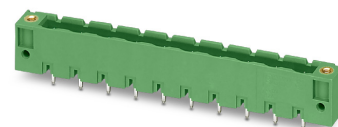


Item No.: 1829167

Type: GMSTBV 2,5/ 3-GF-7,62

PCB headers



The figure shows a 10-position version of the product

1 Main features



- | | | | |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos. | 3 | • Nominal current | 12 A |
| • Nominal cross section | 2.5 mm ² | • Nominal voltage | 630 V |
| • Color | green (6021) | • Connection direction | 90 ° |
| • Pitch | 7.62 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
- ✓ Larger pitch for increased voltage requirements
- ✓ Vertical connection enables multi-row arrangement on the PCB



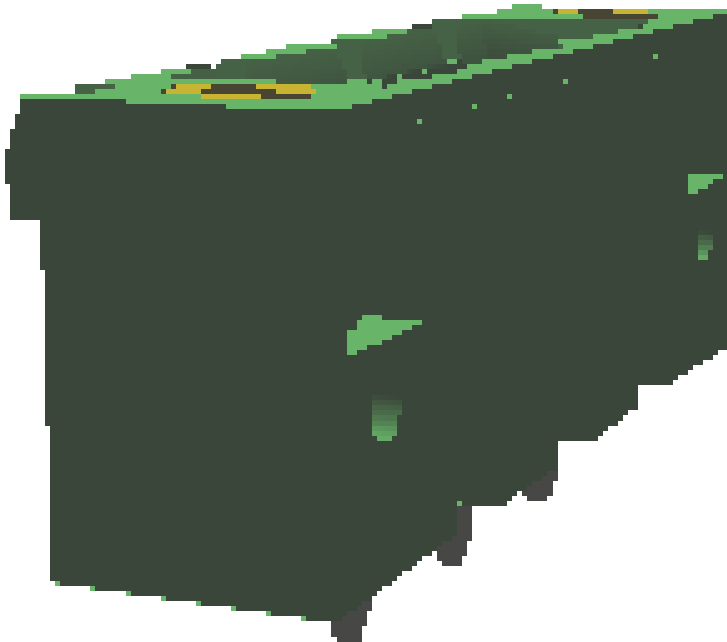
Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/1829167

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1829167 GMSTBV 2,5/ 3-GF-7,62

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



1829167 GMSTBV 2,5/ 3-GF-7,62**5 General Technical Data****5.1 item properties**

Item no.	1829167
Type	GMSTBV 2,5/ 3-GF-7,62
Connector system	CLASSIC COMBICON
Product type	PCB headers
Type of contact	Male connector
Range of articles	GMSTBV 2,5/...-GF
Pitch	7.62 mm
Number of positions	3
Number of rows	1
Number of connections	3
Number of potentials	3
Mounting type	Wave soldering
Connection direction of the connector to the PCB	90 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Standard

1829167 GMSTBV 2,5/ 3-GF-7,62**6 Mounting****6.1 Flange mounting**

Type of locking	Screw locking
Mounting flange	Threaded flange
Torque	0.3 Nm

6.2 Mounting the PCB

Screw	Sheet metal screw ISO 1481-ST 2,2x6,5 C or ISO 7049-ST 2,2x6,5 C
Torque	0.3 Nm

7 Material properties**7.1 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	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1.3 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated
Insulating material data	Housing
Color	green (6021)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
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

1829167 GMSTBV 2,5/ 3-GF-7,62**8 Dimensions****8.1 Dimensions for the product**

Length	8.6 mm
Width	33.44 mm
Height (without solder pin)	12 mm
Total height	15.9 mm
Solder pin [P]	3.9 mm

1829167 GMSTBV 2,5/ 3-GF-7,62**10 Product notes****10.1 General information**

Notes on operation

In accordance with IEC 61984, COMBICON connectors have no switching power (COC). During designated use, they must not be plugged in or disconnected when carrying voltage or under load.

11 Application**12 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50

12.1 Temperature limit values

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)

1829167 GMSTBV 2,5/ 3-GF-7,62**13 Mechanical tests****13.1 Visual examination**

Specification	IEC 61984:2008-10
Visual examination	Test passed
Specification	IEC 60512-1-1:2002-02

13.2 Dimensional test

Dimensional test	Test passed
Specification	IEC 60512-1-2:2002-02

13.3 Resistance of marking

Resistance of marking	Test passed
Specification	IEC 60068-2-70:1995-12

13.4 Polarization and coding

Polarization and coding	Test passed
Specification	IEC 60512-13-5:2006-02
Test force	20 N

13.5 Contact retention in insert

Contact holder in insert Requirements >20 N	Test passed
Specification	IEC 60512-15-1:2008-05

