

# GMSTBA 2,5/ 9-G-7,62 BK - PCB header



1793451

<https://www.phoenixcontact.com/us/products/1793451>

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PCB headers, nominal cross section: 2.5 mm<sup>2</sup>, color: black, nominal current: 12 A, rated voltage (III/2): 630 V, contact surface: Sn, contact connection type: Pin, number of potentials: 9, number of rows: 1, number of positions: 9, number of connections: 9, product range: GMSTBA 2,5/..-G, pitch: 7.62 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.23 mm, number of solder pins per potential: 1, plug-in system: COMBICON MSTB 2,5, Pin connector pattern alignment: Standard, locking: without, mounting method: without, type of packaging: packed in cardboard

## Your advantages

- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- Well-known mounting principle allows worldwide use
- Larger pitch for increased voltage requirements
- Closed contour for optimum stability of the plug-in connection
- Plug-in direction parallel to the PCB

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 1793451                        |
| Packing unit                         | 50 pc                          |
| Minimum order quantity               | 50 pc                          |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | AA03                           |
| Product key                          | AACSJD                         |
| GTIN                                 | 4046356619790                  |
| Weight per piece (including packing) | 4.528 g                        |
| Weight per piece (excluding packing) | 4.065 g                        |
| Customs tariff number                | 85366930                       |
| Country of origin                    | DE                             |

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## Technical data

### Product properties

|                           |                       |
|---------------------------|-----------------------|
| Product type              | PCB headers           |
| Product family            | GMSTBA 2,5/...-G      |
| Product line              | COMBICON Connectors M |
| Number of positions       | 9                     |
| Pitch                     | 7.62 mm               |
| Number of connections     | 9                     |
| Number of rows            | 1                     |
| Number of potentials      | 9                     |
| Mounting type             | without               |
| Pin layout                | Linear pinning        |
| Solder pins per potential | 1                     |

### Electrical properties

#### Properties

|                             |        |
|-----------------------------|--------|
| Nominal current $I_N$       | 12 A   |
| Nominal voltage $U_N$       | 630 V  |
| Contact resistance          | 1.4 mΩ |
| Rated voltage (III/3)       | 500 V  |
| Rated surge voltage (III/3) | 6 kV   |
| Rated voltage (III/2)       | 630 V  |
| Rated surge voltage (III/2) | 6 kV   |
| Rated voltage (II/2)        | 1000 V |
| Rated surge voltage (II/2)  | 6 kV   |

### Mounting

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

### 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   |
| 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

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

## Notes

|                    |  |
|--------------------|--|
| Notes on operation | In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load. |
|--------------------|--|

## Dimensions

|                       |          |
|-----------------------|----------|
| Dimensional drawing   |          |
| Pitch                 | 7.62 mm  |
| Width [w]             | 68.58 mm |
| Height [h]            | 11.8 mm  |
| Length [l]            | 12 mm    |
| Installed height      | 8.57 mm  |
| Solder pin length [P] | 3.23 mm  |
| Pin dimensions        | 1 x 1 mm |

## PCB design

|               |        |
|---------------|--------|
| Hole diameter | 1.4 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            |

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## Polarization and coding

|               |                        |
|---------------|------------------------|
| Specification | IEC 60512-13-5:2006-02 |
| Result        | Test passed            |

## Contact holder in insert

|   |                        |
|---|------------------------|
| Specification                               | IEC 60512-15-1:2008-05 |
| 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                       | 25                     |
| Insertion strength per pos. approx. | 9 N                    |
| Withdraw strength per pos. approx.  | 6 N                    |

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-1:2002-02 |
| Tested number of positions | 12                    |

### 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)                       | 500 V               |
| Rated surge voltage (III/3)                            | 6 kV                |
| minimum clearance value - non-homogenous field (III/3) | 5.5 mm              |
| minimum creepage distance (III/3)                      | 6.3 mm              |
| Rated insulation voltage (III/2)                       | 630 V               |
| Rated surge voltage (III/2)                            | 6 kV                |
| minimum clearance value - non-homogenous field (III/2) | 5.5 mm              |
| minimum creepage distance (III/2)                      | 5.5 mm              |
| Rated insulation voltage (II/2)                        | 1000 V              |
| Rated surge voltage (II/2)                             | 6 kV                |
| minimum clearance value - non-homogenous field (II/2)  | 5.5 mm              |
| minimum creepage distance (II/2)                       | 5.5 mm              |

## Environmental and real-life conditions

### Durability test

|               |                       |
|---------------|-----------------------|
| Specification | IEC 60512-9-1:2010-03 |
|---------------|-----------------------|

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|  |        |
|--|--------|
| Impulse withstand voltage at sea level       | 7.3 kV |
| Contact resistance R <sub>1</sub>            | 1.4 mΩ |
| Contact resistance R <sub>2</sub>            | 1.5 mΩ |
| Insertion/withdrawal cycles                  | 25     |
| 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 | 3.31 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

