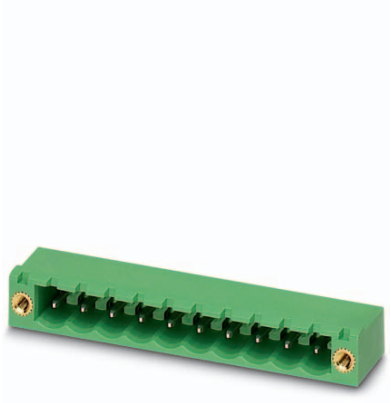
2017-09-28
Product version 06
Document revision 0

Data sheet

Order No.: 1776757

Type: MSTB 2,5/ 8-GF

Header



The figure shows a 10-position version of the product

1 Main features



- No. of pos. 8
- Nominal cross section 2.5 mm²
- Color green
- Pitch 5 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
- Easy PCB replacement thanks to plug-in modules
- Well-known mounting principle allows worldwide use
- Plug-in direction parallel to the PCB
- Screwable flange for superior mechanical stability

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1776757

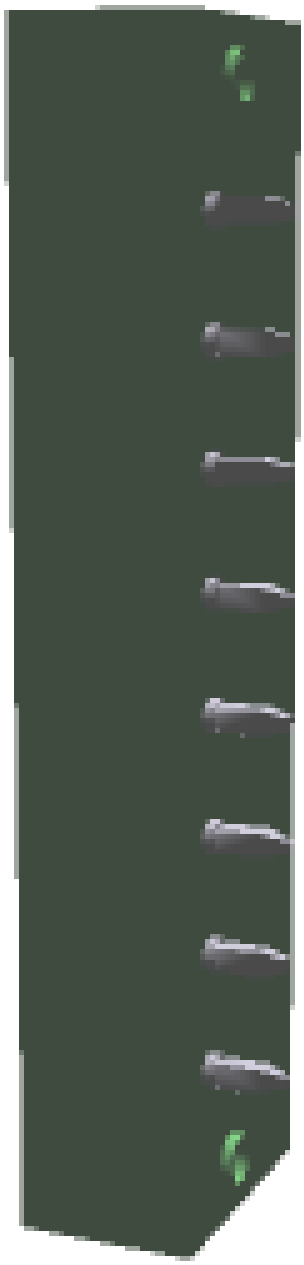
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4 3D model in PDF can be activated (Acrobat Reader only)



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5 item properties

Order No.	1776757
Type	MSTB 2,5/ 8-GF
Type of contact	Male connector
Range of articles	MSTB 2,5/..-GF
Pitch	5 mm
Number of positions	8
Drive form screw head	Slotted
Locking	Threaded flange
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 1.3 µm ... 3 µm , Sn 3 µm ... 5 µm
Soldering area surface	Ni 1.3 µm ... 3 µm , Sn 3 µm ... 5 µm
Surface characteristics	Tin-plated

Insulating material data	Housing
Insulating material	PBT
CTI according to IEC 60112	225
Flammability rating according to UL 94	V0
Color	green (6021)