1829167 GMSTBV 2,5/ 3-GF-7,62**14 Insertion and withdrawal forces**

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

1829167 GMSTBV 2,5/ 3-GF-7,62**15 Electrical tests**

Rated current / conductor cross section	12 A / 2.5 mm ²
Rated insulation voltage (III/2)	630 V
Rated surge voltage (III/2)	6 kV
Contact resistance	2.4 mΩ
Degree of pollution	2

15.1 Air and creepage distances

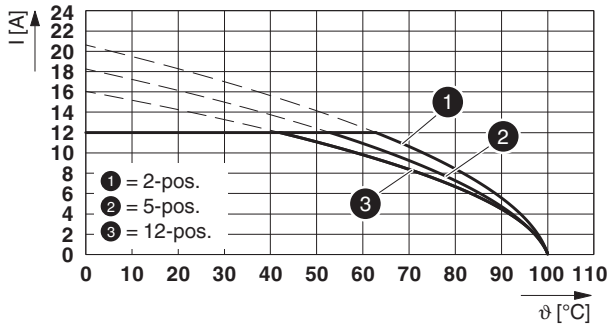
Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	I		
Comparative tracking index (IEC 60112:2003-01)	CTI 600		
Rated insulation voltage	400 V	630 V	630 V
Rated surge voltage	6 kV	6 kV	6 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	5.5 mm	5.5 mm	5.5 mm
Minimum value of the creepage path requirement in acc. with table	5.5 mm	5.5 mm	5.5 mm

1829167 GMSTBV 2,5/ 3-GF-7,62

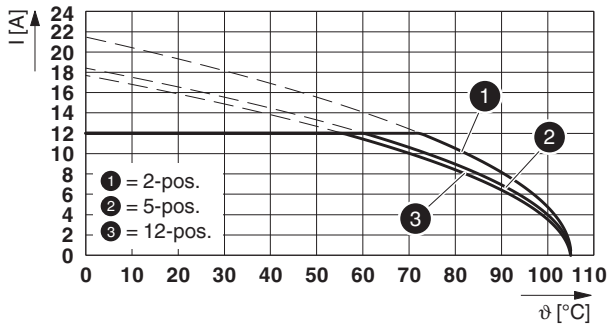
16 Current carrying capacity/derating curves

Specification	IEC 61984:2008-10
Note	Representation based on IEC 60512-5-2:2002-02
Note	For number of positions, see diagram
Reduction factor	0.8
Conductor cross section	2.5 mm ²

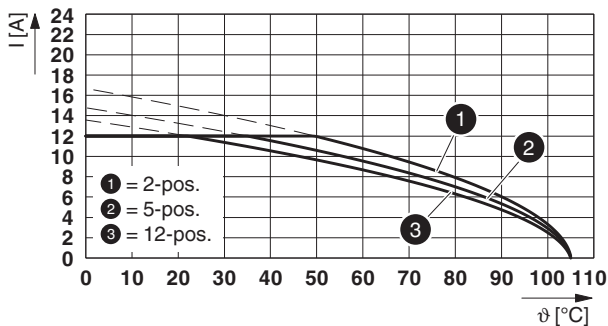
Type: GMSTB 2,5/...-STF-7,62 with GMBSTBV 2,5/...-GF-7,62



Type: GFKC 2,5/...-STF-7,62 with GMSTBV 2,5/...-GF-7,62

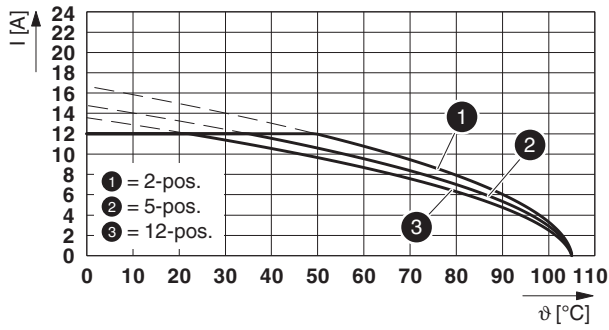


Type: GMVSTBR 2,5/...-STF-7,62 with GMSTBV 2,5/...-GF-7,62

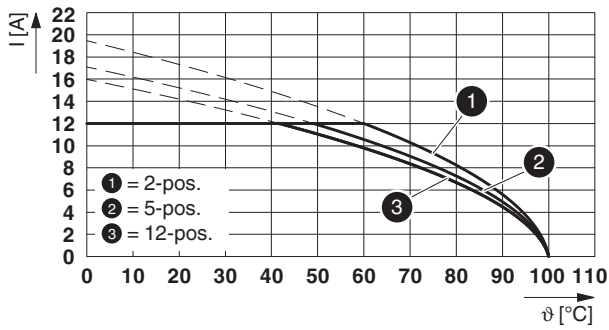


1829167 GMSTBV 2,5/ 3-GF-7,62

Type: GMVSTBW 2,5/...-STF-7,62 with GMSTBV 2,5/...-GF-7,62



Type: FRONT-GMSTB 2.5/...-STF-7.62 with GMSTBV 2.5/...-GF-7.62



1829167 GMSTBV 2,5/ 3-GF-7,62**17 Environmental and durability tests****17.1 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	5g (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	

