

PTSM 0,5/ 3-HTB-2,5-SMD WH R44 - PCB header



1830139

<https://www.phoenixcontact.com/us/products/1830139>

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PCB headers, nominal cross section: 0.5 mm², color: signal white, 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/..-HTB-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

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
- Through-board header for low plug-in connection height on the PCB

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 1830139 |
| Packing unit | 330 pc |
| Minimum order quantity | 330 pc |
| Sales key | AA01 |
| Product key | AAAUTA |
| GTIN | 4046356884532 |
| Weight per piece (including packing) | 2.488 g |
| Weight per piece (excluding packing) | 1.3 g |
| Customs tariff number | 85366930 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|---------------------------|-------------------------|
| Product type | PCB headers |
| Product family | PTSM 0,5/...-HTB-SMD WH |
| 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 | 2.4 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 |
| Rated voltage (II/2) | 250 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 |

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| | |
|---|---------------------------|
| Surface characteristics | Tin-plated |
| Metal surface contact area (top layer) | Tin (3 µm - 5 µm Sn) |
| Metal surface contact area (middle layer) | Nickel (1.3 µm - 3 µm Ni) |
| Metal surface soldering area (top layer) | Tin (3 µm - 5 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] | 12.2 mm |
| Height [h] | 8.2 mm |
| Length [l] | 5 mm |

PCB design

| | |
|--------------|--------------|
| Pad geometry | 1.2 x 2.5 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 |
|---------------|------------------------|

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

Insertion and withdrawal forces

| | |
|-------------------------------------|------------------------|
| Specification | IEC 60512-13-2:2006-02 |
| Result | Test passed |
| No. of cycles | 10 |
| Insertion strength per pos. approx. | 5 N |
| Withdraw strength per pos. approx. | 3 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) | 125 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) | 1.5 mm |
| Rated insulation voltage (II/2) | 250 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 ₁ | 2.4 mΩ |
| Contact resistance R ₂ | 2.3 mΩ |
| Insertion/withdrawal cycles | 10 |
| Insulation resistance, neighboring positions | > 5 MΩ |

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Climatic test

| | |
|-----------------------------------|---|
| Specification | ISO 6988:1985-02 |
| Corrosive stress | 0.2 dm ³ SO ₂ on 300 dm ³ /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

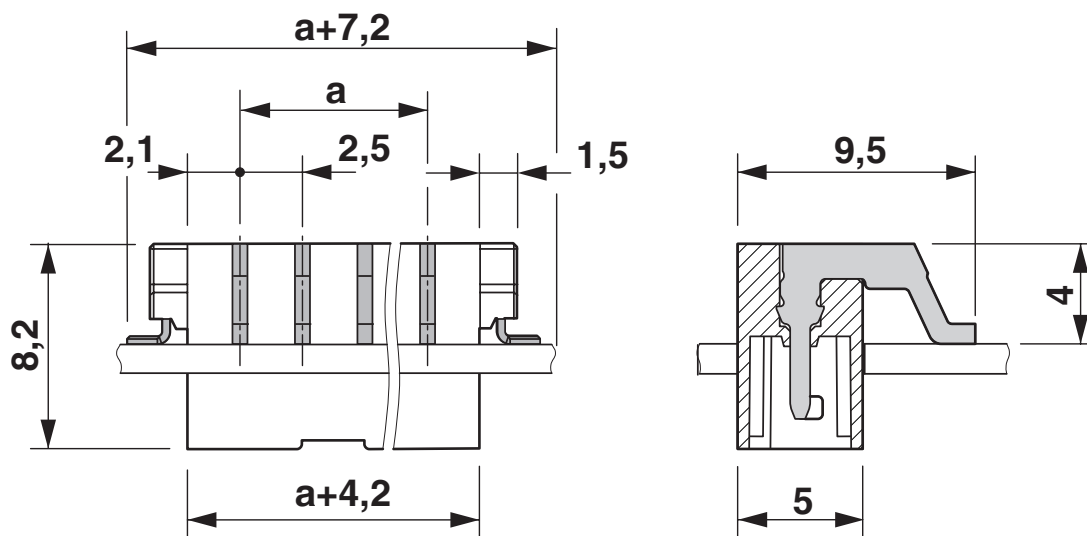
| | |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C |
| Relative humidity (storage/transport) | 30 % ... 70 % |
| Ambient temperature (assembly) | -5 °C ... 100 °C |
| Ambient temperature (operation) | -40 °C ... 100 °C (dependent on the derating curve) |

