

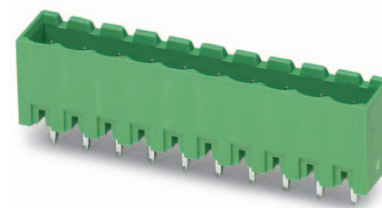
Data sheet

2017-10-20
Product version 04
Document revision 0

Order No.: 1755817

Type: MSTBVA 2,5/10-G-5,08

Header



1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 10 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • 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/1755817

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1755817 MSTBVA 2,5/10-G-5,08

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



1755817 MSTBVA 2,5/10-G-5,08**5 item properties**

Order No.	1755817
Type	MSTBVA 2,5/10-G-5,08
Type of contact	Male connector
Range of articles	MSTBVA 2,5/...-G
Pitch	5.08 mm
Number of positions	10
Locking	without
Mounting type	Wave soldering
Pin layout	Linear pinning

5.1 Material data

Material of metal parts		
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	
Insulating material data	Housing	
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	52.8 mm
Height (without solder pin)	12 mm
Total height	15.9 mm
Solder pin [P]	3.9 mm
Dimension a	45.72 mm

6.2 Dimensions for PCB design

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

7 Series drawing



1755817 MSTBVA 2,5/10-G-5,08**8 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	100

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)

1755817 MSTBVA 2,5/10-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

1755817 MSTBVA 2,5/10-G-5,08**11 Electrical tests****11.1 Electrical data**

Rated current / conductor cross section	12 A / 2.5 mm ²
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

1755817 MSTBVA 2,5/10-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

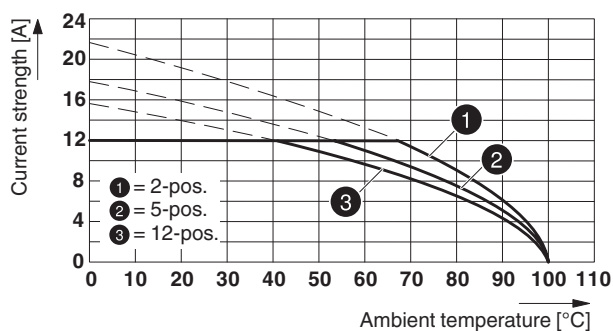
2.5 mm²

Note

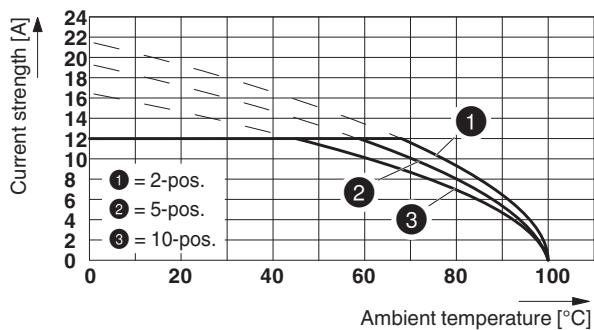
Type: MSTB 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08

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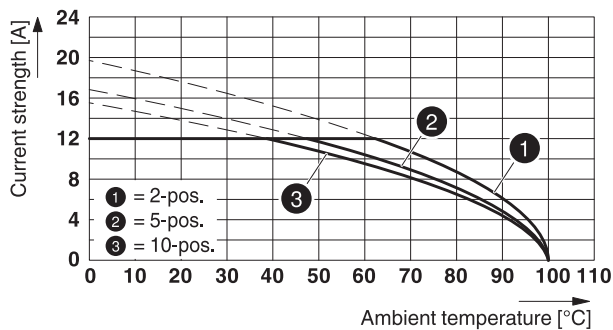
Type: FKCN 2,5/...-ST-5,08 with MSTBVA 2,5/...-G-5,08



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



1755817 MSTBVA 2,5/10-G-5,08

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

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1755817 MSTBVA 2,5/10-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 ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	12 A	10 A		

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

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

cULus Recognized 				
Use group	B	D		
mm ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	12 A	10 A		

EAC 				
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1755817 MSTBVA 2,5/10-G-5,08**16 Commercial Data**

Order No.	1755817
Type	MSTBVA 2,5/10-G-5,08
Pieces per package	100
Net weight	3.717 g
GTIN	4017918029395
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding plugs

