

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 ² | • 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

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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

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	
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**

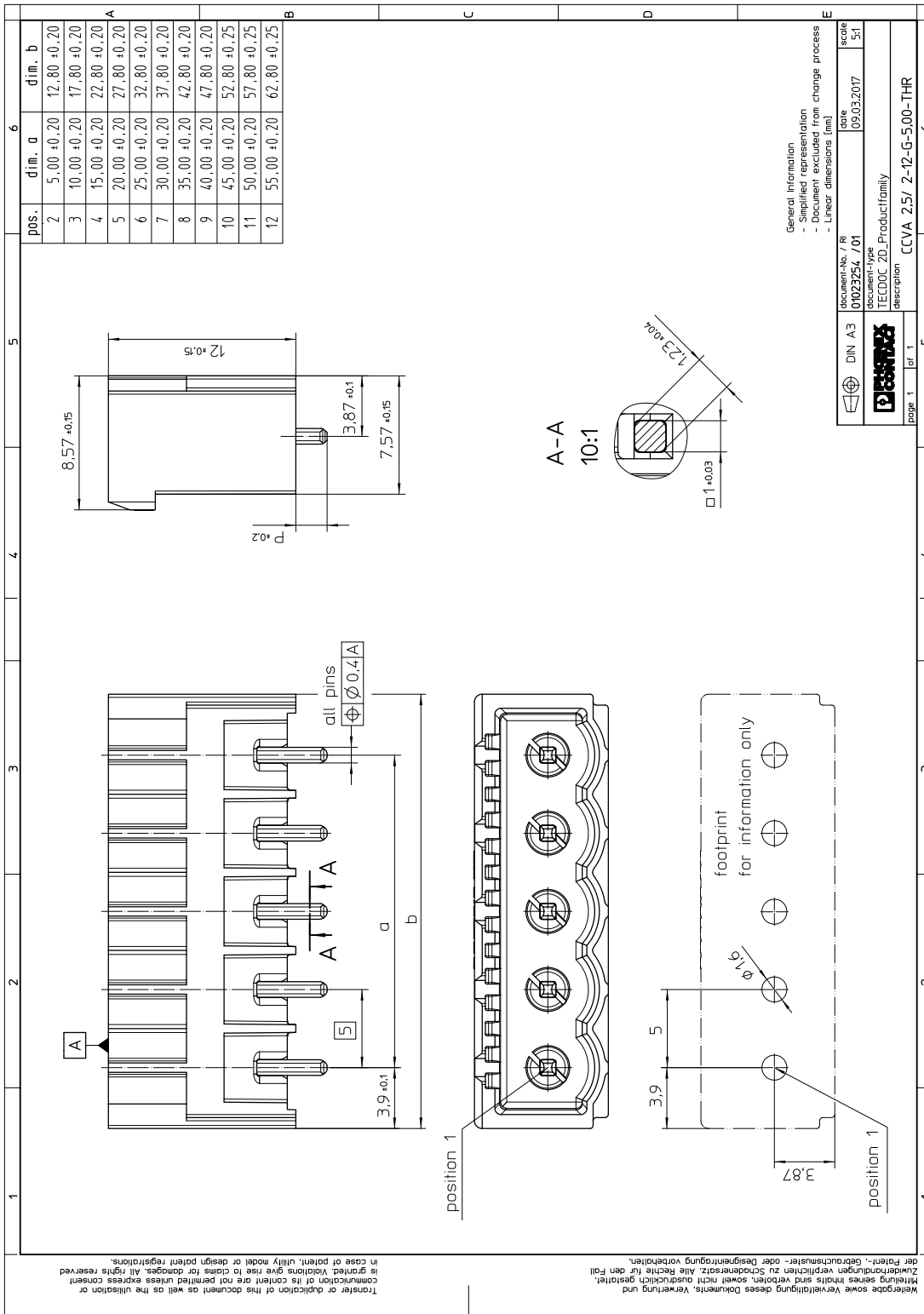
Length	8.57 mm
Width	22.8 mm
Height (without solder pin)	12 mm
Total height	14 mm
Solder pin [P]	2 mm
Dimension a	15 mm

6.2 Dimensions for PCB design

Hole diameter	1.6 mm
Pin dimensions	1 x 1 mm

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7 Series drawing



General Information

- Simplified representation
- Document excluded from change process
- Linear dimensions (mm)

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TECDOC 2D_Productfamily		
description		
	CCVA 2,5/ 2-12-G-5,00-THR	

page 1 of 1

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 ²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.2 mΩ
Degree of pollution	2

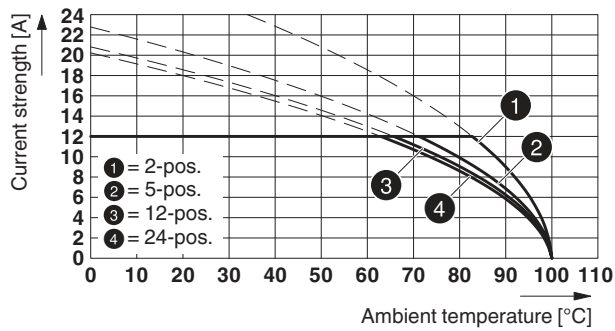
11.2 Air and creepage distances

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

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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 mm ²
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 Ω **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 Ω

25

1.2 m Ω

4.8 kV

2.21 kV

> 1 T Ω

24

2.5 mm²

12 A

Test passed

-40 °C/2 h

100 °C/168 h

0.2 dm³ SO₂ on 300 dm³/
40 °C/1 cycle

4.8 kV

2.21 kV

IEC 61984:2008-10

Finger safety with IP20
test finger