6 Dimensions

6.1 Dimensions for the product

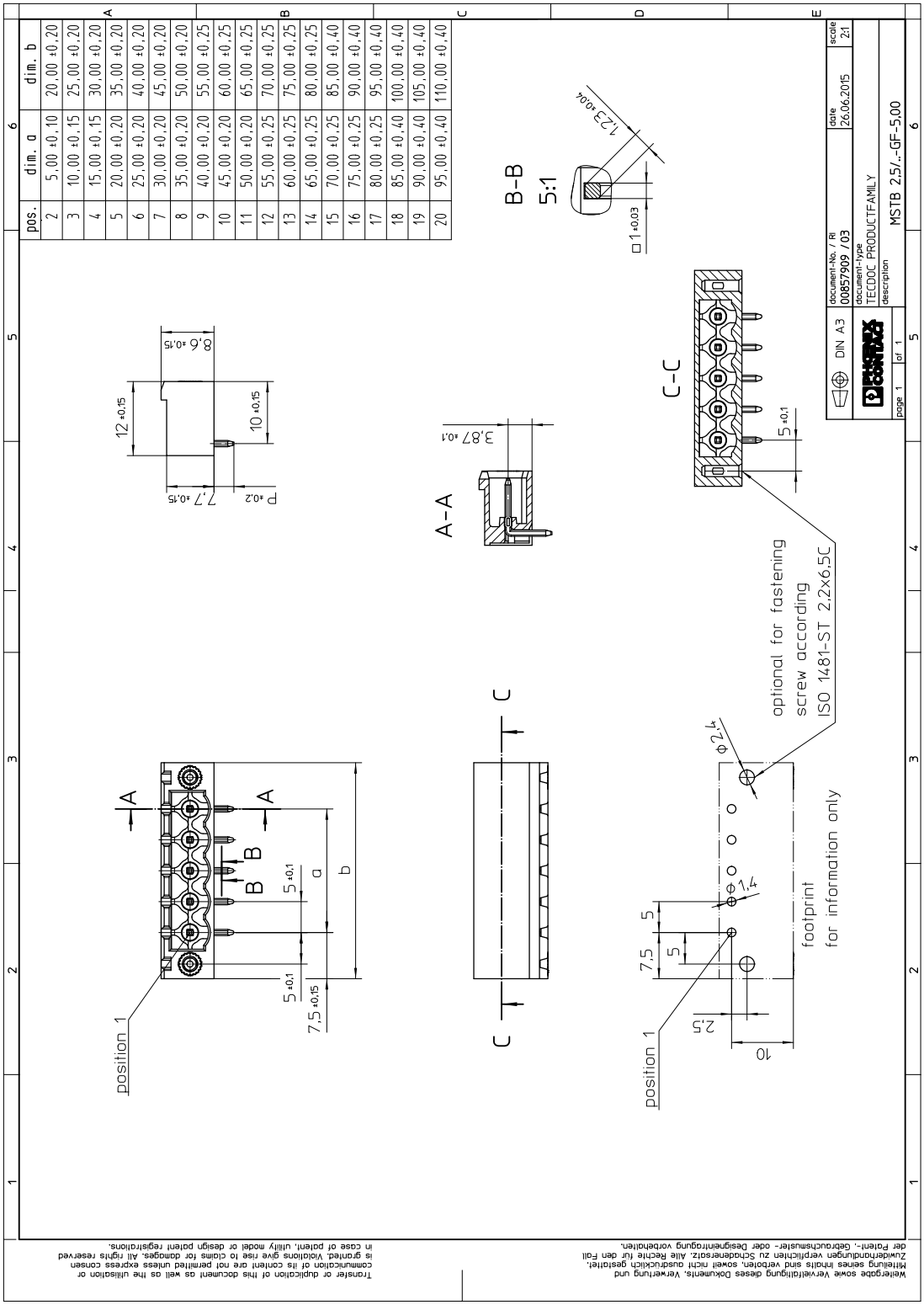
Length	12 mm
Width	50 mm
Height (without solder pin)	8.6 mm
Total height	12.1 mm
Solder pin [P]	3.5 mm
Dimension a	35 mm

6.2 Dimensions for PCB design

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

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7 Series drawing



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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)

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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.	38 N

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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	1.4 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	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 225		
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	3.2 mm	4 mm

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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/...-STF with MSTB 2,5/...-GF

86104_1000_en

Type: FKCT 2,5/...-STF with MSTB 2,5/...-GF

87314_1000_en

Type: MVSTB(R/W) 2,5/...-STF with MSTB 2,5/...-GF

86232_1000_en

Type: SMSTB 2,5/...-STF with MSTBVA 2,5/...-GF

86271_1000_en

Type: MSTBT 2,5/...-STF with MSTB 2,5/...-GF

87026_1000_en

Type: FRONT-MSTB 2,5/..-STF with MSTB 2,5/...-GF

88585_1000_en

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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	10 A	10 A		

VDE Gutachten mit Fertigungsüberwachung				
mm²/AWG/kcmil				
Voltage	250 V			
Current	12 A			

