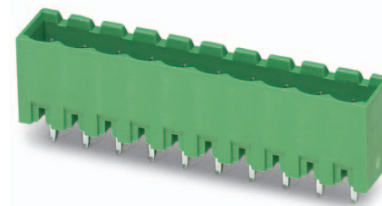


# Data sheet

Order No.: 1755943

Type: MSTBVA 2,5/23-G-5,08

## Header



The figure shows a 10-position version of the product

## 1 Main features



- |                         |                     |                        |                     |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos.           | 23                  | • Nominal current      | 12 A                |
| • Nominal cross section | 2.5 mm <sup>2</sup> | • Nominal voltage      | 320 V               |
| • Color                 | green               | • Connection direction | 90 °                |
| • 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
- ✓ Well-known mounting principle allows worldwide use
- ✓ Vertical connection enables multi-row arrangement on the PCB
- ✓ Closed contour for optimum stability of the plug-in connection



Make sure you always use the latest documentation.

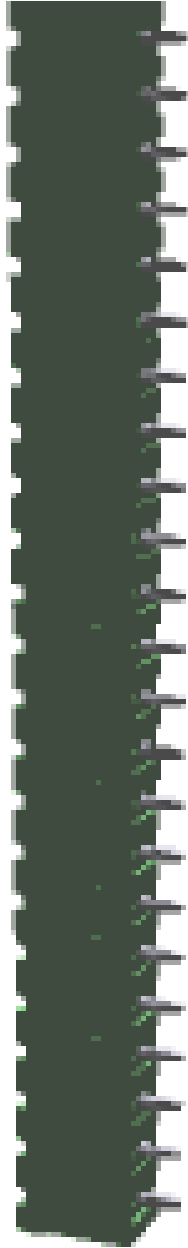
It can be downloaded at: [phoenixcontact.net/product/1755943](http://phoenixcontact.net/product/1755943)

**1755943 MSTBVA 2,5/23-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 .....	6
9	Application.....	6
	9.1 Temperature limit values .....	6
10	Mechanical tests.....	7
11	Electrical tests .....	8
	11.1 Electrical data.....	8
	11.2 Air and creepage distances.....	8
12	Current carrying capacity/derating curves .....	9
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

1755943 MSTBVA 2,5/23-G-5,08

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



**1755943 MSTBVA 2,5/23-G-5,08****5 item properties**

Order No.	1755943
Type	MSTBVA 2,5/23-G-5,08
Type of contact	Male connector
Range of articles	MSTBVA 2,5/..-G
Pitch	5.08 mm
Number of positions	23
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**