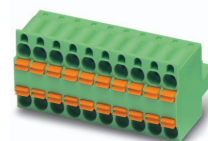
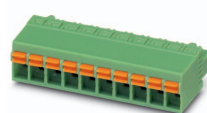
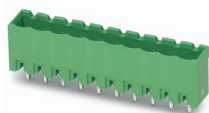
Order No.	Type
1719082	TVMSTB 2,5/10-ST-5,08
1754649	FKCN 2,5/10-ST-5,08
1757093	MSTB 2,5/10-ST-5,08
1764303	MSTB 2,5/10-STZ-5,08
1769094	MSTBP 2,5/10-ST-5,08
1777361	FRONT-MSTB 2,5/10-ST-5,08
1781069	MSTBT 2,5/10-ST-5,08
1792320	MVSTBR 2,5/10-ST-5,08
1792838	MVSTBW 2,5/10-ST-5,08
1808890	MSTBC 2,5/10-ST-5,08
1809585	MSTBC 2,5/10-STZ-5,08
1824201	MSTBU 2,5/10-STD-5,08
1824434	MSTBU 2,5/10-ST-5,08-FL
1826364	SMSTB 2,5/10-ST-5,08
1831391	MSTBVK 2,5/10-ST-5,08
1833894	UMSTBVK 2,5/10-ST-5,08
1853094	TMSTBP 2,5/10-ST-5,08
1873139	FKC 2,5/10-ST-5,08
1873731	FKCVW 2,5/10-ST-5,08
1874031	FKCVR 2,5/10-ST-5,08
1883336	QC 1/10-ST-5,08
1902194	FKCT 2,5/10-ST-5,08
1962684	TFKC 2,5/10-ST-5,08
1975150	FKCS 2,5/10-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

1755817 MSTBVA 2,5/10-G-5,08

19 Combination tests

**MSTBVA 2,5/10-G**

Specification

MSTB 2,5/10-G

IEC 61984

MSTBT 2,5/10-G

IEC 61984

FKCN 2,5/10-G

IEC 61984

TFKC 2,5/10-G

IEC 61984

Mechanical tests (A)

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

Durability tests (B)Contact resistance R_1

2.4 mΩ

2.2 mΩ

2 mΩ

Insertion/withdrawal cycles

25

25

25

Contact resistance R_2

2.5 mΩ

2.3 mΩ

2.2 mΩ

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

4.8 kV

4.8 kV

4.8 kV

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

2.21 kV

2.21 kV

2.21 kV

Insulation resistance
Requirements > 5 MΩ

> 0.2 TΩ

> 100 GΩ

 $10^{12} \Omega$ **Thermal tests (C)**

Tested number of positions

24

12

10

Tested conductor cross section

2.5 mm²2.5 mm²2.5 mm²Upper limiting temperature
Requirements < 100°C

Test passed

Test passed

Test passed

Climatic tests (D)

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 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycleRated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$

4.8 kV

4.8 kV

4.8 kV

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

2.21 kV

2.21 kV

2.21 kV

Environmental and endurance tests (E)

Specification

IEC 61984:2008-10

IEC 61984:2008-10

IEC 61984:2008-10

Degree of protection

Finger safety with IP20
test fingerFinger safety with IP20
test fingerFinger safety with IP20
test finger

1755817 MSTBVA 2,5/10-G-5,08**MSTBVA 2,5/...-G**

Specification

Mechanical tests (A)

Insertion/withdrawal force per position

Polarization when inserted
Requirement >20 NContact holder in insert
Requirements >20 N**Durability tests (B)**

Insertion/withdrawal cycles

Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ Insulation resistance
Requirements > 5 M Ω **Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature
Requirements < 100°C**Climatic tests (D)**

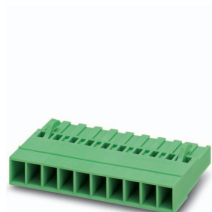
Test sequence 1: low temperature storage

Test sequence 2: heat storage

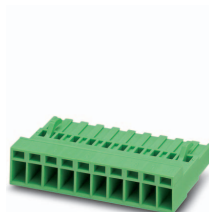
Test sequence 3: noxious gas storage
(ISO 6988)Rated impulse voltage at sea level
Voltage waveform $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage
Voltage waveform $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

Degree of protection

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

IEC 61984

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

IEC 61984

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

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

25

4.8 kV

2.21 kV

> 6 T Ω

10

2.5 mm²

12 A DC

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger**MSTBP 2,5/...-ST**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

25

4.8 kV

2.21 kV

> 0.2 T Ω

24

2.5 mm²

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger