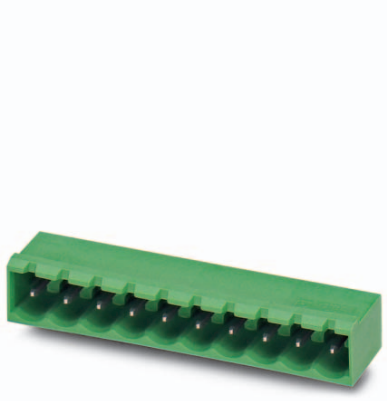
2017-05-16
Product version 06
Document revision 0

Data sheet

Order No.: 1757268

Type: MSTBA 2,5/ 4-G-5,08

Header



The figure shows a 10-position version of the product

1 Main features

- Number of positions 4
- Nominal cross section 2.5 mm²
- Color green
- Pitch 5.08 mm
- Mounting type Wave soldering
- Nominal current 12 A
- Nominal voltage 320 V
- Connection direction 0 °
- Type of packaging packed in cardboard

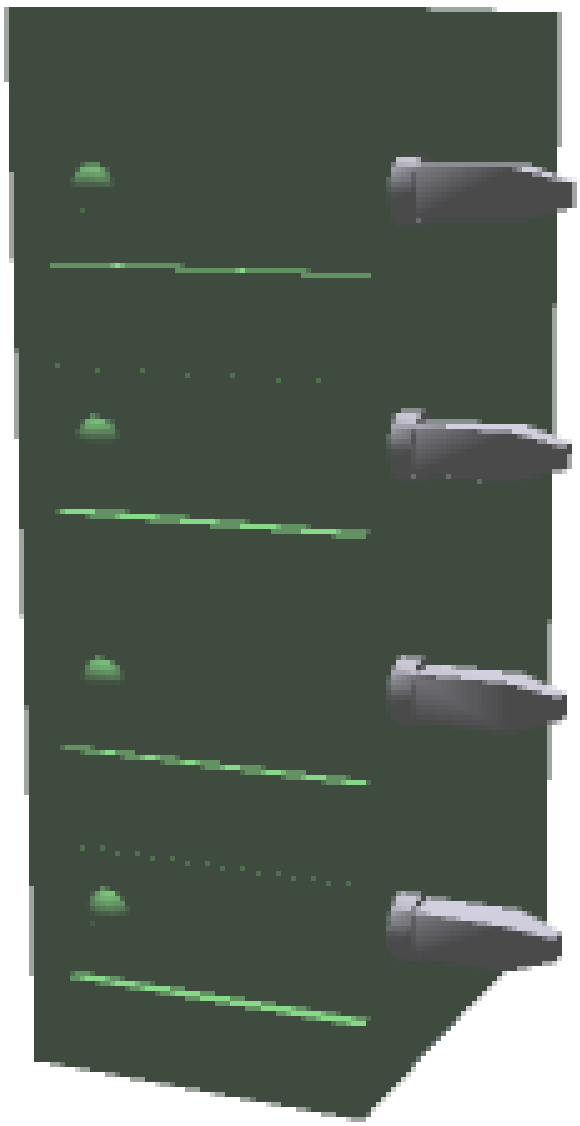
2 Your advantages

- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- Well-known mounting principle allows worldwide use
- Plug-in direction parallel to 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/1757268

3 Table of contents

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



5 item properties

Order No.	1757268
Type	MSTBA 2,5/ 4-G-5,08
Type of contact	Male connector
Range of articles	MSTBA 2,5/..-G
Pitch	5.08 mm
Number of positions	4
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

