

# PTSM 0,5/ 8-P-2,5 - Printed-circuit board connector



1778890

<https://www.phoenixcontact.com/pc/products/1778890>

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PCB connector, nominal cross section: 0.5 mm<sup>2</sup>, color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Socket, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: PTSM 0,5/..-P, pitch: 2.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON PTSM, locking: without, mounting: without, type of packaging: packed in cardboard

## Your advantages

- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- High current carrying capacity of 6 A in very compact dimensions

## Commercial Data

|                                      |                    |
|--------------------------------------|--------------------|
| Item number                          | 1778890            |
| Packing unit                         | 100 pc             |
| Minimum order quantity               | 1 pc               |
| Product Key                          | AAAFPB             |
| Catalog Page                         | Page 55 (C-1-2013) |
| GTIN                                 | 4046356530101      |
| Weight per Piece (including packing) | 2.179 g            |
| Weight per Piece (excluding packing) | 2.161 g            |
| Customs tariff number                | 85366990           |
| Country of origin                    | IN                 |

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## Technical Data

### Product properties

|                       |                        |
|-----------------------|------------------------|
| Type                  | Standard               |
| Product line          | COMBICON Connectors XS |
| Product type          | PCB connector          |
| Product family        | PTSM 0,5/...-P         |
| Number of positions   | 8                      |
| Pitch                 | 2.5 mm                 |
| Number of connections | 8                      |
| Number of rows        | 1                      |
| Mounting flange       | without                |
| Number of potentials  | 8                      |

### Electrical properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 6 A    |
| Nominal voltage $U_N$       | 160 V  |
| Degree of pollution         | 3      |
| Contact resistance          | 3 mΩ   |
| Rated voltage (III/3)       | 100 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 |

### Connection data

#### Connection technology

|                       |                     |
|-----------------------|---------------------|
| Type                  | Standard            |
| Connector system      | COMBICON PTSM       |
| Nominal cross section | 0.5 mm <sup>2</sup> |
| Type of contact       | Socket              |

#### Interlock

|                 |         |
|-----------------|---------|
| Locking type    | without |
| Mounting flange | without |

#### Conductor connection

|                                    |   |
|------------------------------------|---|
| Connection method                  | Push-in spring connection   |
| Conductor/PCB connection direction | 0 °   |
| Conductor cross section rigid      | 0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>  |
| Conductor cross section flexible   | 0.2 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> (up to 0.75 mm <sup>2</sup> supported, with a stripping length of 7.5 mm and a rated insulation voltage of 32 V at III/2) |
| Conductor cross section AWG        | 24 ... 20   |

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|   |  |
|---|--|
| Conductor cross section flexible, with ferrule without plastic sleeve | 0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>   |
| Conductor cross section, flexible, with ferrule, with plastic sleeve  | 0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup> (possible from 0.14 mm <sup>2</sup> , when using ferrule AI 0.14- 6 GY in combination with crimping pliers CRIMPFOX 10T-F) |
| Cylindrical gauge a x b / diameter                                    | - / 1.2 mm   |
| Stripping length  | 6 mm   |

## Material specifications

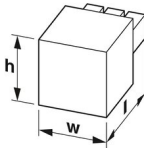
### Material data - contact

|  |  |
|--|--|
| Note                                     | WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201 |
| Contact material                         | Cu alloy   |
| Surface characteristics                  | hot-dip tin-plated   |
| Metal surface terminal point (top layer) | Tin (4 - 8 µm Sn)  |
| Metal surface contact area (top layer)   | Tin (4 - 8 µm Sn)  |

### Material data - housing

|   |              |
|---|--------------|
| Color (Housing)   | black (9005) |
| Insulating material   | PA           |
| Insulating material group   | I            |
| CTI according to IEC 60112  | 600          |
| Flammability rating according to UL 94                            | V0           |
| Glow wire flammability index GWFI according to EN 60695-2-12      | 850          |
| Glow wire ignition temperature GWIT according to EN 60695-2-13    | 775          |
| Temperature for the ball pressure test according to EN 60695-10-2 | 125 °C       |

## Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Pitch               | 2.5 mm   |
| Width [w]           | 21.1 mm  |
| Height [h]          | 5 mm   |
| Length [l]          | 15 mm  |