Packaging specifications

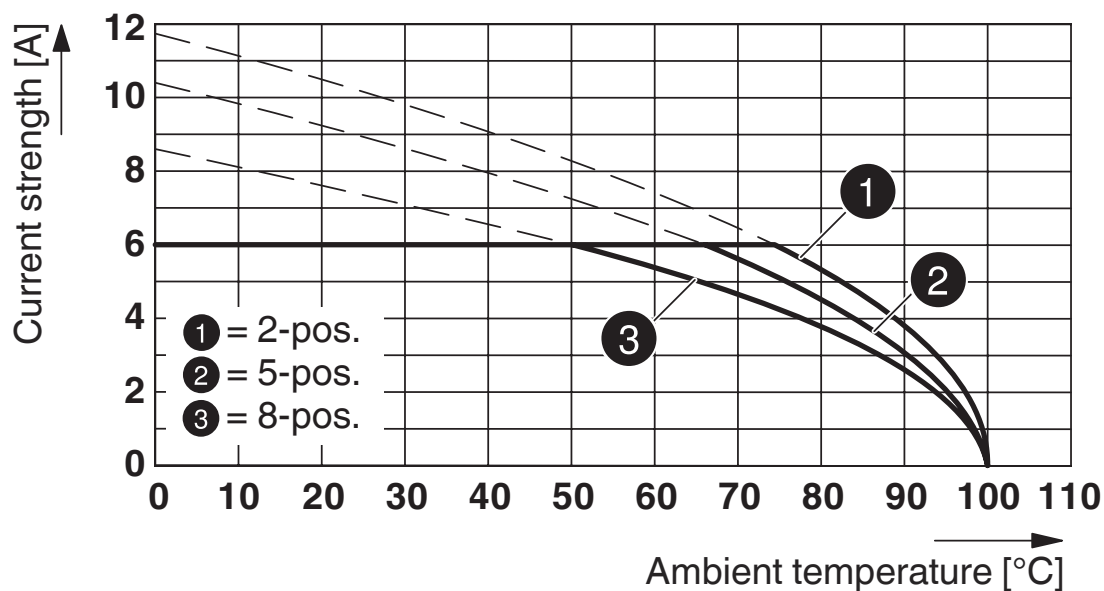
| | |
|-----------------------------|-----------------|
| Dimensional drawing | |
| Type of packaging | 44 mm wide tape |
| [W] tape width | 44 mm |
| [W2] coil overall dimension | ≤ 50.4 mm |
| [A] coil diameter | ≤ 330 mm |
| Outer packaging type | Transparent-Bag |

Drawings

Dimensional drawing



Diagram



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

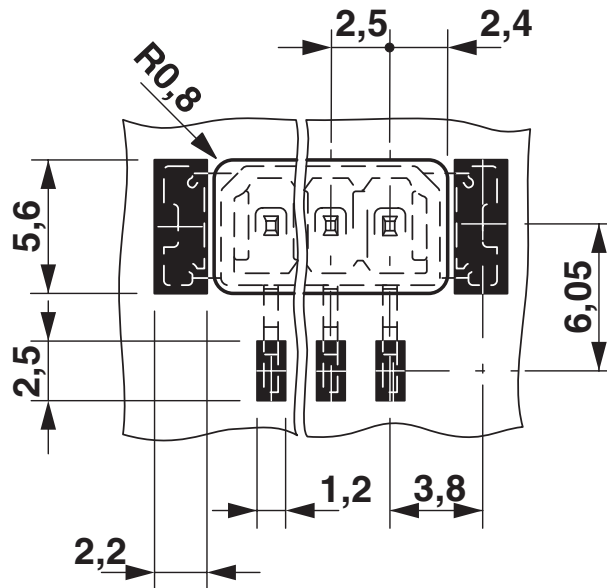
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Drilling plan/solder pad geometry



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1830139>

|  UL Recognized Approval ID: E118976-20130619 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | | | | |
| | 150 V | 5 A | - | - |

|  cULus Recognized Approval ID: E60425-20110108 | | | | |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| B | | | | |
| | 150 V | 6 A | - | - |

|  VDE Zeichengenehmigung Approval ID: 40048497 | | | | |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
| | Nominal voltage U_N | Nominal current I_N | Cross section AWG | Cross section mm^2 |
| keine | | | | |
| | 160 V | 6 A | - | - |

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Classifications

ECLASS

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

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002637 |
|-----------|----------|

UNSPSC

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

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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% |
|-------------------------------------|----------------------------|

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