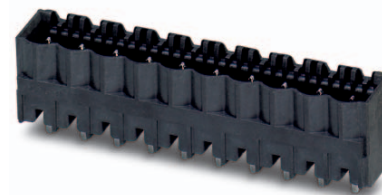


**Order No.: 1837048**

**Type: CCVA 2,5/ 4-G P20 THR**

**Header, Reflow/wave soldering**



The figure shows a 10-position version of the product

## 1 Main features



- |                         |                     |                        |                     |
|-------------------------|---------------------|------------------------|---------------------|
| • No. of pos.           | 4                   | • Nominal current      | 12 A                |
| • Nominal cross section | 2.5 mm <sup>2</sup> | • Nominal voltage      | 320 V               |
| • Color                 | black               | • Connection direction | 90 °                |
| • Pitch                 | 5 mm                | • Type of packaging    | packed in cardboard |
| • Mounting type         | THR soldering       |                        |                     |

## 2 Your advantages

- ✓ Designed for integration into the SMT soldering process
- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✓ 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/1837048](https://phoenixcontact.net/product/1837048)

**1837048 CCVA 2,5/ 4-G P20 THR****3 Table of contents**

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1837048 CCVA 2,5/ 4-G P20 THR

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



**1837048 CCVA 2,5/ 4-G P20 THR****5 item properties**

Order No.	1837048
Type	CCVA 2,5/ 4-G P20 THR
Type of contact	Male connector
Range of articles	CCVA 2,5/...G
Pitch	5 mm
Number of positions	4
Locking	without
Mounting type	THR soldering
Product note	User information and design recommendations for through hole reflow technology can be found under "Downloads"

**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
Insulating material	LCP
CTI according to IEC 60112	225
Flammability rating according to UL 94	V0
Color	black (9005)

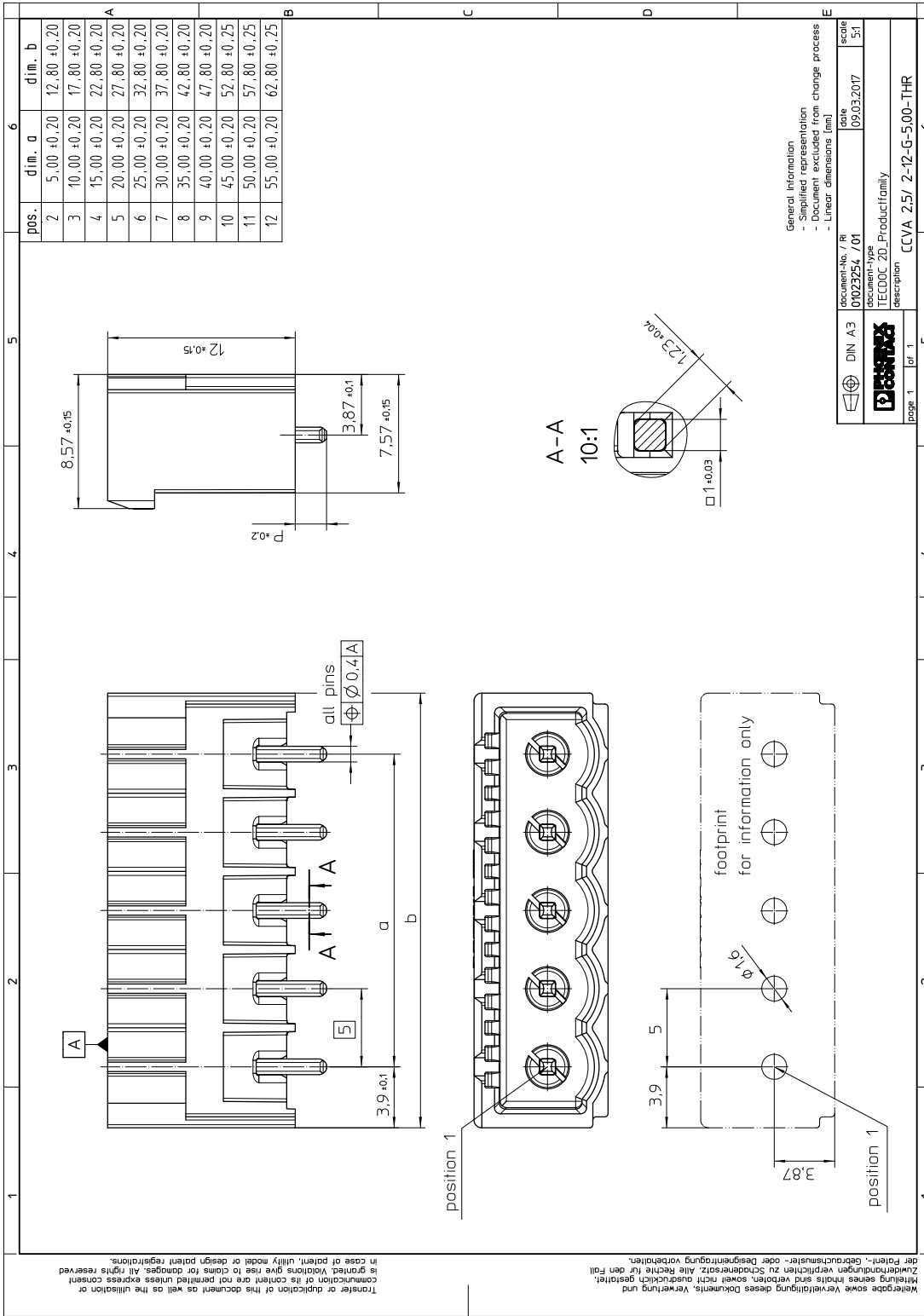
**6 Dimensions****6.1 Dimensions for the product**

Length	8.57 mm
Width	22.8 mm
Height (without solder pin)	12 mm
Total height	14 mm
Solder pin [P]	2 mm
Dimension a	15 mm

**6.2 Dimensions for PCB design**

Hole diameter	1.6 mm
Pin dimensions	1 x 1 mm

7 Series drawing



**1837048 CCVA 2,5/ 4-G P20 THR****8 Packaging information**

Type of packaging	packed in cardboard
Pieces per package	50

**9 Application****9.1 Processing notes**

Process	Reflow/wave soldering
Specification	Following IPC/JEDEC J-STD-020D.1:2008-03
Specification	Following IEC 61760-1:2006-04
Specification	Following IEC 60068-2-58:2005-02
Moisture Sensitive Level	MSL 1
Classification temperature $T_c$	max. 260 °C
Solder cycles in the reflow	3
swash circumference	see dimensional drawing

**9.2 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)

**1837048 CCVA 2,5/ 4-G P20 THR****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.	20 N

**1837048 CCVA 2,5/ 4-G P20 THR****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	1.2 mΩ
Degree of pollution	2

**11.2 Air and creepage distances**

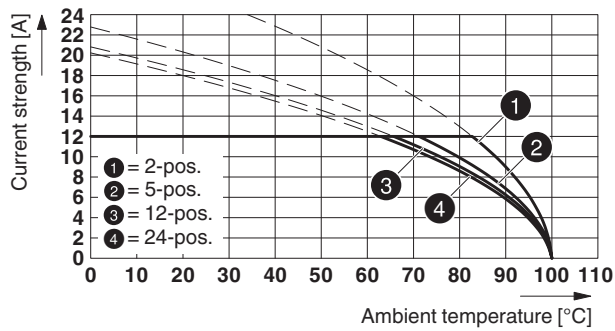
Component	Header		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 225		
Rated insulation voltage	250 V	320 V	400 V
Rated surge voltage	4 kV	4 kV	4 kV
Degree of pollution	3	2	2
Overvoltage category	III	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



## 1837048 CCVA 2,5/ 4-G P20 THR

**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 CCV 2,5/...-GF-LR P20 THR**

**1837048 CCVA 2,5/ 4-G P20 THR****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**

**1837048 CCVA 2,5/ 4-G P20 THR****16 Commercial Data**

Order No.	1837048
Type	CCVA 2,5/ 4-G P20 THR
Pieces per package	50
Net weight	1.933 g
GTIN	4055626021430
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**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
HT coding section, prior to the reflow soldering process it is inserted into the recess on the header, made from high-temperature-resistant beige insulation material	1954362	CR-MSTB NAT HT
Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm	1051993	B-STIFT

## 1837048 CCVA 2,5/ 4-G P20 THR

## 18 Combination tests

**CCVA 2,5/..-G**

Specification

**Mechanical tests (A)**

Insertion/withdrawal force per position

Polarization when inserted  
Requirement >20 NContact holder in insert  
Requirements >20 N**Durability tests (B)**Contact resistance  $R_1$ 

Insertion/withdrawal cycles

Contact resistance  $R_2$ Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$ Insulation resistance  
Requirements > 5 M $\Omega$ **Thermal tests (C)**

Tested number of positions

Tested conductor cross section

Test current

Upper limiting temperature  
Requirements < 100°C**Climatic tests (D)**

Test sequence 1: low temperature storage

Test sequence 2: heat storage

Test sequence 3: noxious gas storage  
(ISO 6988)Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu s)$ Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$ **Environmental and endurance tests (E)**

Specification

Degree of protection

**MSTB 2,5/..-ST**

IEC 61984

approx. 8 N / 6 N

Test passed

Test passed

1.2 m $\Omega$ 

25

1.2 m $\Omega$ 

4.8 kV

2.21 kV

> 1 T $\Omega$ 

24

2.5 mm<sup>2</sup>

12 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20  
test finger