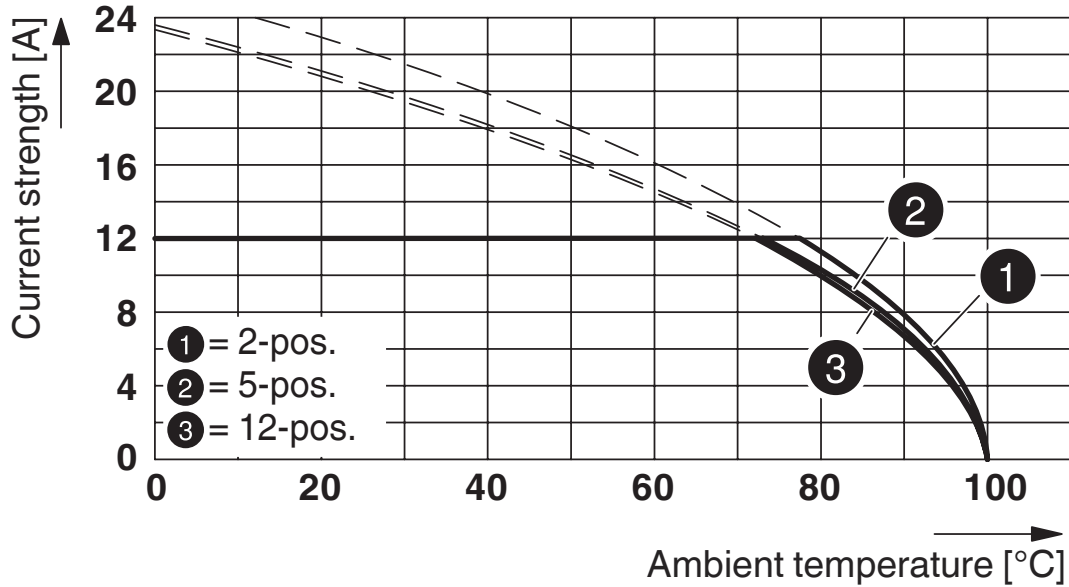
|   |   |
|---|---|
| Ambient temperature (storage/transport) | -40 °C ... 70 °C                                    |
| Relative humidity (storage/transport)   | 30 % ... 70 %                                       |
| Ambient temperature (assembly)          | -5 °C ... 100 °C                        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

## Packaging specifications

|                   |                     |
|-------------------|---------------------|
| Type of packaging | packed in cardboard |
|-------------------|---------------------|