## Mounting

|                   |                           |
|-------------------|---------------------------|
| Connection method | Push-in spring connection |
|-------------------|---------------------------|

## Mechanical tests

|                      |  |
|----------------------|--|
| Conductor connection |  |
|----------------------|--|

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

## 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     |
|   | 0.75 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.  | 4 N         |

## 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           |

## 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)     |

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|                        |       |
|------------------------|-------|
| 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>      | 3 mΩ                  |
| Contact resistance R <sub>2</sub>      | 4 mΩ                  |
| Insertion/withdrawal cycles            | 10                    |

## 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                                    |

## 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)                       | 100 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)                      | 1.8 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)                      | 0.8 mm              |

# PTSM 0,5/ 8-P-2,5 - Printed-circuit board connector

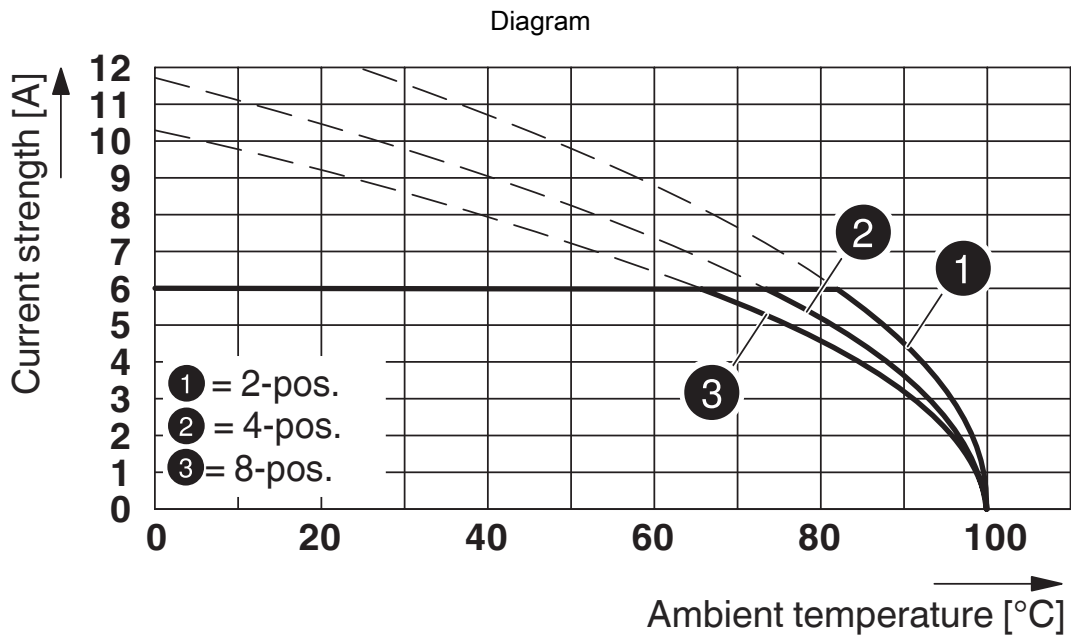


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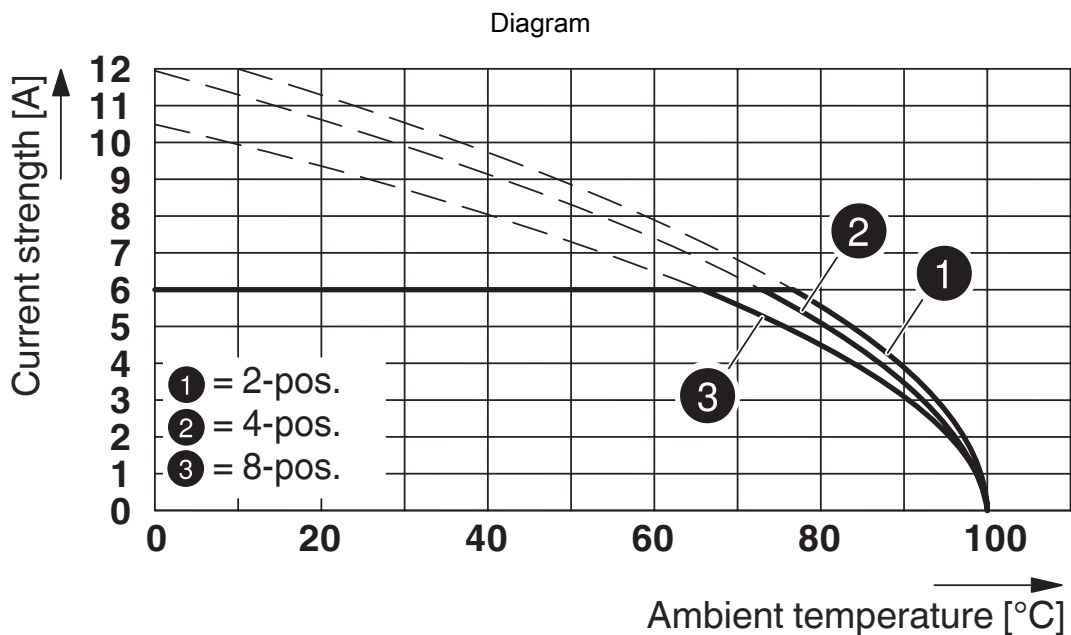
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|   |        |
|---|--------|
| Rated insulation voltage (II/2)                       | 320 V  |
| Rated surge voltage (II/2)                            | 2.5 kV |
| minimum clearance value - non-homogenous field (II/2) | 1.5 mm |
| minimum creepage distance (II/2)                      | 1.6 mm |

Drawings



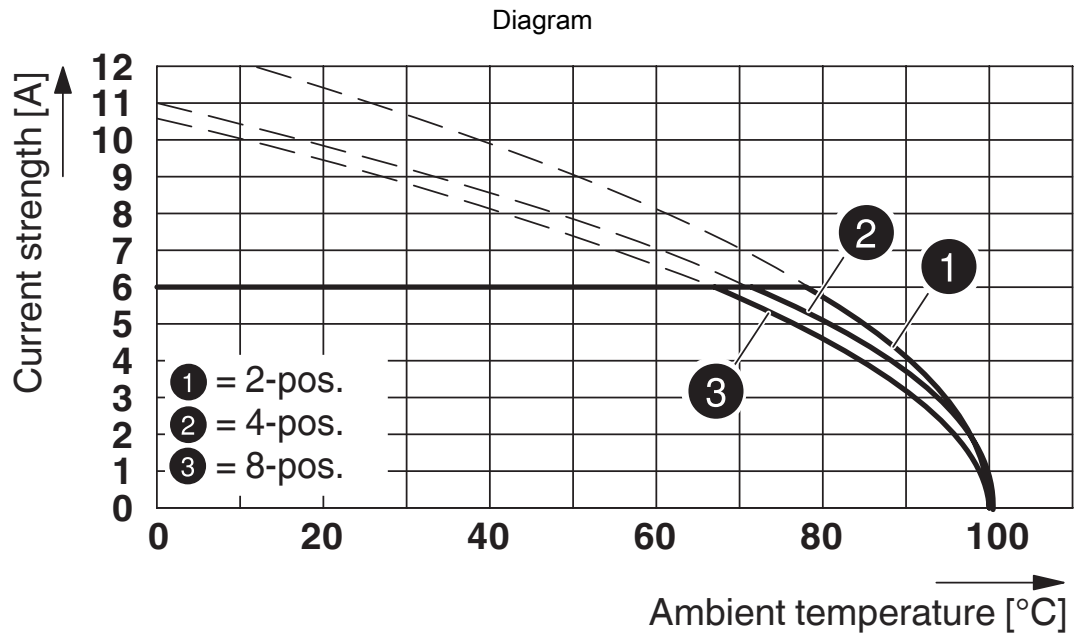
Derating curve for: PTSM 0,5/...-P-2,5 with PTSM 0,5/...-HV-2,5-THR R...



