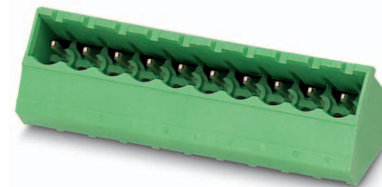


Order No.: 1769803

Type: SMSTBA 2,5/ 2-G

Header



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • Number of positions | 2 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • Nominal voltage | 320 V |
| • Color | green | • Connection direction | 45 ° |
| • 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
- ✓ Well-known mounting principle allows worldwide use
- ✓ Angled connection enables multi-row arrangement on the PCB

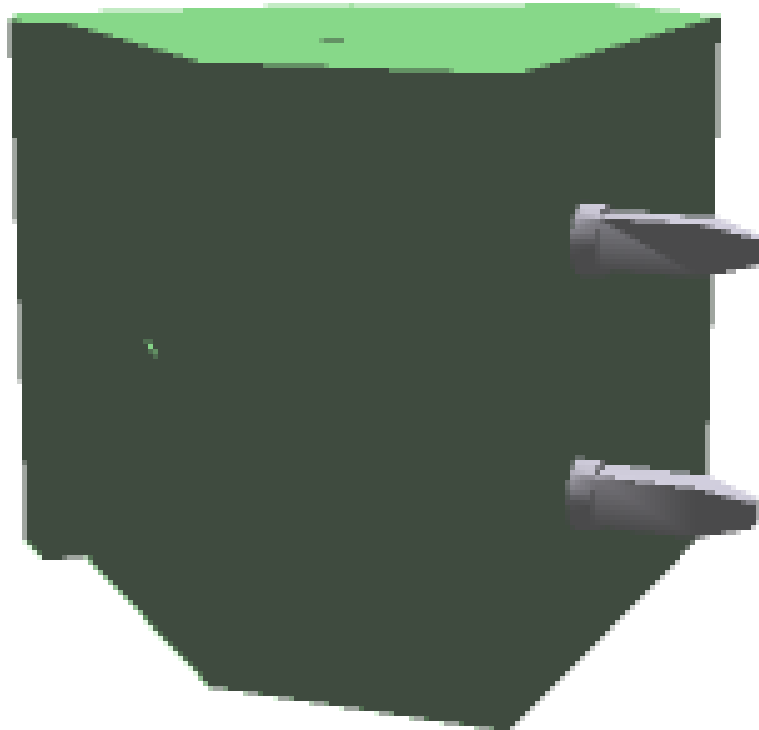


Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1769803

1769803 SMSTBA 2,5/ 2-G**3 Table of contents**

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



1769803 SMSTBA 2,5/ 2-G**5 Item properties**

Order No.	1769803
Type	SMSTBA 2,5/ 2-G
Type of contact	Male connector
Range of articles	SMSTBA 2,5/..-G
Pitch	5 mm
Number of positions	2
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 2 µm ... 3 µm , Sn 5 µm ... 7 µm
Soldering area surface	Ni 2 µm ... 3 µm , Sn 5 µm ... 7 µm
Surface characteristics	Tin-plated
Insulating material data	
Insulating material	PA
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Color	green (6021)