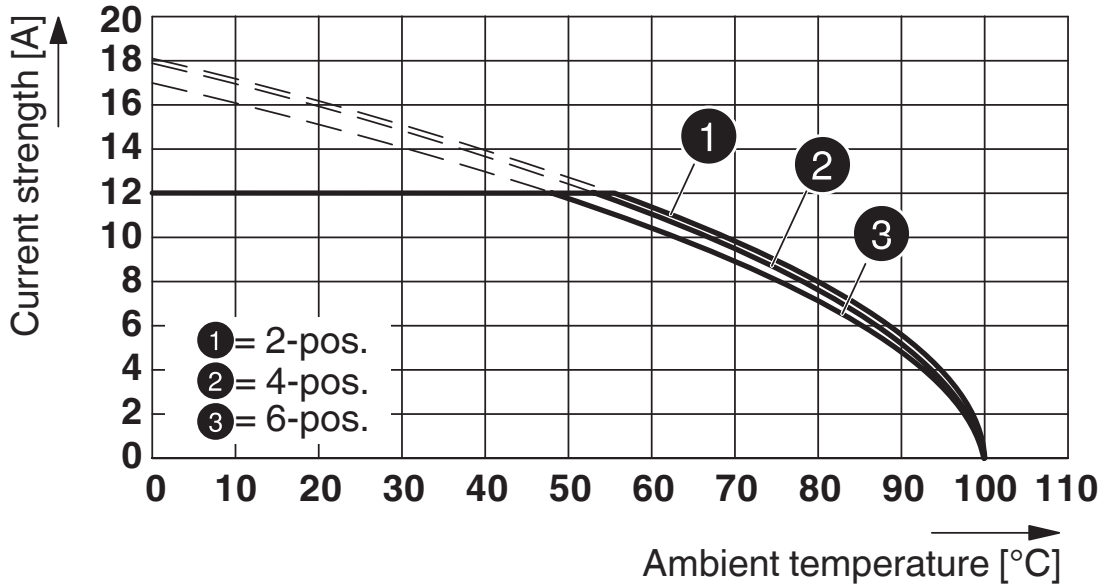
Drawings

Diagram



Type: GMSTB 2,5/...-ST-7,62 with GMSTBA 2,5/...-G-7,62

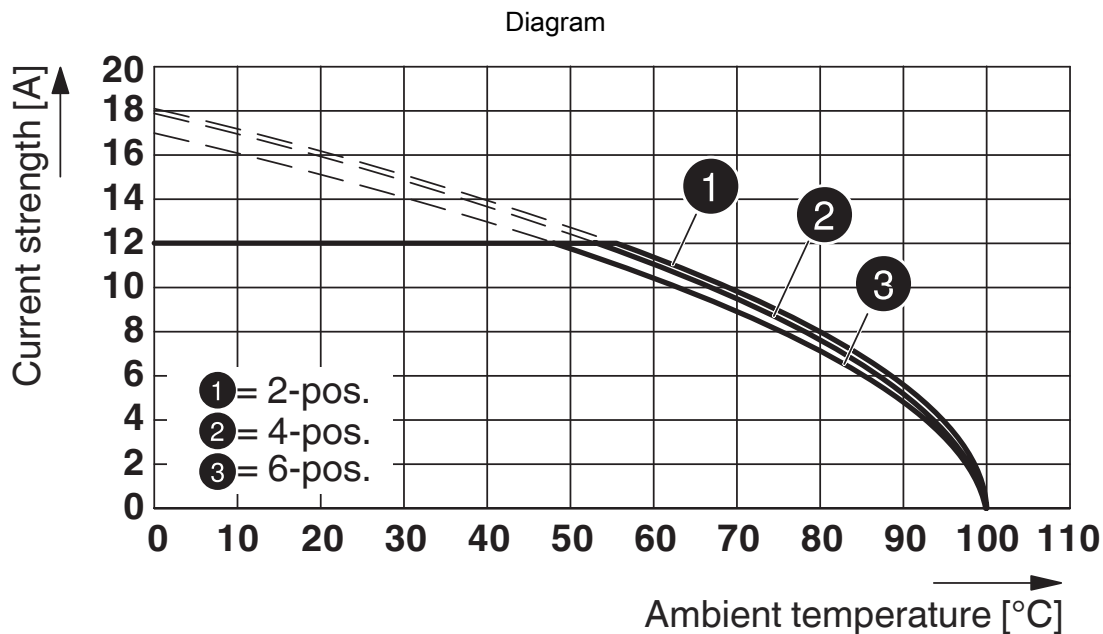
Diagram



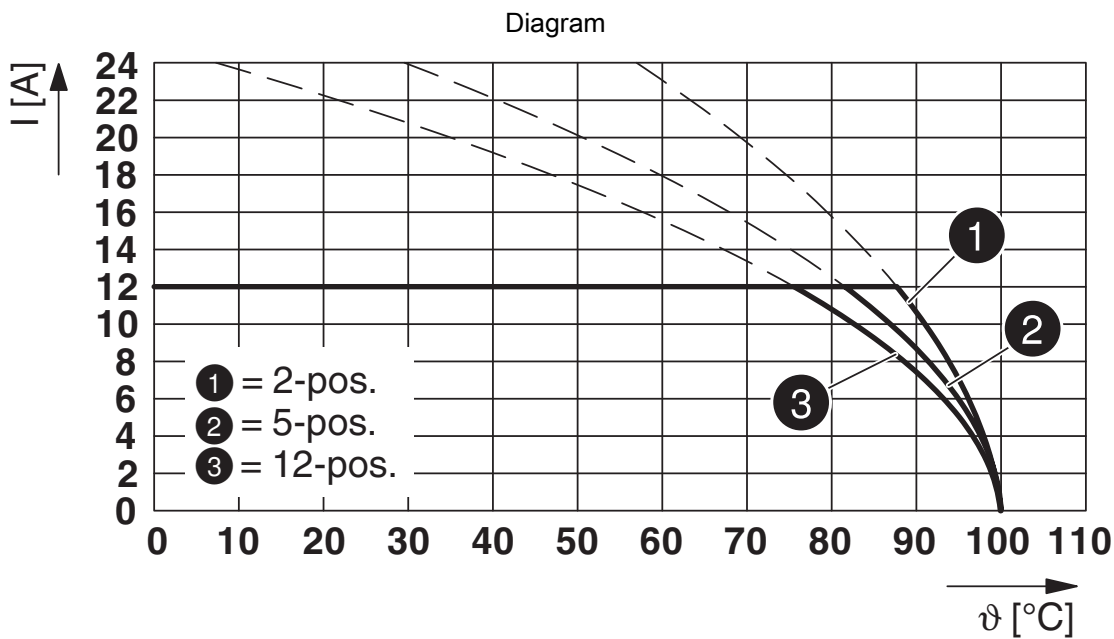
Type: GMVSTBR 2,5 HV/...-ST-7,62 with GMSTBA 2,5/...-G-7,62

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Type: GMVSTBW 2,5 HV/...-ST-7,62 with GMSTBA 2,5/...-G-7,62



Type: GFKC 2,5/...-ST-7,62 with GMSTBA 2,5/...-G-7,62

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Diagram



Type: GIC 2,5/...-G-7,62 with GMSTBA 2,5/...-G-7,62

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1793451>

|  <b>CSA</b><br>Approval ID: 13631-2585951 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B  | 300 V                 | 10 A                  | -                 | -                           |
| D  | 300 V                 | 10 A                  | -                 | -                           |

|  <b>cULus Recognized</b><br>Approval ID: E60425-19931013 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| B   | 300 V                 | 15 A                  | -                 | -                           |
| D   | 300 V                 | 10 A                  | -                 | -                           |

|  <b>VDE approval of drawings</b><br>Approval ID: 40050648 |                       |                       |                   |                             |
|--|-----------------------|-----------------------|-------------------|-----------------------------|
|  | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine  | 400 V                 | 12 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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