

1808200

<https://www.phoenixcontact.com/us/products/1808200>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Pin, number of potentials: 3, number of rows: 1, number of positions: 3, number of connections: 3, product range: PTSM 0,5/..-HH-SMD, 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: 32 mm wide tape

Your advantages

- 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

Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1808200       |
| Packing unit                         | 600 pc        |
| Minimum order quantity               | 600 pc        |
| Sales key                            | AA01          |
| Product key                          | AAAUPB        |
| GTIN                                 | 4046356694469 |
| Weight per piece (including packing) | 1.35 g        |
| Weight per piece (excluding packing) | 1.326 g       |
| Customs tariff number                | 85366930      |
| Country of origin                    | IN            |

# PTSM 0,5/ 3-HH0-2,5-SMD R32 - PCB header



1808200

<https://www.phoenixcontact.com/us/products/1808200>

## Technical data

### Product properties

|                           |                        |
|---------------------------|------------------------|
| Product type              | PCB headers            |
| Product family            | PTSM 0,5/...-HH-SMD    |
| Product line              | COMBICON Connectors XS |
| Type                      | Standard               |
| Number of positions       | 3                      |
| Pitch                     | 2.5 mm                 |
| Number of connections     | 3                      |
| Number of rows            | 1                      |
| Number of potentials      | 3                      |
| 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          | 3.6 mΩ |
| Rated voltage (III/3)       | 50 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)        | 160 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                                                                         |

# PTSM 0,5/ 3-HH0-2,5-SMD R32 - PCB header



1808200

<https://www.phoenixcontact.com/us/products/1808200>

|                                             |                        |
|---------------------------------------------|------------------------|
| Surface characteristics                     | Tin-plated             |
| 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)                        | black (9005) |
| Insulating material                    | LCP          |
| Insulating material group              | IIIa         |
| CTI according to IEC 60112             | 175          |
| Flammability rating according to UL 94 | V0           |

## Dimensions

|                     |                                                                                     |
|---------------------|-------------------------------------------------------------------------------------|
| Dimensional drawing |  |
| Pitch               | 2.5 mm                                                                              |
| Width [w]           | 13.1 mm                                                                             |
| Height [h]          | 5 mm                                                                                |
| Length [l]          | 9.5 mm                                                                              |

## PCB design

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

## 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 |
|---------------|------------------------|

# PTSM 0,5/ 3-HH0-2,5-SMD R32 - PCB header



1808200

<https://www.phoenixcontact.com/us/products/1808200>

|                                                |             |
|------------------------------------------------|-------------|
| Contact holder in insert<br>Requirements >20 N | Test passed |
|------------------------------------------------|-------------|

## Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 25          |
| Insertion strength per pos. approx. | 4 N         |
| Withdraw strength per pos. approx.  | 4 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                              | IIIa                |
| Comparative tracking index (IEC 60112)                 | CTI 175             |
| Rated insulation voltage (III/3)                       | 50 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)                      | 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)                      | 1.6 mm              |
| Rated insulation voltage (II/2)                        | 160 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) |
| Acceleration           | 5g (60.1 Hz ... 150 Hz)     |
| Test duration per axis | 2.5 h                       |
| Test directions        | X-, Y- and Z-axis           |

# PTSM 0,5/ 3-HH0-2,5-SMD R32 - PCB header



1808200

<https://www.phoenixcontact.com/us/products/1808200>

## Durability test

|                                              |                       |
|----------------------------------------------|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Impulse withstand voltage at sea level       | 1.75 kV               |
| Contact resistance $R_1$                     | 3.6 m $\Omega$        |
| Contact resistance $R_2$                     | 3.8 m $\Omega$        |
| Insertion/withdrawal cycles                  | 25                    |
| 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 | 0.84 kV                                                                   |

