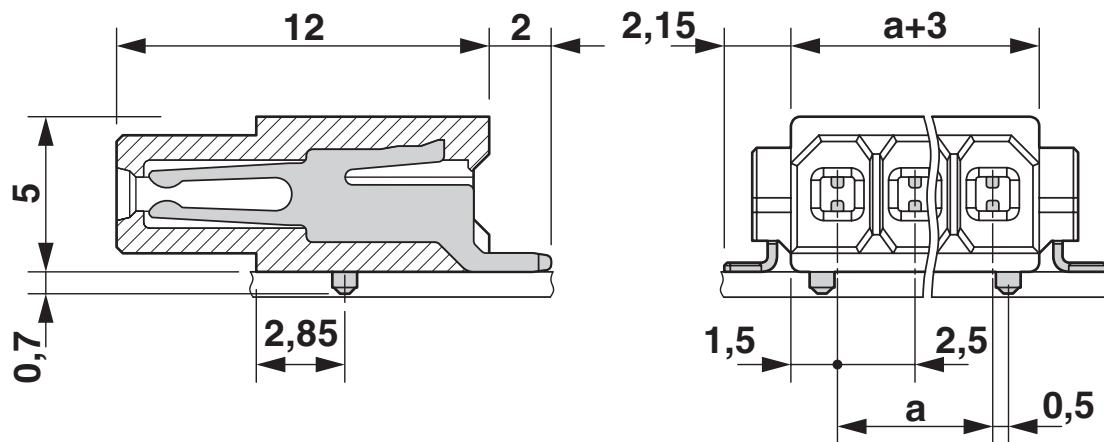
Dimensional drawing	
Type of packaging	44 mm wide tape
[W] tape width	44 mm
[W2] coil overall dimension	≤ 50.4 mm
[A] coil diameter	≤ 330 mm
Outer packaging type	Transparent-Bag

1707993

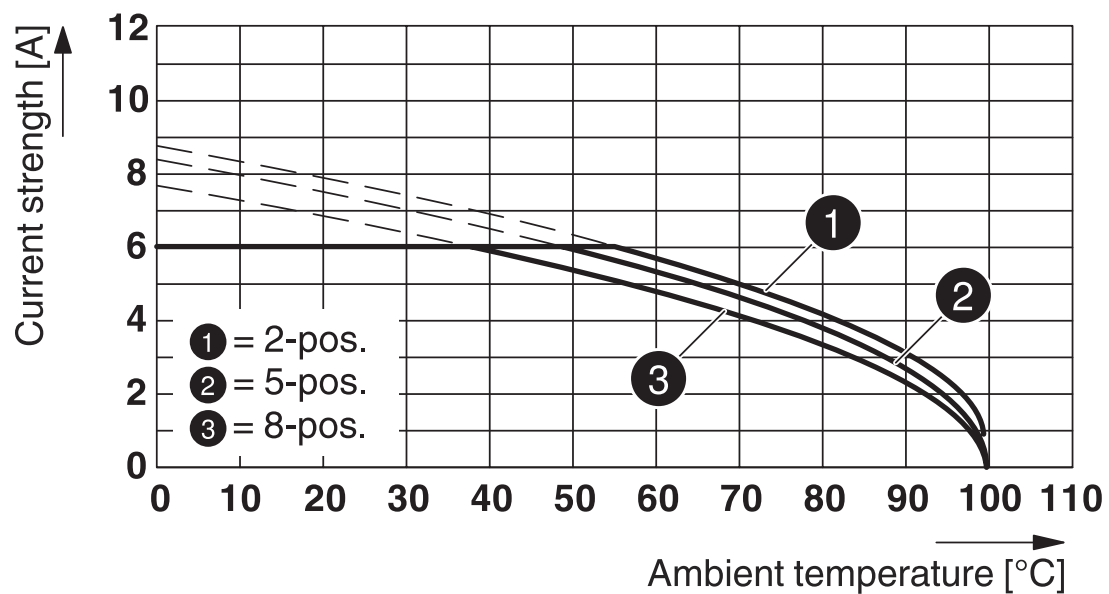
<https://www.phoenixcontact.com/us/products/1707993>

Drawings

Dimensional drawing



Diagram

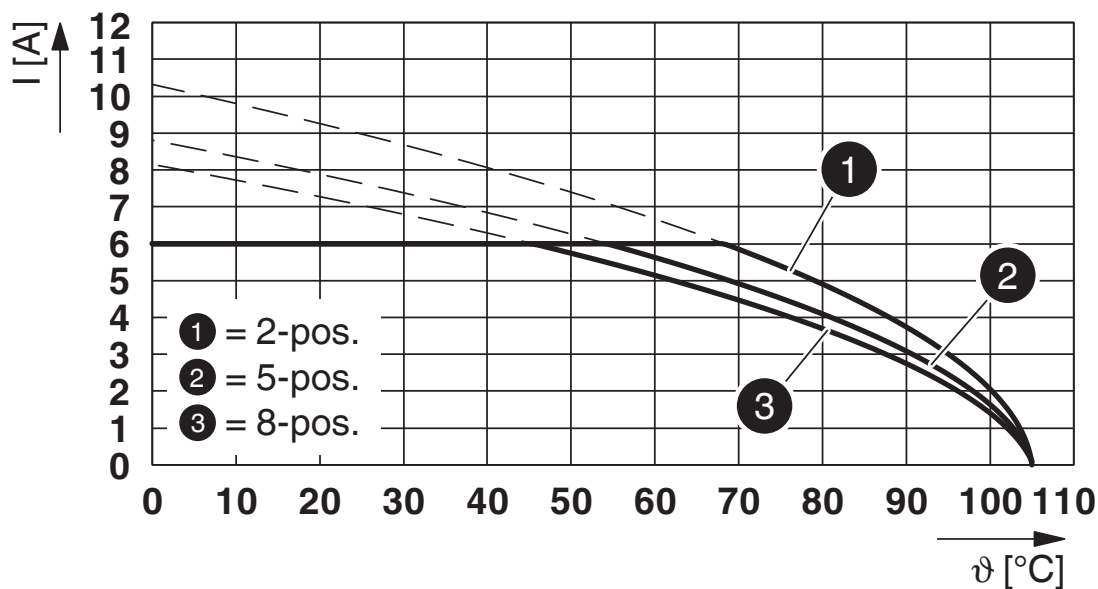


Type: PTSM 0,5/...-PI-2,5 WH with PTSM 0,5/...-HHI0-2,5-SMD WHR...

1707993

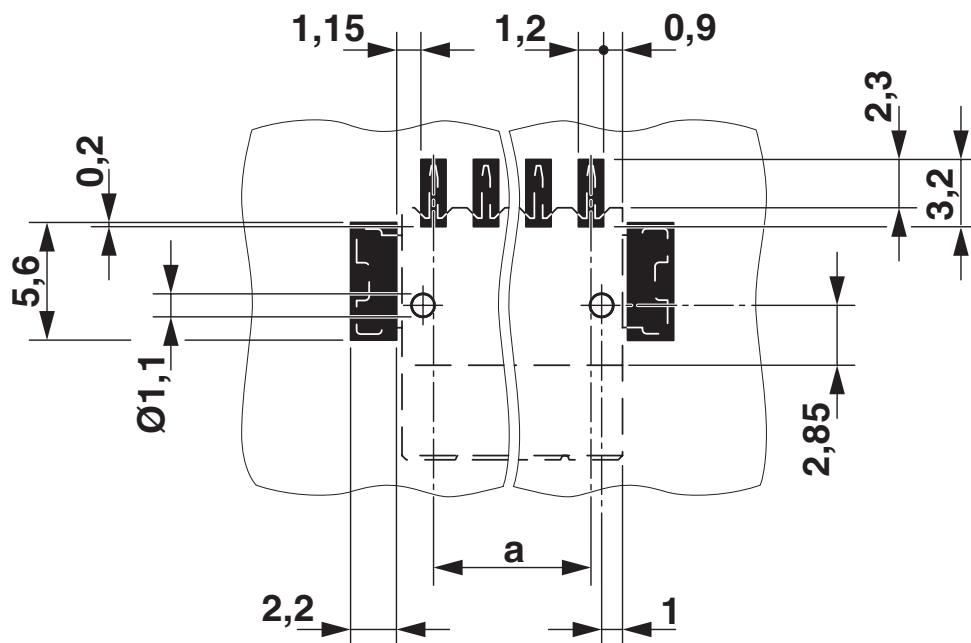
<https://www.phoenixcontact.com/us/products/1707993>

Diagram



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

Drilling plan/solder pad geometry



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## Approvals

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 <b>UL Recognized</b> Approval ID: E118976-20130619				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B				
	150 V	5 A	-	-

 <b>cULus Recognized</b> Approval ID: E60425-20110108				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B				
	150 V	6 A	-	-

 <b>VDE Zeichengenehmigung</b> Approval ID: 40048497				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine				
	160 V	6 A	-	-

1707993

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## Classifications

### ECLASS

ECLASS-13.0	27460201
ECLASS-15.0	27460201

### ETIM

ETIM 10.0	EC002637
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### UNSPSC

UNSPSC 21.0	39121400
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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