6 Dimensions**6.1 Dimensions for the product**

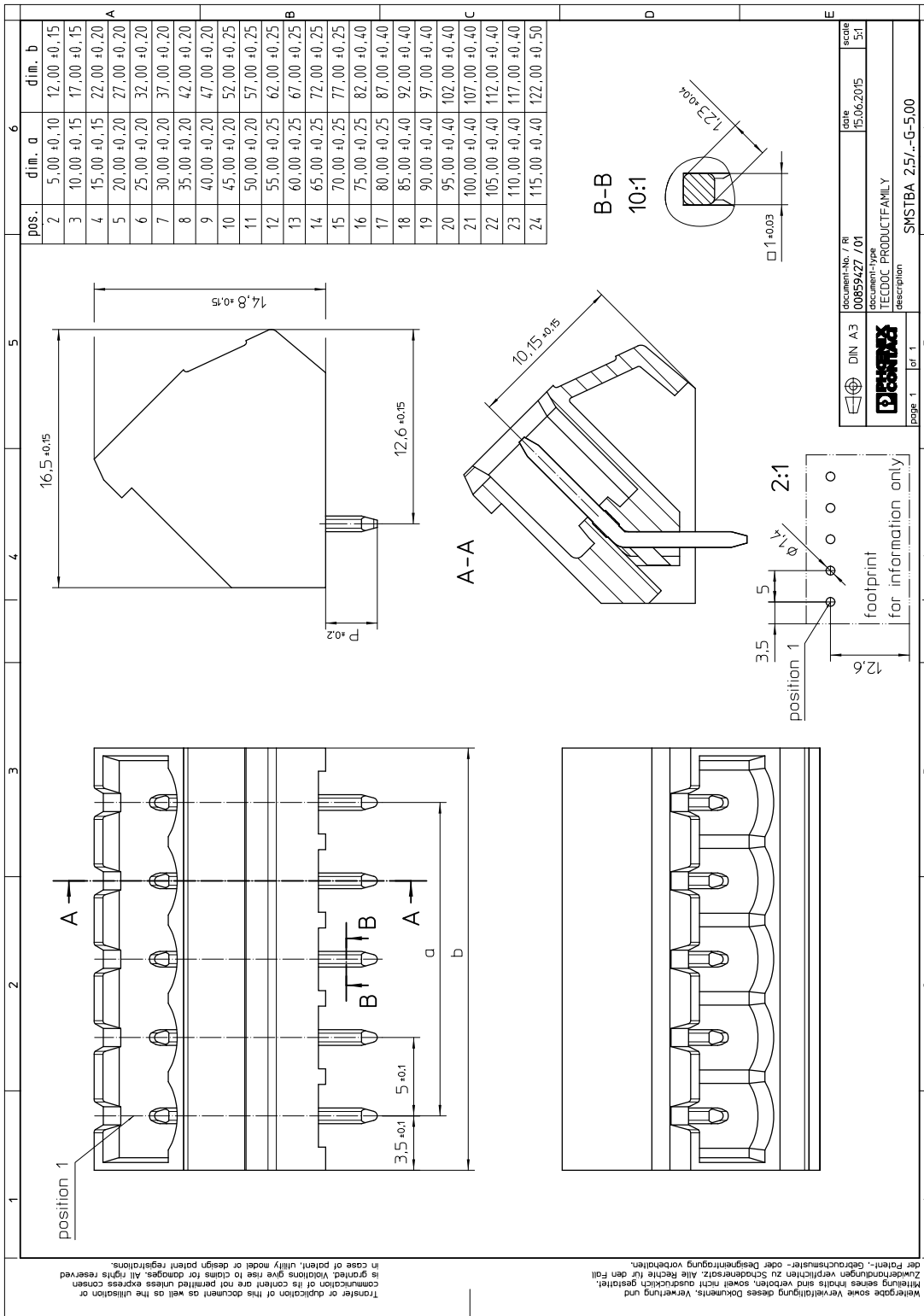
Length	16.5 mm
Width	12.00 mm
Height (without solder pin)	14.8 mm
Total height	18.3 mm
Solder pin [P]	3.5 mm
Dimension a	5.00 mm

6.2 Dimensions for PCB design

Hole diameter	1.4 mm
Pin dimensions	1 x 1 mm

1769803 SMSTBA 2,5/ 2-G

7 Series drawing



1769803 SMSTBA 2,5/ 2-G**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)

1769803 SMSTBA 2,5/ 2-G**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.	11 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.	37.3 N

1769803 SMSTBA 2,5/ 2-G**11 Electrical tests****11.1 Electrical data**

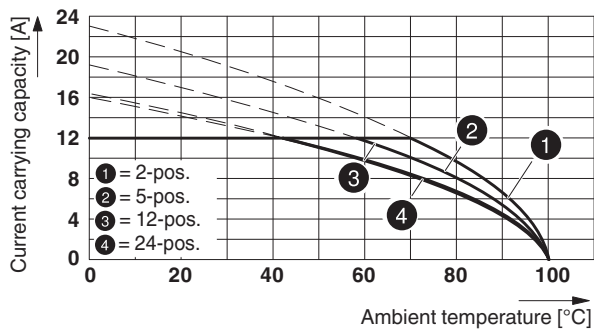
Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	2.3 mΩ
Degree of pollution	2

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 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

1769803 SMSTBA 2,5/ 2-G**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 ²
Note	

Type: SMSTB 2,5/...-ST with SMSTBA 2,5/...-G**Type: FKCS 2,5/...-ST with SMSTBA 2,5/...-G****Type: MSTBT 2,5/...-ST with SMSTBA 2,5/...-G****Type: MSTB 2,5/...-ST with SMSTBA 2,5/...-G**