## Ambient conditions

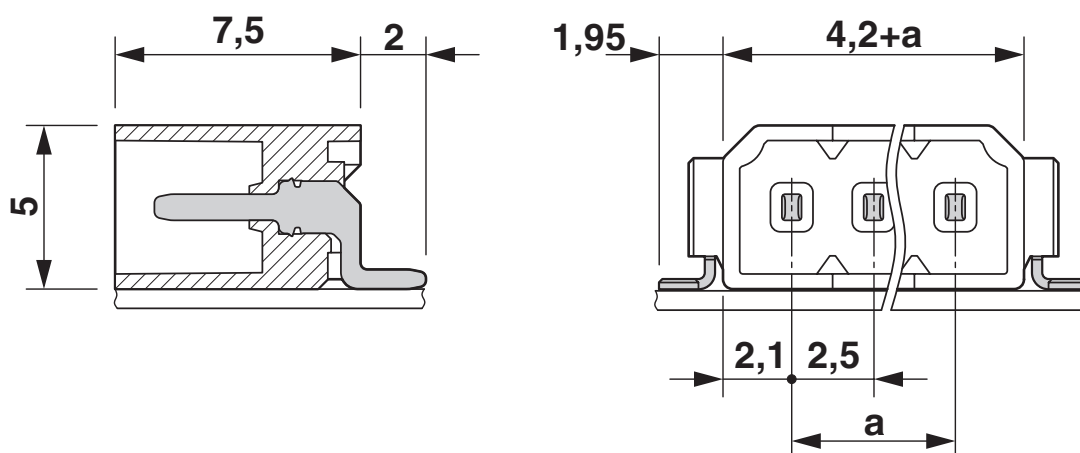
|                                         |                                                     |
|-----------------------------------------|-----------------------------------------------------|
| Ambient temperature (operation)         | -40 °C ... 100 °C (dependent on the derating curve) |
| Ambient 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           | 32 mm wide tape                                                                      |
| [W] tape width              | 32 mm                                                                                |
| [W2] coil overall dimension | ≤ 38.4 mm                                                                            |
| [A] coil diameter           | ≤ 330 mm                                                                             |
| Outer packaging type        | Transparent-Bag                                                                      |

## Drawings

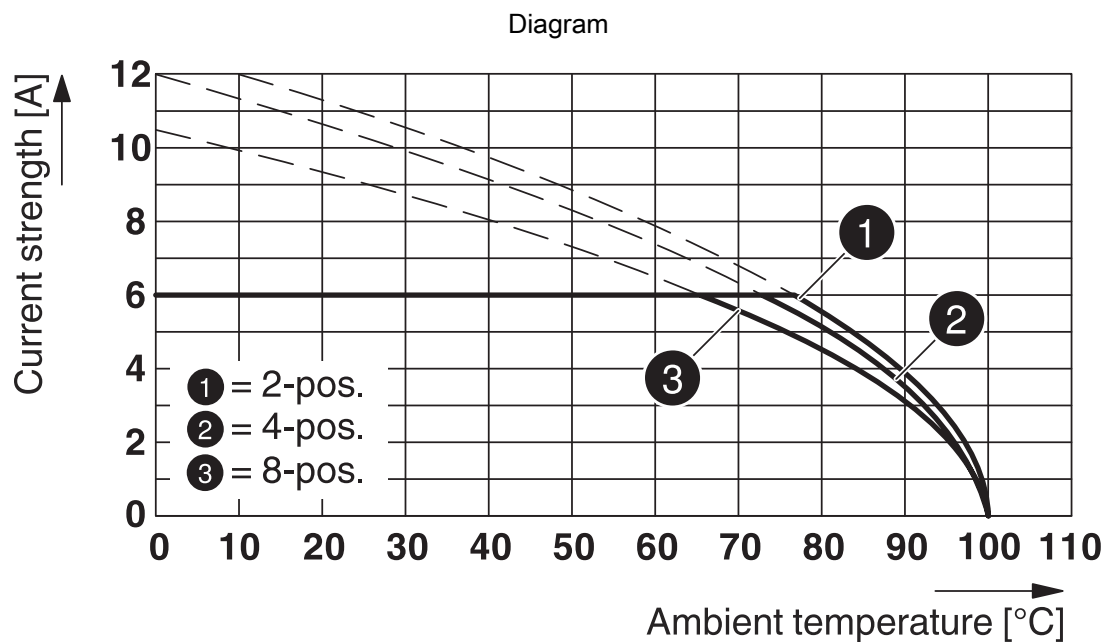
Dimensional drawing



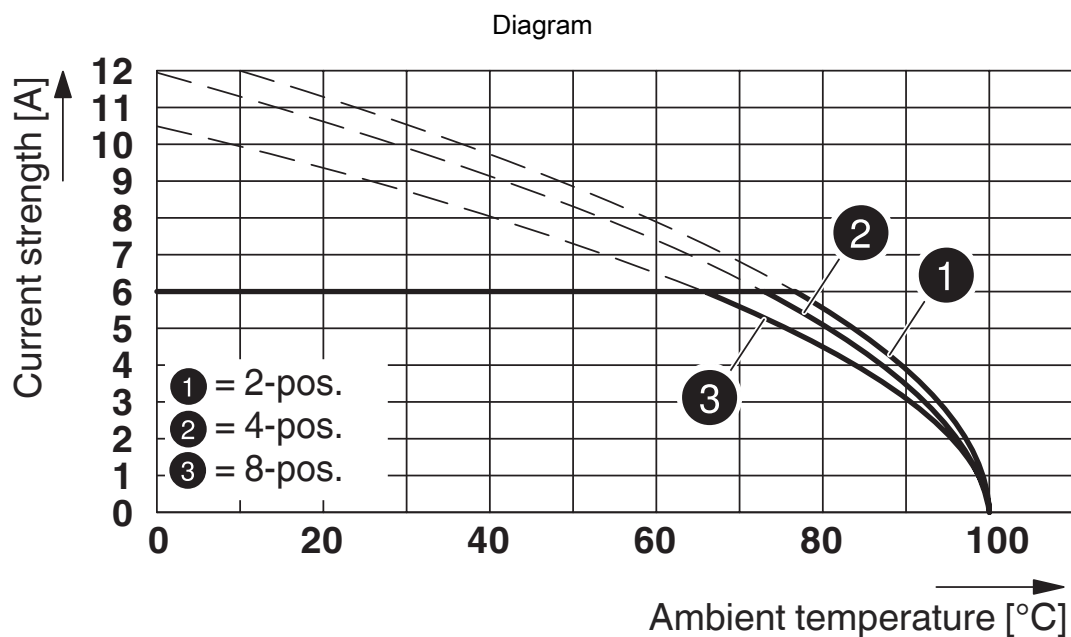
Diagram



Type: PTSM 0,5/...-HHI-2,5-SMD R... with PTSM 0,5/...-HH-2,5-SMD R...



Type: PTSM 0,5/...-PL-2,5 ... with PTSM 0,5/...-HH-2,5-SMD... R...



Derating curve for: PTSM 0,5/...-P-2,5 with PTSM 0,5/...-HH-2,5-SMD R..

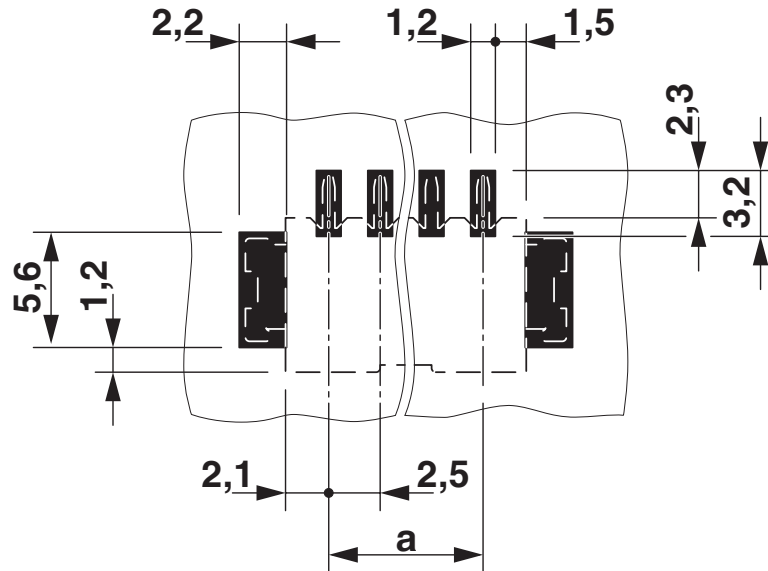
# PTSM 0,5/ 3-HH0-2,5-SMD R32 - PCB header

1808200

<https://www.phoenixcontact.com/us/products/1808200>



Drilling plan/solder pad geometry



# PTSM 0,5/ 3-HH0-2,5-SMD R32 - PCB header



1808200

<https://www.phoenixcontact.com/us/products/1808200>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1808200>

|  <b>UL Recognized</b><br>Approval ID: E118976-20130619 |                                |                                |                   |                               |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                         | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| B                                                                                                                                       |                                |                                |                   |                               |
|                                                                                                                                         | 150 V                          | 5 A                            | -                 | -                             |

|  <b>cULus Recognized</b><br>Approval ID: E60425-20110108 |                                |                                |                   |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                           | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| B                                                                                                                                         |                                |                                |                   |                               |
|                                                                                                                                           | 150 V                          | 6 A                            | -                 | -                             |

|  <b>VDE Zeichengenehmigung</b><br>Approval ID: 40048497 |                                |                                |                   |                               |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|-------------------|-------------------------------|
|                                                                                                                                            | Nominal voltage U <sub>N</sub> | Nominal current I <sub>N</sub> | Cross section AWG | Cross section mm <sup>2</sup> |
| keine                                                                                                                                      |                                |                                |                   |                               |
|                                                                                                                                            | 160 V                          | 6 A                            | -                 | -                             |

# PTSM 0,5/ 3-HH0-2,5-SMD R32 - PCB header



1808200

<https://www.phoenixcontact.com/us/products/1808200>

## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460201 |
| ECLASS-15.0 | 27460201 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002637 |
|----------|----------|

### UNSPSC

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

# PTSM 0,5/ 3-HH0-2,5-SMD R32 - PCB header



1808200

<https://www.phoenixcontact.com/us/products/1808200>

## Environmental product compliance

### EU RoHS

|                                         |                    |
|-----------------------------------------|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|-----------------------------------------|--------------------|

### 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% |
|-------------------------------------|----------------------------|

Phoenix Contact 2025 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)