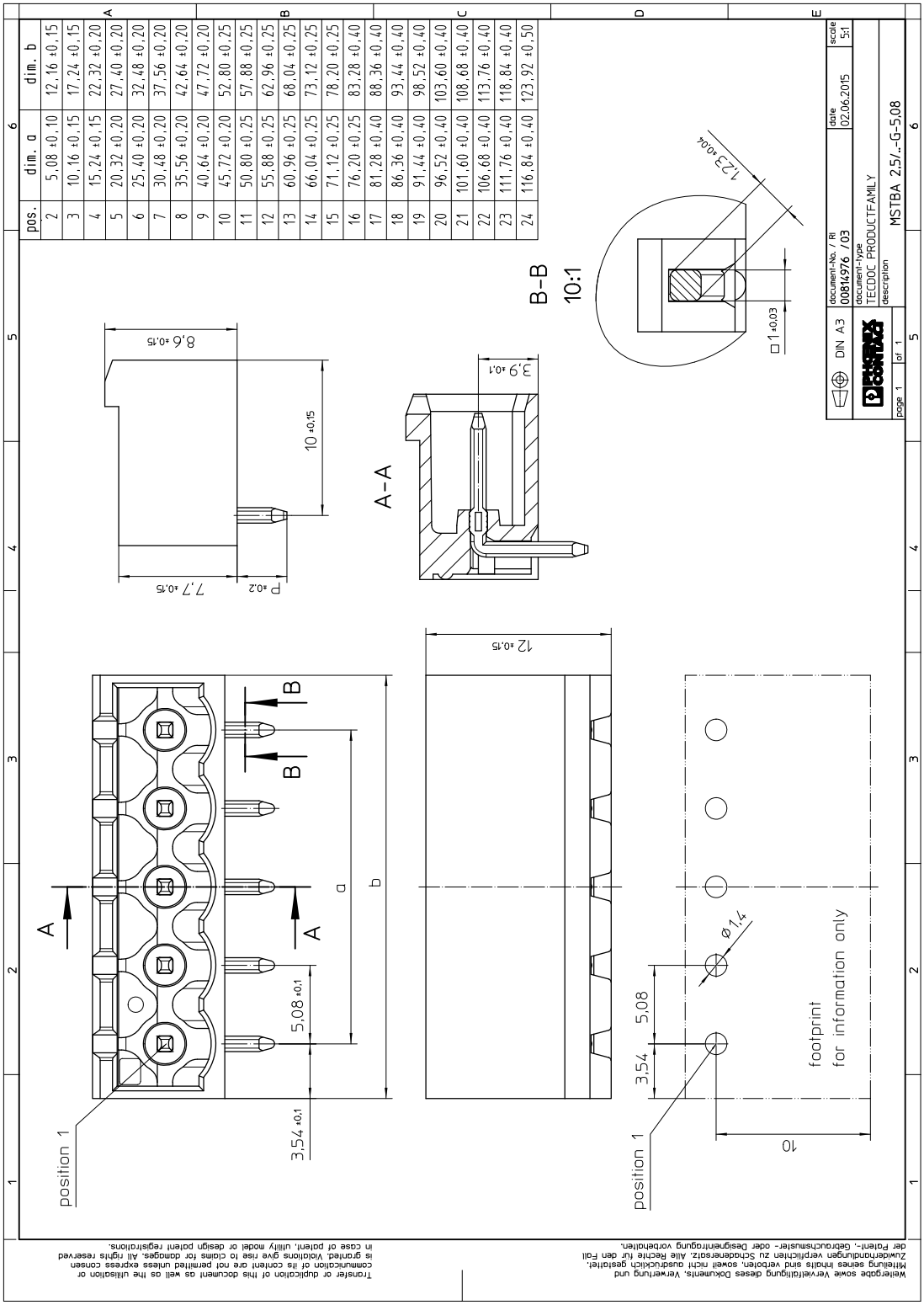
Length	12 mm
Width	22.24 mm
Height (without solder pin)	8.6 mm
Total height	12.1 mm
Solder pin [P]	3.5 mm
Dimension a	15.24 mm

6.2 Dimensions for PCB design

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

1757268 MSTBA 2,5/ 4-G-5,08

7 Series drawing



8 Packaging information

Type of packaging	packed in cardboard
Pieces per package	250

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)

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.	32 N

11 Electrical tests

11.1 Electrical data

Rated current / conductor cross section	12 A / 2.5 mm²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.1 mΩ
Degree of pollution	2

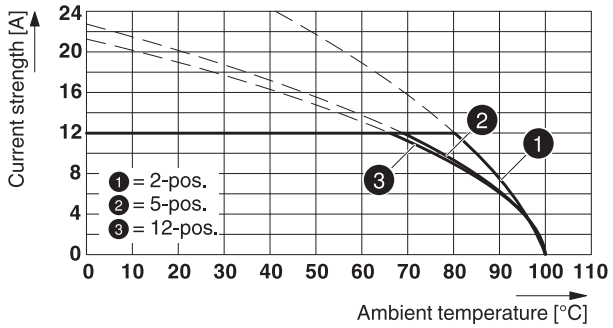
11.2 Air and creepage distances

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	4 mm	3 mm	3.2 mm

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



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

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

Type: MSTBP 2,5/...-ST-5,08 with MSTBW 2,5/...-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		
mm²/AWG/kcmil				
Voltage	300 V	300 V		
Current	15 A	10 A		
VDE Gutachten mit Fertigungsüberwachung				
mm²/AWG/kcmil				
Voltage	250 V			
Current	12 A			
IECEE CB Scheme				
mm²/AWG/kcmil				
Voltage	250 V			
Current	12 A			
cULus Recognized				
Use group	B	D		
mm²/AWG/kcmil				
Voltage	300 V	300 V		
Current	15 A	10 A		
EAC				

