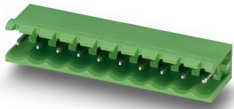


# PCB header - MSTB 2,5/22-G

1754834

<https://www.phoenixcontact.com/de/produkte/1754834>

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PCB headers, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Male connector, number of potentials: 22, number of rows: 1, number of positions: 22, number of connections: 22, product range: MSTB 2,5/..-G, pitch: 5 mm, pin layout: Linear pinning, solder pin [P]: 3.5 mm, number of solder pins per potential: 1, plug-in system: COMBICON MSTB 2,5, Pin connector pattern alignment: Standard, locking: without, mounting: 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
- Easy PCB replacement thanks to plug-in modules
- Well-known mounting principle allows worldwide use
- Items that can be aligned in various pitches support flexible and space-saving PCB assembly

# PCB header - MSTB 2,5/22-G



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## Commercial Data

Item number	1754834
Packing unit	50 pc
Minimum order quantity	50 pc
Note	Made to Order (non-returnable)
Sales Key	E1 - Leiterplattenanschl.
Product Key	AACSGB
Catalog Page	Page 166 (CC-2005)
GTIN	4017918029005
Weight per Piece (including packing)	9,1 g
Weight per Piece (excluding packing)	8,283 g
Customs tariff number	85366930
Country of origin	DE

## Technical Data

### Product properties

Type	Standard
Product line	COMBICON Connectors M
Product type	PCB headers
Number of positions	22
Pitch	5 mm
Number of connections	22
Number of rows	1
Mounting flange	without
Number of potentials	22
Pin layout	Linear pinning

### Electrical properties

Nominal current $I_N$	12 A
Nominal voltage $U_N$	320 V
Pollution degree	3
Contact resistance	1.7 mΩ
Rated voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
Rated voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV

### Mounting

Mounting type Wave soldering	Wave soldering
Mounting type	Wave soldering

### Material specifications

#### Material data - contact

Contact material	Cu alloy
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

Housing color	green (6021)
Insulating material	PBT
Insulating material group	IIIa
CTI according to IEC 60112	225
Flammability rating according to UL 94	V0

# PCB header - MSTB 2,5/22-G

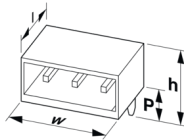
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## Notes

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.
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## Dimensions

Dimensional drawing	
Pitch	5 mm
Width [w]	110 mm
Height [h]	12.1 mm
Length [l]	12 mm
Installed height	8.6 mm
Solder pin length [P]	3.5 mm

## Mechanical tests

### Test for conductor damage and slackening

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	0.34 mm <sup>2</sup> / solid / > 15 N
	0.2 mm <sup>2</sup> / flexible / > 10 N
	2.5 mm <sup>2</sup> / solid / > 50 N
	2.5 mm <sup>2</sup> / flexible / > 50 N

### Insertion and withdrawal forces

Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N

### Torque test

Specification	IEC 60999-1:1999-11
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### Contact holder in insert

Specification	IEC 60512-15-1:2008-05
Contact holder in insert Requirements >20 N	Test passed

### Resistance of inscriptions

# PCB header - MSTB 2,5/22-G



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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

## Electrical tests

### Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	24

### 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 225
Rated insulation voltage (III/3)	250 V
Rated surge voltage (III/3)	4 kV
minimum clearance value - non-homogenous field (III/3)	3 mm
minimum creepage distance (III/3)	4 mm
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
minimum clearance value - non-homogenous field (III/2)	3 mm
minimum creepage distance (III/2)	3.2 mm
Rated insulation voltage (II/2)	400 V
Rated surge voltage (II/2)	4 kV
minimum clearance value - non-homogenous field (II/2)	3 mm
minimum creepage distance (II/2)	4 mm

## Environmental and real-life conditions

### Vibration test

Specification	IEC 60068-2-6:2007-12
Frequency	10 - 150 - 10 Hz

# PCB header - MSTB 2,5/22-G



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Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)
Sweep speed	5g (60.1 - 150 Hz)
Test duration per axis	2.5 h

## Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	4.8 kV
Contact resistance $R_1$	1.7 m $\Omega$
Contact resistance $R_2$	1.8 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	2.21 kV

## Ambient conditions

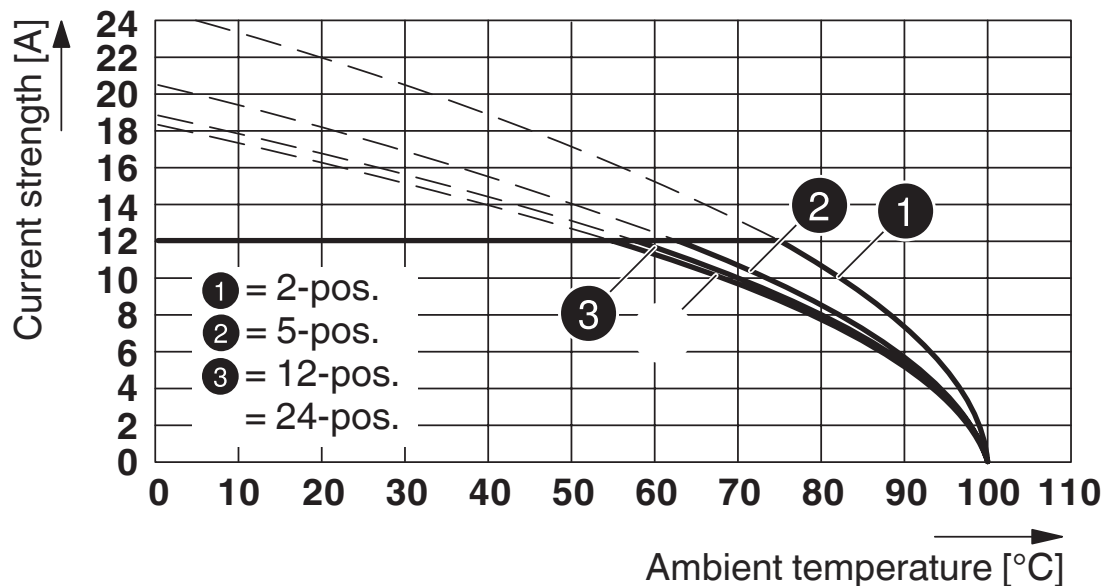
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C

## Packaging specifications

Type of packaging	packed in cardboard
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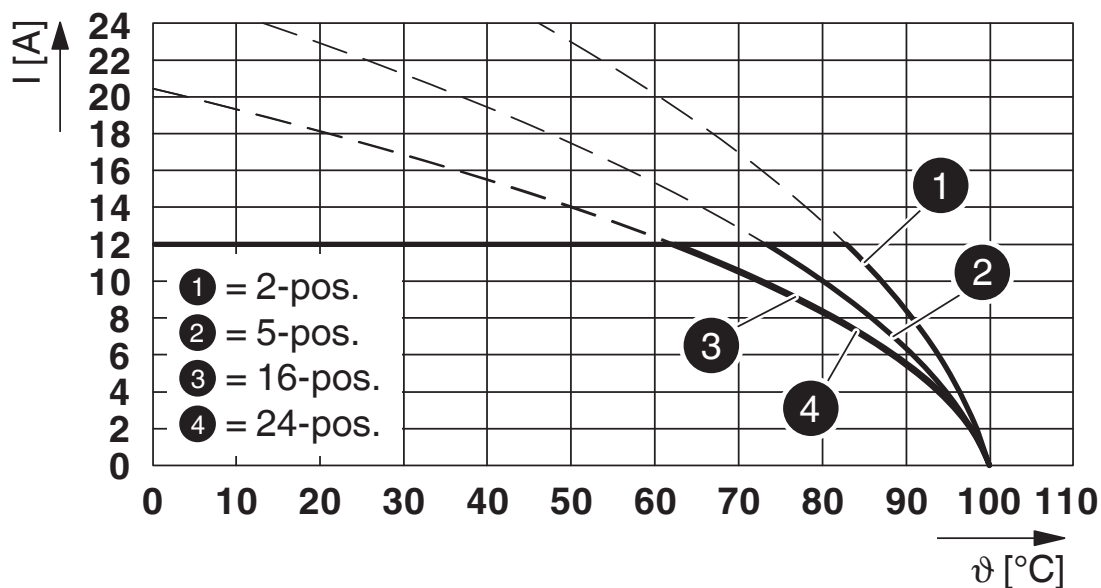
## Drawings

Diagram



Type: FRONT-MSTB 2,5/...-ST with MSTB 2,5/...-G

Diagram



Type: MSTB 2,5/...-ST with MSTB 2,5/...-G


# PCB header - MSTB 2,5/22-G



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## Approvals

 <b>CSA</b> Approval ID: 13631				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
Use group B	300 V	10 A	-	-
Use group D	300 V	10 A	-	-

 <b>IECEE CB Scheme</b> Approval ID: DE1-60988-B1B2				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	250 V	12 A	-	-

 <b>EAC</b> Approval ID: B.01687				
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 <b>cULus Recognized</b> Approval ID: E60425-19931011				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
Use group B	300 V	15 A	-	-
Use group D	300 V	10 A	-	-

 <b>VDE Zeichengenehmigung</b> Approval ID: 40050648				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $\text{mm}^2$
	250 V	12 A	-	-



# PCB header - MSTB 2,5/22-G



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<https://www.phoenixcontact.com/de/produkte/1754834>

## Classifications

### ECLASS

ECLASS-9.0	27440402
ECLASS-10.0.1	27440402
ECLASS-11.0	27460201

### ETIM

ETIM 8.0	EC002637
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### UNSPSC

UNSPSC 21.0	39121400
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# PCB header - MSTB 2,5/22-G

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<https://www.phoenixcontact.com/de/produkte/1754834>



## Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

# PCB header - MSTB 2,5/22-G

1754834

<https://www.phoenixcontact.com/de/produkte/1754834>

## Accessories

### Coding section

Coding section - CR-MSTB - 1734401

<https://www.phoenixcontact.com/de/produkte/1734401>

Coding section, inserted into the recess in the header or the inverted plug, red insulating material



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## Accessories

Accessories - MSTB-BF - 1759981

<https://www.phoenixcontact.com/de/produkte/1759981>

Mounting flange, for fixing both ends of the header onto the PCB, green insulating material, with M 2 x 14 screws and nuts.



# PCB header - MSTB 2,5/22-G

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<https://www.phoenixcontact.com/de/produkte/1754834>

## Accessories

Accessories - MSTB-BL - 1755477

<https://www.phoenixcontact.com/de/produkte/1755477>



Keying cap, for forming sections, plugs onto header pin, green insulating material

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## Marker card

Marker card - SK 5/3,8:FORTL.ZAHLEN - 0804183

<https://www.phoenixcontact.com/de/produkte/0804183>



Marker card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: 5 x 3.8 mm

# PCB header - MSTB 2,5/22-G

1754834

<https://www.phoenixcontact.com/de/produkte/1754834>

## Marker card

Marker card - SK 5/3,8:UNBEDRUCKT - 0805409

<https://www.phoenixcontact.com/de/produkte/0805409>

Marker card, white, unlabeled, can be labeled with: Marker pen, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: 5 x 3.8 mm



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## PCB connector

PCB connector - MSTB 2,5/22-ST - 1754847

<https://www.phoenixcontact.com/de/produkte/1754847>

PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 22, number of rows: 1, number of positions: 22, number of connections: 22, product range: MSTB 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard



# PCB header - MSTB 2,5/22-G

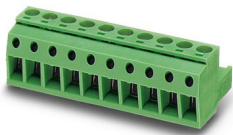
1754834

<https://www.phoenixcontact.com/de/produkte/1754834>

## PCB connector

PCB connector - MSTBP 2,5/22-ST - 1765975

<https://www.phoenixcontact.com/de/produkte/1765975>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 22, number of rows: 1, number of positions: 22, number of connections: 22, product range: MSTBP 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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## PCB connector

PCB connector - SMSTB 2,5/22-ST - 1768956

<https://www.phoenixcontact.com/de/produkte/1768956>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 22, number of rows: 1, number of positions: 22, number of connections: 22, product range: SMSTB 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -45 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

# PCB header - MSTB 2,5/22-G

1754834

<https://www.phoenixcontact.com/de/produkte/1754834>

## PCB connector

PCB connector - FRONT-MSTB 2,5/22-ST - 1779615

<https://www.phoenixcontact.com/de/produkte/1779615>

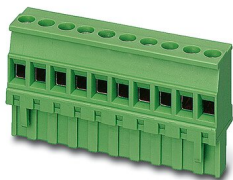


PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 22, number of rows: 1, number of positions: 22, number of connections: 22, product range: FRONT-MSTB 2,5/..-ST, pitch: 5 mm, connection method: Front screw connection, conductor/PCB connection direction: 0 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

## PCB connector

PCB connector - MVSTBR 2,5/22-ST - 1792210

<https://www.phoenixcontact.com/de/produkte/1792210>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 22, number of rows: 1, number of positions: 22, number of connections: 22, product range: MVSTBR 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: 90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

# PCB header - MSTB 2,5/22-G

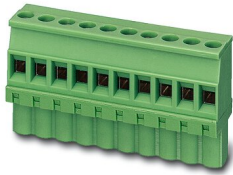
1754834

<https://www.phoenixcontact.com/de/produkte/1754834>

## PCB connector

PCB connector - MVSTBW 2,5/22-ST - 1792728

<https://www.phoenixcontact.com/de/produkte/1792728>



PCB connector, nominal cross section: 2.5 mm<sup>2</sup>, color: green, nominal current: 12 A, rated voltage (III/2): 320 V, contact surface: Tin, type of contact: Female connector, number of potentials: 22, number of rows: 1, number of positions: 22, number of connections: 22, product range: MVSTBW 2,5/..-ST, pitch: 5 mm, connection method: Screw connection with tension sleeve, screw head form: L Slotted, conductor/PCB connection direction: -90 °, locking clip: - Locking clip, plug-in system: COMBICON MSTB 2,5, locking: without, mounting: without, type of packaging: packed in cardboard

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