86580_2000_en


Type: FRONT-MSTB 2,5/...-ST with SMSTBA 2,5/...-G**Type: MVSTB(R/W) 2,5/...-ST with SMSTBA 2,5/...-G**


1769803 SMSTBA 2,5/ 2-G**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 Approvals

CSA 				
Use group	B	D		
mm ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	15 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			

EAC 				

cULus Recognized 				
Use group	B	D		
mm ² /AWG/kcmil				
Voltage	300 V	300 V		
Current	15 A	10 A		

1769803 SMSTBA 2,5/ 2-G**15 Commercial Data**

Order No.	1769803
Type	SMSTBA 2,5/ 2-G
Pieces per package	100
Net weight	1.491 g
GTIN	4017918035020
Customs tariff number	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

16 Corresponding plugs

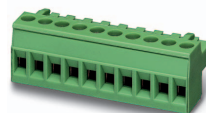
Order No.	Type
1713839	TVFKC 1,5/ 2-ST
1715921	TVFKCL 1,5/ 2-ST
1717961	QC 1,5/ 2-ST
1732742	FKCN 2,5/ 2-ST
1754449	MSTB 2,5/ 2-ST
1765771	MSTBP 2,5/ 2-ST
1768765	SMSTB 2,5/ 2-ST
1779411	FRONT-MSTB 2,5/ 2-ST
1779835	MSTBT 2,5/ 2-ST
1792016	MVSTBR 2,5/ 2-ST
1792524	MVSTBW 2,5/ 2-ST
1909210	FKCT 2,5/ 2-ST
1909715	FKCVR 2,5/ 2-ST
1910034	FKCVW 2,5/ 2-ST
1910351	FKC 2,5/ 2-ST
1921670	QC 1/ 2-ST-BUS
1974737	FKCS 2,5/ 2-ST

17 Accessories

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

1769803 SMSTBA 2,5/ 2-G

18 Combination tests

**SMSTBA 2,5/..-G****SMSTB 2,5/..-ST****FKCS 2,5/..-ST****MSTBT 2,5/..-ST****MSTB 2,5/..-ST**

Specification	IEC 61984	IEC 61984	IEC 61984	IEC 61984
Mechanical tests (A)				
Insertion/withdrawal force per position	approx. 11 N / 6 N	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	Test passed
Contact holder in insert Requirements > 20 N	Test passed	Test passed	Test passed	Test passed
Endurance tests (B)				
Contact resistance R ₁	2.3 mΩ	1.1 mΩ	1.3 mΩ	1.3 mΩ
Insertion/withdrawal cycles	25	25	25	25
Contact resistance R ₂	2.4 mΩ	1.2 mΩ	1.3 mΩ	1.4 mΩ
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	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	2.21 kV
Insulation resistance Requirements > 5 MΩ	64 TΩ	> 0.5 TΩ	> 0.7 TΩ	> 0.1 TΩ
Thermal tests (C)				
Tested number of positions	24	18	18	24
Tested conductor cross section	2.5 mm ²	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	Test passed
Climatic tests (D)				
Test sequence 1: low temperature storage	-40 °C/2 h	-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	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	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	4.8 kV
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	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	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	Finger safety with IP20 test finger

1769803 SMSTBA 2,5/ 2-G



SMSTBA 2,5/..-G

FRONT-MSTB 2,5/
..-ST

MVSTBR 2,5/..-ST

Specification	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		
Endurance tests (B)				
Contact resistance R ₁	1.6 mΩ	2.5 mΩ		
Insertion/withdrawal cycles	25	25		
Contact resistance R ₂	1.6 mΩ	2.5 mΩ		
Rated impulse voltage at sea level Voltage waveform ≥ (1.2/50 μs)	4.8 kV	4.8 kV		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 Hz)	2.21 kV	2.21 kV		
Insulation resistance Requirements > 5 MΩ	> 0.2 TΩ	> 0.3 TΩ		
Thermal tests (C)				
Tested number of positions	24	24		
Tested conductor cross section	2.5 mm ²	2.5 mm ²		
Test current				
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 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		
Power-frequency withstand voltage Voltage waveform ≥ (50/60 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		