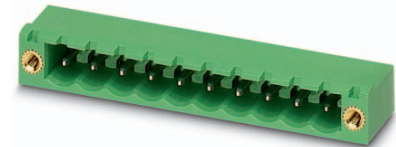


Order No.: 1776757

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 current      | 12 A                |
| • Nominal cross section | 2.5 mm <sup>2</sup> | • Nominal voltage      | 320 V               |
| • Color                 | green               | • Connection direction | 0 °                 |
| • Pitch                 | 5 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
- ✓ Screwable flange for superior mechanical stability



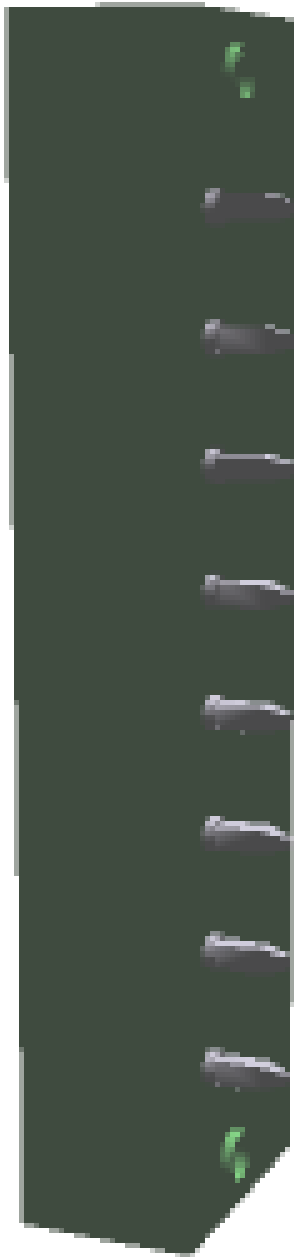
Make sure you always use the latest documentation.  
It can be downloaded at: [phoenixcontact.net/product/1776757](https://phoenixcontact.net/product/1776757)

**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 .....	10
	13.1 Vibration test .....	10
14	Classification for connectors.....	10
15	Approvals .....	10
16	Commercial Data.....	12
17	corresponding plugs .....	12
18	Accessories.....	12
19	Combination tests.....	13

1776757 MSTB 2,5/ 8-GF

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



**1776757 MSTB 2,5/ 8-GF****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**

<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 1.3 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
<b>Insulating material data</b>	
Insulating material	Housing 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**

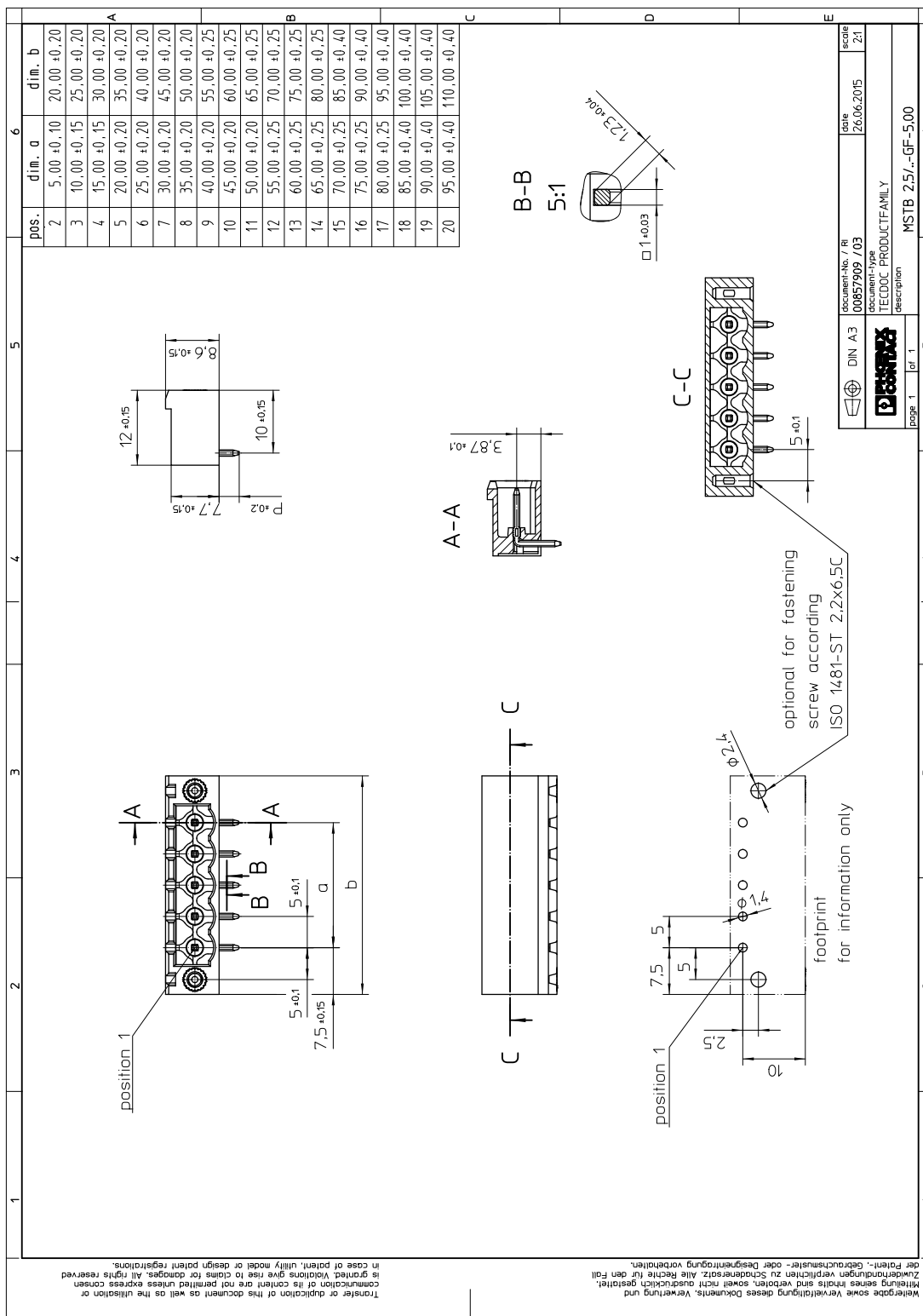
Length	12 mm
Width	50 mm
Height (without solder pin)	8.6 mm
Total height	12.1 mm
Solder pin [P]	3.5 mm
Dimension a	35 mm