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

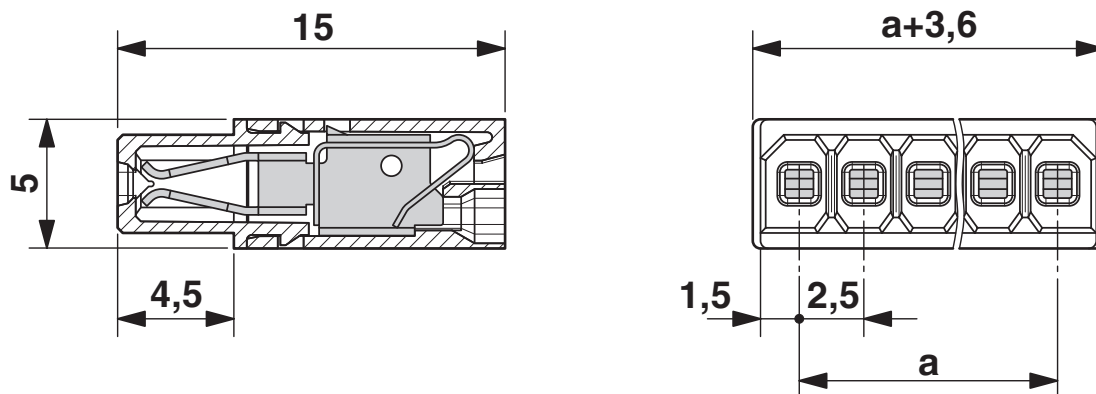
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Derating curve for: PTSM 0,5/..-P-2,5 with PTSM 0,5/..-HH-2,5-THR R..

Dimensional drawing



# PTSM 0,5/ 8-P-2,5 - Printed-circuit board connector





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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1778890>

|  <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                   | 26 - 18           | -                           |

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

|  <b>cULus Recognized</b><br>Approval ID: E60425-20101209 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal Voltage $U_N$ | Nominal Current $I_N$ | Cross Section AWG | Cross Section $\text{mm}^2$ |
| Use group B   |                       |                       |                   |                             |
|   | 150 V                 | 5 A                   | 26 - 20           | -                           |

|  <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                  |

# PTSM 0,5/ 8-P-2,5 - Printed-circuit board connector



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27460202 |
| ECLASS-12.0 | 27460202 |
| ECLASS-13.0 | 27460202 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC002638 |
|----------|----------|

### UNSPSC

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

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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/ 8-P-2,5 - Printed-circuit board connector



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## Accessories

### SZS 0,4X2,0 - Screwdriver

1205202

<https://www.phoenixcontact.com/pc/products/1205202>



Micro screwdriver, bladed, size: 0.4 x 2.0 x 60 mm, 2-component grip, with non-slip grip and twist cap

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### AI 0,25- 6 BU - Ferrule

3203040

<https://www.phoenixcontact.com/pc/products/3203040>



Ferrule, sleeve length: 6 mm, length: 10.5 mm, color: blue

# PTSM 0,5/ 8-P-2,5 - Printed-circuit board connector



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## AI 0,25- 6 YE - Ferrule

3203024

<https://www.phoenixcontact.com/pc/products/3203024>



Ferrule, sleeve length: 6 mm, length: 10.5 mm, color: yellow

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## AI 0,34- 6 TQ - Ferrule

3203053

<https://www.phoenixcontact.com/pc/products/3203053>



Ferrule, sleeve length: 6 mm, length: 10.5 mm, color: turquoise

# PTSM 0,5/ 8-P-2,5 - Printed-circuit board connector



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## PTSM 0,5/ 8-HV-2,5-THR R44 - PCB header

1778612

<https://www.phoenixcontact.com/pc/products/1778612>



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: Tin, type of contact: Pin, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: PTSM 0,5/..-HV-THR, pitch: 2.5 mm, mounting: THR 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

## PTSM 0,5/ 8-HH-2,5-THR R44 - PCB header

1778683

<https://www.phoenixcontact.com/pc/products/1778683>



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: Tin, type of contact: Pin, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: PTSM 0,5/..-HH-THR, 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: 44 mm wide tape

# PTSM 0,5/ 8-P-2,5 - Printed-circuit board connector



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## PTSM 0,5/ 8-HH-2,5-SMD R44 - PCB header

1778829

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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: Tin, type of contact: Pin, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: PTSM 0,5/..-HH-SMD, 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

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