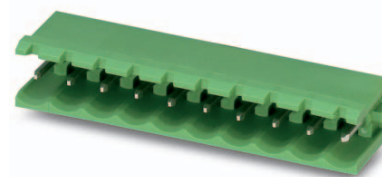


# Data sheet

**Order No.: 1759114**

**Type: MSTB 2,5/12-G-5,08**

**Header**



The figure shows a 10-position version of the product

## 1 Main features



- |                         |                     |                        |                     |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos.           | 12                  | • Nominal current      | 12 A                |
| • Nominal cross section | 2.5 mm <sup>2</sup> | • Nominal voltage      | 320 V               |
| • Color                 | green               | • Connection direction | 0 °                 |
| • Pitch                 | 5.08 mm             | • Type of packaging    | packed in cardboard |
| • Mounting type         | Wave soldering      |                        |                     |

## 2 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
- ✓ Plug-in direction parallel to the PCB
- ✓ Items that can be aligned in various pitches support flexible and space-saving PCB assembly



Make sure you always use the latest documentation.

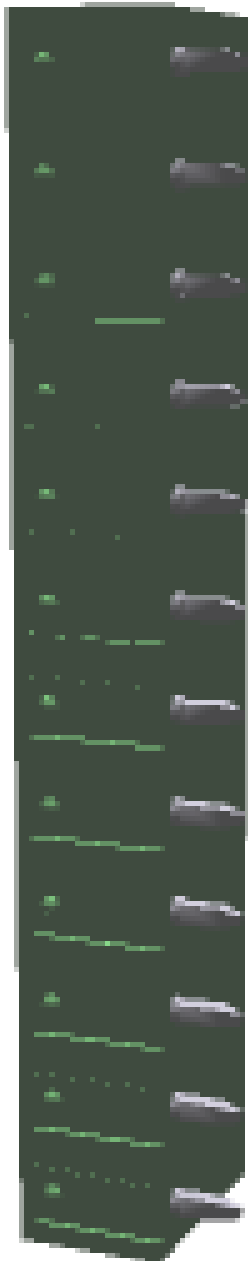
It can be downloaded at: [phoenixcontact.net/product/1759114](http://phoenixcontact.net/product/1759114)

**1759114 MSTB 2,5/12-G-5,08****3 Table of contents**

1	Main features.....	1
2	Your advantages .....	1
3	Table of contents .....	2
4	3D model in PDF can be activated (Acrobat Reader only).....	3
5	item properties.....	4
	5.1 Material data .....	4
6	Dimensions.....	4
	6.1 Dimensions for the product .....	4
	6.2 Dimensions for PCB design.....	4
7	Series drawing.....	5
8	Packaging information .....	5
9	Application.....	5
	9.1 Temperature limit values .....	5
10	Mechanical tests.....	6
11	Electrical tests .....	7
	11.1 Electrical data.....	7
	11.2 Air and creepage distances .....	7
12	Current carrying capacity/derating curves .....	8
13	Environmental and durability tests .....	11
	13.1 Vibration test .....	11
14	Classification for connectors.....	11
15	Approvals .....	11
16	Commercial Data.....	12
17	corresponding plugs .....	12
18	Accessories.....	12
19	Combination tests.....	13

1759114 MSTB 2,5/12-G-5,08

**4 3D model in PDF can be activated (Acrobat Reader only)**



**1759114 MSTB 2,5/12-G-5,08****5 item properties**

Order No.	1759114
Type	MSTB 2,5/12-G-5,08
Type of contact	Male connector
Range of articles	MSTB 2,5/...G
Pitch	5.08 mm
Number of positions	12
Locking	without
Mounting type	Wave soldering
Pin layout	Linear pinning

**5.1 Material data**

<b>Material of metal parts</b>	
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Ni 1 µm ... 3 µm , Sn 3 µm ... 5 µm
Soldering area surface	Ni 1 µm ... 3 µm , Sn 3 µm ... 5 µm
Surface characteristics	Tin-plated
<b>Insulating material data</b>	
Insulating material	PA
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Color	green (6021)
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

**6 Dimensions****6.1 Dimensions for the product**

Length	12 mm
Width	60.96 mm
Height (without solder pin)	8.6 mm
Total height	12.1 mm
Solder pin [P]	3.5 mm
Dimension a	55.88 mm

**6.2 Dimensions for PCB design**

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

**1759114 MSTB 2,5/12-G-5,08**

## 7 Series drawing

## 8 Packaging information

Type of packaging	packed in cardboard
Pieces per package	50

## 9 Application

### 9.1 Temperature limit values

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

**1759114 MSTB 2,5/12-G-5,08****10 Mechanical tests**

Mechanical test group A	
Specification	IEC 61984:2008-10
Visual test	Test passed
Specification	IEC 60512-1-1:2002-02
Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02
Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12
Insertion and withdrawal force	Test passed
Specification	IEC 60512-13-2:2006-02
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N
Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N
Contact retention in insert	Test passed
Specification	IEC 60512-15-1:2008-05
Test force per pos.	41 N

**1759114 MSTB 2,5/12-G-5,08****11 Electrical tests****11.1 Electrical data**

Rated current / conductor cross section	12 A / 2.5 mm <sup>2</sup>
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.4 mΩ
Degree of pollution	2

**11.2 Air and creepage distances**

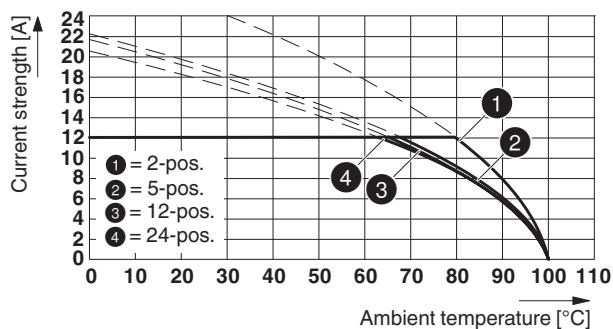
Component	Header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	250 V	320 V	400 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	3 mm	3 mm	3 mm
Minimum value of the creepage path requirement in acc. with table	3.2 mm	3 mm	3 mm

1759114 MSTB 2,5/12-G-5,08

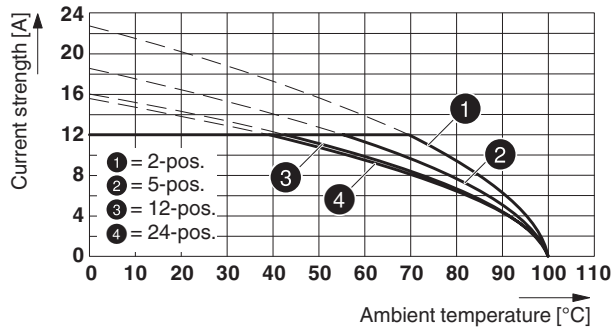
12 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Reduction factor	0.8
Number of positions	See diagram
Conductor cross section	2.5 mm <sup>2</sup>
Note	

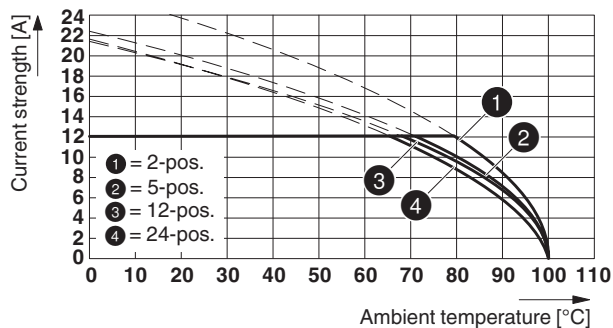
Type: MSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08



Type: MSTBU 2,5/...-STD-5,08 with MSTB 2,5/...-G-5,08

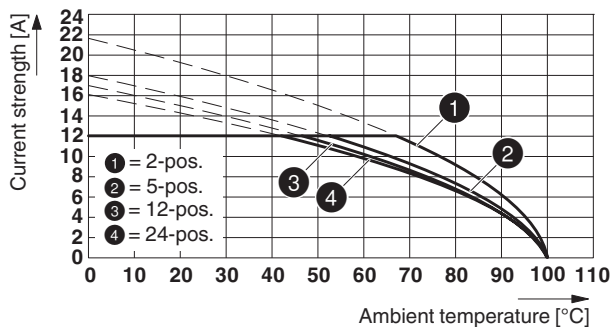


Type: MSTBP 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08

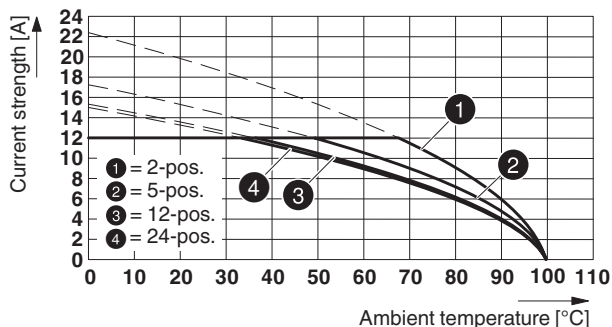


1759114 MSTB 2,5/12-G-5,08

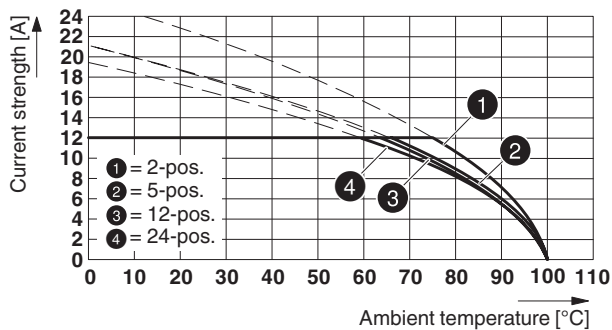
Type: SMSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08



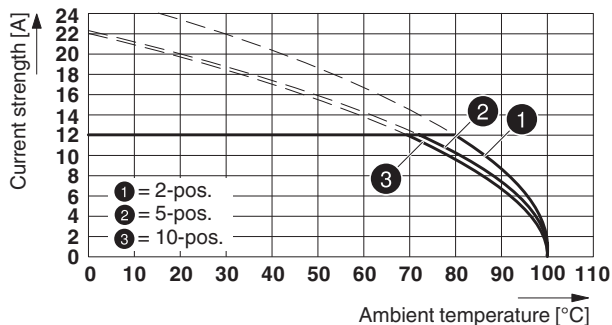
Type: MVSTB(R/W) 2,5/...-ST with MDSTBVA 2,5/...-G-5,08



Type: FRONT-MSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08



Type: TMSTBP 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08



2017-09-29

Product version 03  
Document revision 0

**1759114 MSTB 2,5/12-G-5,08**

**Type: TVMSTB 2,5/...-ST-5,08 with MSTB 2,5/...-G-5,08**

86006\_1000\_en


**1759114 MSTB 2,5/12-G-5,08****13 Environmental and durability tests****13.1 Vibration test**


Specification	IEC 60068-2-6:2007-12
Result	Test passed
Frequency	10 - 150 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 - 60.1 Hz)
Acceleration	5 g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis


**14 Classification for connectors**


Specification	IEC 61984:2008-10
Main features	Connectors without switching capacity (COC)
Construction form	Fixed connectors
Strain relief elements	without strain relief
Protection against electric shock	Not encapsulated - touch-proof when inserted
Protection class	
Protective conductor	without PE
Lock	no

**15 Approvals**

CSA 				
Use group	B	D		
mm <sup>2</sup> /AWG/kcmil				
Voltage	300 V	300 V		
Current	10 A	10 A		

VDE Gutachten mit Fertigungsüberwachung 				
mm <sup>2</sup> /AWG/kcmil				
Voltage	250 V			
Current	12 A			

IECEE CB Scheme 				
mm <sup>2</sup> /AWG/kcmil				
Voltage	250 V			
Current	12 A			

cULus Recognized 				
Use group	B	D		
mm <sup>2</sup> /AWG/kcmil				
Voltage	300 V	150 V		
Current	15 A	15 A		

EAC 				
---	--	--	--	--

**1759114 MSTB 2,5/12-G-5,08****16 Commercial Data**

Order No.	1759114
Type	MSTB 2,5/12-G-5,08
Pieces per package	50
Net weight	4.434 g
GTIN	4017918030582
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**17 corresponding plugs**

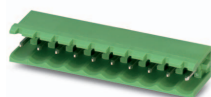
Order No.	Type
1754665	FKCN 2,5/12-ST-5,08
1757116	MSTB 2,5/12-ST-5,08
1764280	MSTB 2,5/12-STZ-5,08
1769117	MSTBP 2,5/12-ST-5,08
1777387	FRONT-MSTB 2,5/12-ST-5,08
1781085	MSTBT 2,5/12-ST-5,08
1792346	MVSTBR 2,5/12-ST-5,08
1792854	MVSTBW 2,5/12-ST-5,08
1808913	MSTBC 2,5/12-ST-5,08
1809608	MSTBC 2,5/12-STZ-5,08
1824227	MSTBU 2,5/12-STD-5,08
1824450	MSTBU 2,5/12-ST-5,08-FL
1826380	SMSTB 2,5/12-ST-5,08
1831414	MSTBVK 2,5/12-ST-5,08
1833917	UMSTBVK 2,5/12-ST-5,08
1873155	FKC 2,5/12-ST-5,08
1873757	FKCVW 2,5/12-ST-5,08
1874057	FKCVR 2,5/12-ST-5,08
1883705	QC 1/12-ST-5,08
1902217	FKCT 2,5/12-ST-5,08
1975176	FKCS 2,5/12-ST-5,08