**6.2 Dimensions for PCB design**

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

1776757 MSTB 2,5/ 8-GF

7 Series drawing



DIN A3	document-No. / Ri 00857909 / 03	date 26.06.2015	scale 1:2:1
	document-type TECDOC PRODUCTFAMILY	description MSTB 2,5/...GF-5,00	
page 1	of 1	6	

**1776757 MSTB 2,5/ 8-GF****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)

**1776757 MSTB 2,5/ 8-GF****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

**1776757 MSTB 2,5/ 8-GF****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	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



**1776757 MSTB 2,5/ 8-GF****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/...-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


**1776757 MSTB 2,5/ 8-GF****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			

RS 				
--	--	--	--	--

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		

**1776757 MSTB 2,5/ 8-GF**

---

EAC ERI

DNV GL

**1776757 MSTB 2,5/ 8-GF****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

## 1776757 MSTB 2,5/ 8-GF

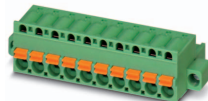
## 19 Combination tests



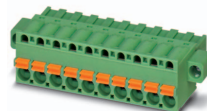
MSTB 2,5/..-GF



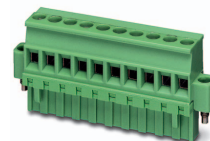
MSTB 2,5/..-STF



FKC 2,5/..-STF



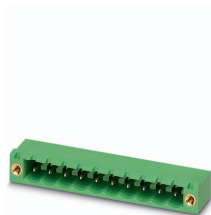
FKCT 2,5/..-STF



MVSTBR 2,5/..-STF

Specification	IEC 61984		IEC 61984	IEC 61984
<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
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 $R_1$	1.4 m $\Omega$		1 m $\Omega$	2.5 m $\Omega$
Insertion/withdrawal cycles	25		25	25
Contact resistance $R_2$	1.4 m $\Omega$		1.1 m $\Omega$	2.5 m $\Omega$
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 M $\Omega$	> 0.5 T $\Omega$		> 0.2 T $\Omega$	> 0.5 T $\Omega$
<b>Thermal tests (C)</b>				
Tested number of positions	20		18	20
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 $\geq (1.2/50 \mu s)$	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
<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

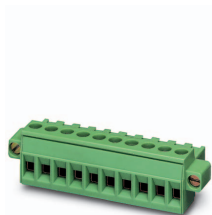
## 1776757 MSTB 2,5/ 8-GF



MSTB 2,5/..-GF



SMSTB 2,5/..-STF



MSTBT 2,5/..-STF

FRONT-MSTB 2,5/  
..-STF

Specification	IEC 61984	IEC 61984	IEC 61984
<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
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>	1.8 mΩ	1.3 mΩ	1.5 mΩ
Insertion/withdrawal cycles	25	25	25
Contact resistance R <sub>2</sub>	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
<b>Thermal tests (C)</b>			
Tested number of positions	20	18	24
Tested conductor cross section	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
Test current	12 A		12 A DC
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