17.2 Insulation resistance

Specification	IEC 60512-3-1:2002-02
Result	Test passed
Insulation resistance, neighboring positions	> 5 MΩ

1829167 GMSTBV 2,5/ 3-GF-7,62

18 Approvals / Certificates

CSA 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	300 V	10 A	-	-
IECEE CB Scheme 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	400 V	12 A	-	-
EAC 				
cULus Recognized 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
Usegroup B				
	300 V	15 A	-	-
Usegroup D				
	300 V	10 A	-	-
VDE Zeichengenehmigung 	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm ²]
	400 V	12 A	-	-

1829167 GMSTBV 2,5/ 3-GF-7,62**19 Commercial Data**

Item no.	1829167
Type	GMSTBV 2,5/ 3-GF-7,62
Pieces per package	50
Net weight	3.02 g
GTIN	4017918050924
	Information that applies locally, see link on page 1

20 corresponding plugs

Item no.	Type
1805990	FRONT-GMSTB 2,5/ 3-STF-7,62
1847893	GMVSTBR 2,5/ 3-STF-7,62
1848009	GMVSTBW 2,5/ 3-STF-7,62
1858772	GMSTB 2,5/ 3-STF-7,62
1939756	GFKC 2,5/ 3-STF-7,62

21 Accessories

Description	Item No.	Type
Keying cap, for forming sections, plugs onto header pin, green insulating material	1755477	MSTB-BL
Coding section, inserted into the recess in the header or the inverted plug, red insulating material	1734401	CR-MSTB
	0804549	SK 7,62/3,8:FORTL.ZAHLEN

1829167 GMSTBV 2,5/ 3-GF-7,62

22 Combination tests

**GMSTBV 2,5/...-GF****GMSTB 2,5/...-STF****GFKC 2,5/...-STF****GMVSTBR 2,5/...-STF****GMVSTBW 2,5/...-STF**

IEC 61984

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. 9 N / 6 N

approx. 9 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

Durability tests (B)Contact resistance R₁ 1st level

2.4 mΩ

2 mΩ

3.4 mΩ

3.4 mΩ

Contact resistance R₁ 2nd level

Insertion/withdrawal cycles

25

25

25

25

Contact resistance R₂

2.5 mΩ

2.1 mΩ

3.4 mΩ

3.4 mΩ

Rated impulse voltage at sea level
Voltage waveform ≥ (1.2/50 μs)

7.3 kV

7.3 kV

7.3 kV

7.3 kV

Power-frequency withstand voltage
Voltage waveform ≥ (50/60 Hz)

3.31 kV

3.31 kV

3.31 kV

3.31 kV

Insulation resistance
Requirements > 5 MΩ

> 5 MΩ

> 5 MΩ

> 5 MΩ

> 5 MΩ

Thermal tests (C)

Tested number of positions

12

12

12

12

Tested conductor cross section

2.5 mm²2.5 mm²2.5 mm²2.5 mm²

Test current

12 A

12 A

12 A

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

105 °C/168 h

105 °C/168 h

105 °C/168 h

Test sequence 3: noxious gas storage
(ISO 6988)

KFW 0.2 S/1 cycle

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 ≥ (1.2/50 μs)

7.3 kV

7.3 kV

7.3 kV

7.3 kV

Power-frequency withstand voltage
Voltage waveform ≥ (50/60 Hz)

3.31 kV

3.31 kV

3.31 kV

3.31 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

IP20

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

1829167 GMSTBV 2,5/ 3-GF-7,62**GMSTBV 2,5/..-GF****FRONT-GMSTB
2,5/..-STF**

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

Durability tests (B)Contact resistance R₁ 1st level

2.4 mΩ

Contact resistance R₁ 2nd level

Insertion/withdrawal cycles

25

Contact resistance R₂

2.6 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

> 5 MΩ

Thermal tests (C)

Tested number of positions

12

Tested conductor cross section

2.5 mm²

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 dm³ SO₂ on 300 dm³/
40 °C/1 cycleRated 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