16 Commercial Data

Order No.	1757268
Type	MSTBA 2,5/ 4-G-5,08
Pieces per package	250
Net weight	1.5 g
GTIN	4017918029791
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

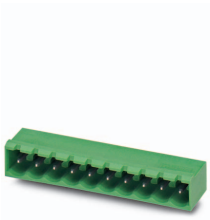
17 corresponding plugs

Order No.	Type
1719024	TVMSTB 2,5/ 4-ST-5,08
1754584	FKCN 2,5/ 4-ST-5,08
1757035	MSTB 2,5/ 4-ST-5,08
1769036	MSTBP 2,5/ 4-ST-5,08
1776155	MSTB 2,5/ 4-STZ-5,08
1777303	FRONT-MSTB 2,5/ 4-ST-5,08
1780002	MSTBT 2,5/ 4-ST-5,08
1792265	MVSTBR 2,5/ 4-ST-5,08
1792773	MVSTBW 2,5/ 4-ST-5,08
1808832	MSTBC 2,5/ 4-ST-5,08
1809527	MSTBC 2,5/ 4-STZ-5,08
1824146	MSTBU 2,5/ 4-STD-5,08
1824379	MSTBU 2,5/ 4-ST-5,08-FL
1826306	SMSTB 2,5/ 4-ST-5,08
1853036	TMSTBP 2,5/ 4-ST-5,08
1873074	FKC 2,5/ 4-ST-5,08
1873676	FKCVW 2,5/ 4-ST-5,08
1873977	FKCVR 2,5/ 4-ST-5,08
1883271	QC 1/ 4-ST-5,08
1902136	FKCT 2,5/ 4-ST-5,08
1962626	TFKC 2,5/ 4-ST-5,08
1975095	FKCS 2,5/ 4-ST-5,08

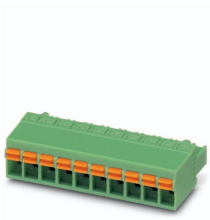
18 Accessories

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

19 Combination tests



MSTBA 2,5/..-G



FKCN 2,5/..-ST

FRONT-MSTB 2,5/ ..-ST

TMSTBP 2,5/..-ST

MSTBC 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			
Polarization when inserted Requirement > 20 N	Test passed			
Contact holder in insert Requirements > 20 N	Test passed			
Endurance tests (B)				
Contact resistance R_1	1.1 mΩ			
Insertion/withdrawal cycles	25			
Contact resistance R_2	1.2 mΩ			
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV			
Insulation resistance Requirements > 5 MΩ	> 0.1 TΩ			
Thermal tests (C)				
Tested number of positions	12			
Tested conductor cross section	2.5 mm^2			
Test current	12 A			
Upper limiting temperature Requirements < 100°C	Test passed			
Climatic tests (D)				
Test sequence 1: low temperature storage	-40 °C/2 h			
Test sequence 2: heat storage	100 °C/168 h			
Test sequence 3: noxious gas storage (ISO 6988)	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle			
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 µs)	4.8 kV			
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV			
Environmental and endurance tests (E)				
Specification	IEC 61984:2008-10			
Degree of protection	Finger safety with IP20 test finger			

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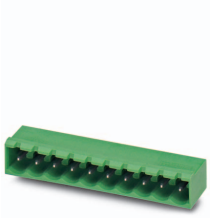


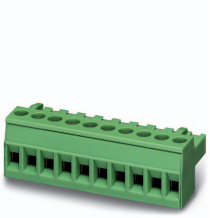


	MSTBA 2,5/..-G	MSTBC 2,5/..-STZ	MSTBP 2,5/..-ST	MSTBT 2,5/..-ST	SMSTB 2,5/..-ST
Specification	IEC 61984		IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)					
Insertion/withdrawal force per position			approx. 8 N / 6 N	approx. 8 N / 6 N	approx. 8 N / 6 N
Polarization when inserted Requirement > 20 N			Test passed	Test passed	Test passed
Contact holder in insert Requirements > 20 N			Test passed	Test passed	Test passed
Endurance tests (B)					
Insertion/withdrawal cycles			25	25	25
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	> 0.2 TΩ	> 0.2 TΩ
Thermal tests (C)					
Tested number of positions			24	18	24
Tested conductor cross section			2.5 mm^2	2.5 mm^2	2.5 mm^2
Test current					12 A
Upper 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 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	0.2 dm^3 SO_2 on 300 dm^3/ 40 °C/1 cycle	0.2 dm^3 SO_2 on 300 dm^3/ 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
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 finger	Finger safety with IP20 test finger	Finger safety with IP20 test finger