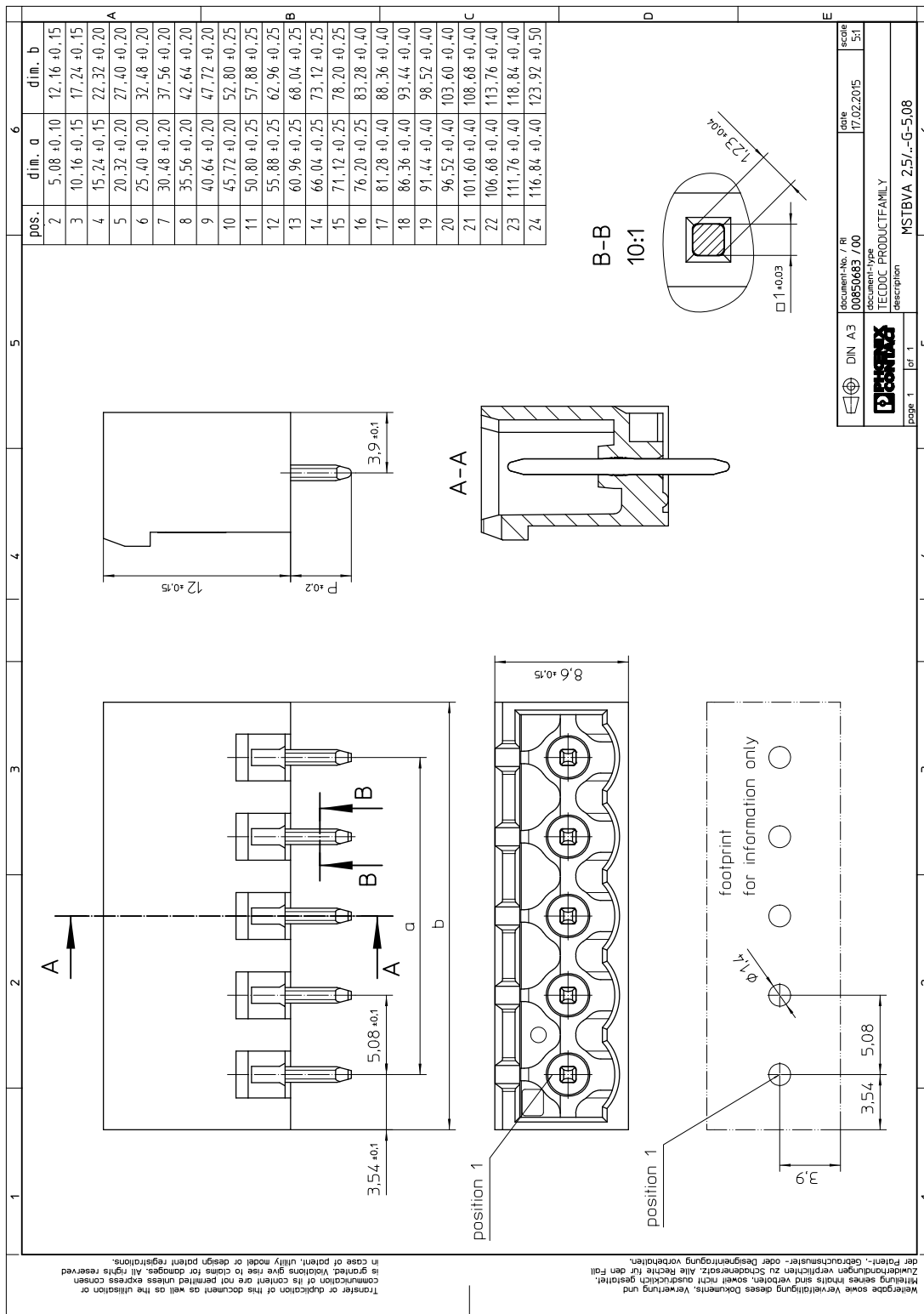
Length	8.6 mm
Width	118.84 mm
Height (without solder pin)	12 mm
Total height	15.9 mm
Solder pin [P]	3.9 mm
Dimension a	111.76 mm

**6.2 Dimensions for PCB design**

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

1755943 MSTBVA 2,5/23-G-5,08

7 Series drawing



**1755943 MSTBVA 2,5/23-G-5,08****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)

**1755943 MSTBVA 2,5/23-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.	30 N

**1755943 MSTBVA 2,5/23-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	2.4 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	630 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	3.2 mm

1755943 MSTBVA 2,5/23-G-5,08

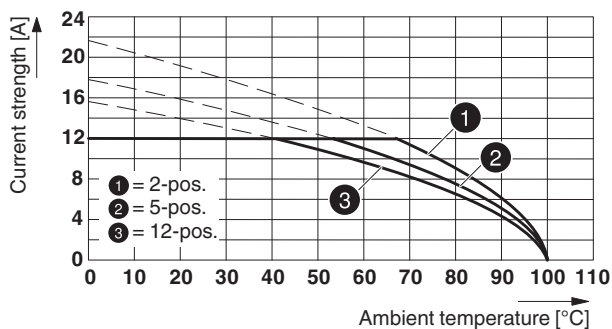
12 Current carrying capacity/derating curves

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	

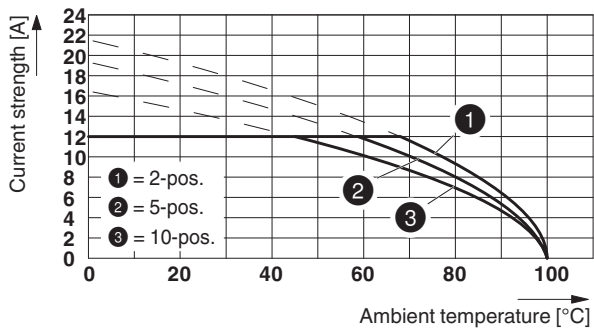
Type: MSTB 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

87454\_1000\_en

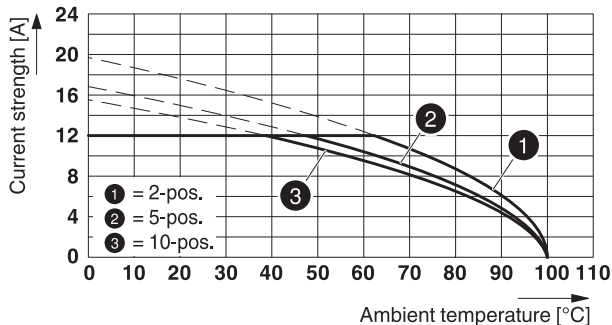
Type: FKCN 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08