**18 Accessories**

Description	Order No.	Type
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
Mounting flange, for fixing both ends of the header onto the PCB, green insulating material, with M 2 x 14 screws and nuts.	1759981	MSTB-BF
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
	0805085	SK 5,08/3,8:SO
	0805412	SK 5,08/3,8:UNBEDRUCKT
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT

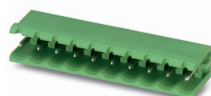
1759114 MSTB 2,5/12-G-5,08

19 Combination tests



	<b>MSTB 2,5/..-G</b>	<b>MSTB 2,5/..-ST</b>	<b>MSTBU 2,5/..-STD</b>	<b>MSTBP 2,5/..-ST</b>	<b>SMSTB 2,5/..-ST</b>
Specification		IEC 61984	IEC 61984	IEC 61984	IEC 61984
<b>Mechanical tests (A)</b>					
Insertion/withdrawal force per position		approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N
Polarization when inserted Requirement >20 N		Test passed	Test passed	Test passed	Test passed
Contact holder in insert Requirements >20 N		Test passed	Test passed	Test passed	Test passed
<b>Durability tests (B)</b>					
Contact resistance R <sub>1</sub>		1.4 mΩ	2.5 mΩ	1.3 mΩ	2.4 mΩ
Insertion/withdrawal cycles		25	25	25	25
Contact resistance R <sub>2</sub>		1.4 mΩ	2.5 mΩ	1.4 mΩ	2.4 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)		4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV	2.21 kV	2.21 kV	2.21 kV
Insulation resistance Requirements > 5 MΩ		> 0.3 TΩ	> 0.5 TΩ	> 50 GΩ	> 0.1 TΩ
<b>Thermal tests (C)</b>					
Tested number of positions		24	24	24	24
Tested conductor cross section		2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current		12 A	12 A	12 A	12 A
Upper limiting temperature Requirements < 100°C		Test passed	Test passed	Test passed	Test passed
<b>Climatic tests (D)</b>					
Test sequence 1: low temperature storage		-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h
Test sequence 2: heat storage		100 °C/168 h	100 °C/168 h	100 °C/168 h	100 °C/168 h
Test sequence 3: noxious gas storage (ISO 6988)		0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)		4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)		2.21 kV	2.21 kV	2.21 kV	2.21 kV
<b>Environmental and endurance tests (E)</b>					
Specification		IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10
Degree of protection		Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger

**1759114 MSTB 2,5/12-G-5,08**



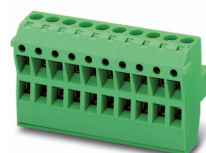
**MSTB 2,5/..-G**



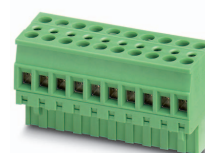
**MVSTBW 2,5/..-ST**



**FRONT-MSTB 2,5/..-ST**



**TMSTBP 2,5/..-ST**



**TVMSTB 2,5/..-ST**

Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
<b>Mechanical tests (A)</b>				
Insertion/withdrawal force per position	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N
Polarization when inserted Requirement >20 N	Test passed	Test passed	Test passed	Test passed
Contact holder in insert Requirements >20 N	Test passed	Test passed	Test passed	Test passed
<b>Durability tests (B)</b>				
Contact resistance R <sub>1</sub>	2.6 mΩ	1.6 mΩ	1.1 mΩ	1.1 mΩ
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R <sub>2</sub>	2.6 mΩ	1.6 mΩ	1.1 mΩ	1.2 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
Insulation resistance Requirements > 5 MΩ	> 0.2 TΩ	> 0.3 TΩ	> 0.4 TΩ	> 0.5 TΩ
<b>Thermal tests (C)</b>				
Tested number of positions	24	24	10	10
Tested conductor cross section	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current	12 A	12 A	12 A	12 A
Upper limiting temperature Requirements < 100°C	Test passed	Test passed	Test passed	Test passed
<b>Climatic tests (D)</b>				
Test sequence 1: low temperature storage	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h	-40 °C/2 h
Test sequence 2: heat storage	100 °C/168 h	100 °C/168 h	100 °C/168 h	100 °C/168 h
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle	0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> / 40 °C/1 cycle
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV	4.8 kV	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV	2.21 kV	2.21 kV
<b>Environmental and endurance tests (E)</b>				
Specification	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10	IEC 61984:2008-10
Degree of protection	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger



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