RS

IECEE CB Scheme				
mm²/AWG/kcmil				
Voltage	250 V			
Current	12 A			

cULus Recognized				
Use group	B	D		
mm²/AWG/kcmil				
Voltage	300 V	150 V		
Current	15 A	15 A		

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1776757 MSTB 2,5/ 8-GF

EAC

DNV GL

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16 Commercial Data

Order No.	1776757
Type	MSTB 2,5/ 8-GF
Pieces per package	100
Net weight	4.968 g
GTIN	4017918038922
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

17 corresponding plugs

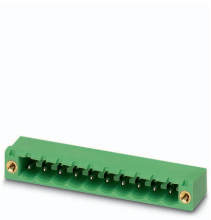
Order No.	Type
1718177	QC 1,5/ 8-STF
1733026	FKCN 2,5/ 8-STF
1779709	FRONT-MSTB 2,5/ 8-STF
1786899	MSTB 2,5/ 8-STF
1835342	MVSTBW 2,5/ 8-STF
1835533	MVSTBR 2,5/ 8-STF
1909469	FKCT 2,5/ 8-STF
1909948	FKCVR 2,5/ 8-STF
1910267	FKCVW 2,5/ 8-STF
1910584	FKC 2,5/ 8-STF
1970935	SMSTB 2,5/ 8-STF
1974986	FKCS 2,5/ 8-STF

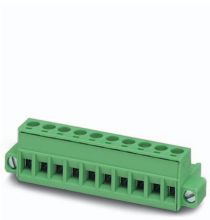
18 Accessories

Description	Order No.	Type
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL
	0804183	SK 5/3,8:FORTL.ZAHLEN
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB

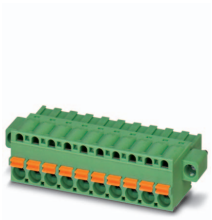
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19 Combination tests







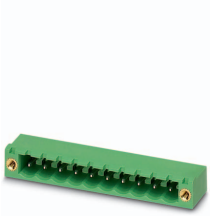




	MSTB 2,5/..-GF	**MSTB 2,5/..-STF**	**FKC 2,5/..-STF**	**FKCT 2,5/..-STF**	**MVSTBR 2,5/..-STF**
Specification		IEC 61984		IEC 61984	IEC 61984
Mechanical tests (A)					
Insertion/withdrawal force per position		approx. 8 N / 6 N		approx. 8 N / 6 N	approx. 8 N / 6 N
Polarization when inserted Requirement >20 N		Test passed		Test passed	Test passed
Contact holder in insert Requirements >20 N		Test passed		Test passed	Test passed
Durability tests (B)					
Contact resistance R_1		1.4 mΩ		1 mΩ	2.5 mΩ
Insertion/withdrawal cycles		25		25	25
Contact resistance R_2		1.4 mΩ		1.1 mΩ	2.5 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		> 0.5 TΩ		> 0.2 TΩ	> 0.5 TΩ
Thermal tests (C)					
Tested number of positions		20		18	20
Tested conductor cross section		2.5 mm²		2.5 mm²	2.5 mm²
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

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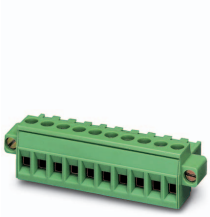
1776757 MSTB 2,5/ 8-GF



MSTB 2,5/..-GF



SMSTB 2,5/..-STF



MSTBT 2,5/..-STF



FRONT-MSTB 2,5/ ..-STF

Specification	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	
Durability tests (B)				
Contact resistance R_1	1.8 mΩ	1.3 mΩ	1.5 mΩ	
Insertion/withdrawal cycles	25	25	25	
Contact resistance R_2	1.9 mΩ	1.3 mΩ	1.6 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	> 0.1 TΩ	> 30 TΩ	
Thermal tests (C)				
Tested number of positions	20	18	24	
Tested conductor cross section	2.5 mm²	2.5 mm²	2.5 mm²	
Test current	12 A		12 A DC	
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 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle	0.2 dm³ SO_2 on 300 dm³/ 40 °C/1 cycle	0.2 dm³ SO_2 on 300 dm³/ 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	

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