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



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



2017-10-20

Product version 03

Document revision 0

**1755943 MSTBVA 2,5/23-G-5,08**

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

87462\_1000\_en


**1755943 MSTBVA 2,5/23-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	12 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	300 V		
Current	12 A	10 A		

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

**1755943 MSTBVA 2,5/23-G-5,08****16 Commercial Data**

Order No.	1755943
Type	MSTBVA 2,5/23-G-5,08
Pieces per package	50
Net weight	9.002 g
GTIN	4017918029524
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**17 corresponding plugs**

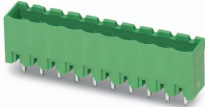


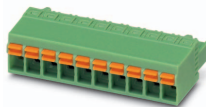
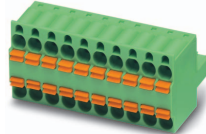
Order No.	Type
1757226	MSTB 2,5/23-ST-5,08
1769227	MSTBP 2,5/23-ST-5,08
1777497	FRONT-MSTB 2,5/23-ST-5,08
1792456	MVSTBR 2,5/23-ST-5,08
1792964	MVSTBW 2,5/23-ST-5,08
1809022	MSTBC 2,5/23-ST-5,08
1809718	MSTBC 2,5/23-STZ-5,08
1824337	MSTBU 2,5/23-STD-5,08
1824560	MSTBU 2,5/23-ST-5,08-FL
1850628	SMSTB 2,5/23-ST-5,08

**18 Accessories**

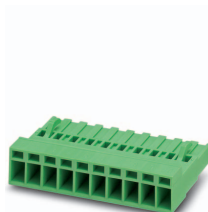
Description	Order No.	Type
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
	0804293	SK 5,08/3,8:FORTL.ZAHLEN
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL

## 1755943 MSTBVA 2,5/23-G-5,08

## 19 Combination tests

					
	<b>MSTBVA 2,5/...-G</b>	<b>MSTB 2,5/...-ST</b>	<b>MSTBT 2,5/...-ST</b>	<b>FKCN 2,5/...-ST</b>	<b>TFKC 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. 10 N / 9.5 N
Polarization when inserted Requirement >20 N		Test passed		Test passed	Test passed
Contact holder in insert Requirements >20 N		Test passed		Test passed	Test passed
<b>Durability tests (B)</b>					
Contact resistance R <sub>1</sub>		2.4 mΩ		2.2 mΩ	2 mΩ
Insertion/withdrawal cycles		25		25	25
Contact resistance R <sub>2</sub>		2.5 mΩ		2.3 mΩ	2.2 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)		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
Insulation resistance Requirements > 5 MΩ		> 0.2 TΩ		> 100 GΩ	10 <sup>12</sup> Ω
<b>Thermal tests (C)</b>					
Tested number of positions		24		12	10
Tested conductor cross section		2.5 mm <sup>2</sup>		2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Upper limiting temperature Requirements < 100°C		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
Test sequence 2: heat storage		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
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)		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
<b>Environmental and endurance tests (E)</b>					
Specification		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

**1755943 MSTBVA 2,5/23-G-5,08**



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

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

**MSTBC 2,5/...-STZ**

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

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

Specification

IEC 61984

IEC 61984

IEC 61984

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position

approx. 8 N / 6 N

approx. 8 N / 6 N

Polarization when inserted  
Requirement >20 N

Test passed

Test passed

Contact holder in insert  
Requirements >20 N

Test passed

Test passed

**Durability tests (B)**

Insertion/withdrawal cycles

25

25

Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu s)$

4.8 kV

4.8 kV

Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$

2.21 kV

2.21 kV

Insulation resistance  
Requirements > 5 M $\Omega$

> 6 T $\Omega$

> 0.2 T $\Omega$

**Thermal tests (C)**

Tested number of positions

10

24

Tested conductor cross section

2.5 mm<sup>2</sup>

2.5 mm<sup>2</sup>

Test current

12 A DC

Upper limiting temperature  
Requirements < 100°C

Test passed

Test passed

**Climatic tests (D)**

Test sequence 1: low temperature storage

-40 °C/2 h

-40 °C/2 h

Test sequence 2: heat storage

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

Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu s)$

4.8 kV

4.8 kV

Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$

2.21 kV

2.21 kV

**Environmental and endurance tests (E)**

Specification

IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20  
test finger

Finger safety with IP20  
test finger



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