2024-07-01
Product version 00
Document revision 03

Data sheet

Item No.: 1753145

Type: CCDN 2,5/ 3-G1-5,08 P26 THR

PCB headers, Reflow/wave soldering

The figure shows a 10-pos. version with 20 contacts

1 Main features

- No. of pos. 3
- Nominal cross section 2.5 mm²
- Color black (RAL 9005)
- Pitch 5.08 mm
- Mounting type THR soldering / wave soldering
- Nominal current 12 A
- Nominal voltage 320 V
- Connection direction 0 °
- Type of packaging packed in cardboard

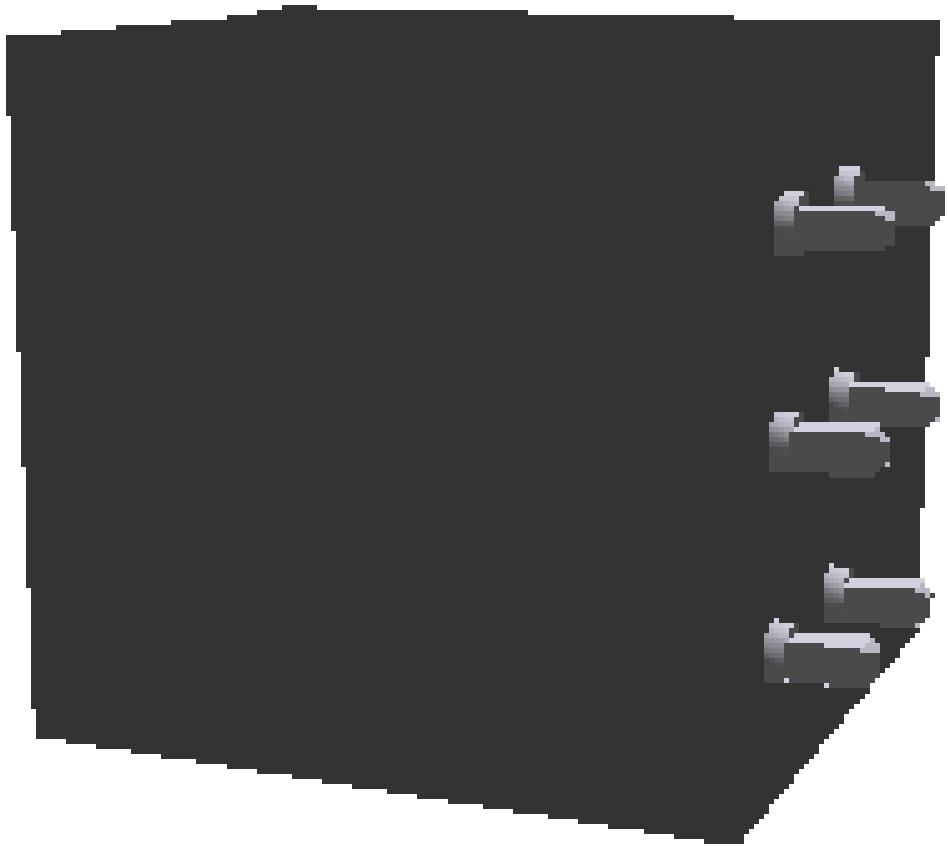
2 Your advantages

- Designed for integration into the SMT soldering process
- Conductor connection on several levels enables higher contact density

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.com/product/1753145

3 Table of contents

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



5 General Technical Data

5.1 item properties

Item no.	1753145
Type	CCDN 2,5/ 3-G1-5,08 P26 THR
Product line	COMBICON Connectors M
Connector system	COMBICON MSTB 2,5
Product type	PCB headers
Contact connection type	Pin
Range of articles	CCDN 2,5/..-G1-THR
Pitch	5.08 mm
Number of positions	3
Number of rows	2
Number of connections	6
Number of potentials	6
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pinning
Solder pins per potential	1
Type	Component suitable for through hole reflow

6 Mounting

6.1 Flange mounting

Type of locking	without
Mounting flange	without

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 µm Ni) , Tin (3 - 5 µm Sn)
Soldering area surface	Nickel (1 - 3 µm Ni) , Tin (3 - 5 µm Sn)
Surface characteristics	Tin-plated

Insulating material data	Housing
Color	black (RAL 9005)
Insulating material	LCP
Insulating material group	IIIa
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0

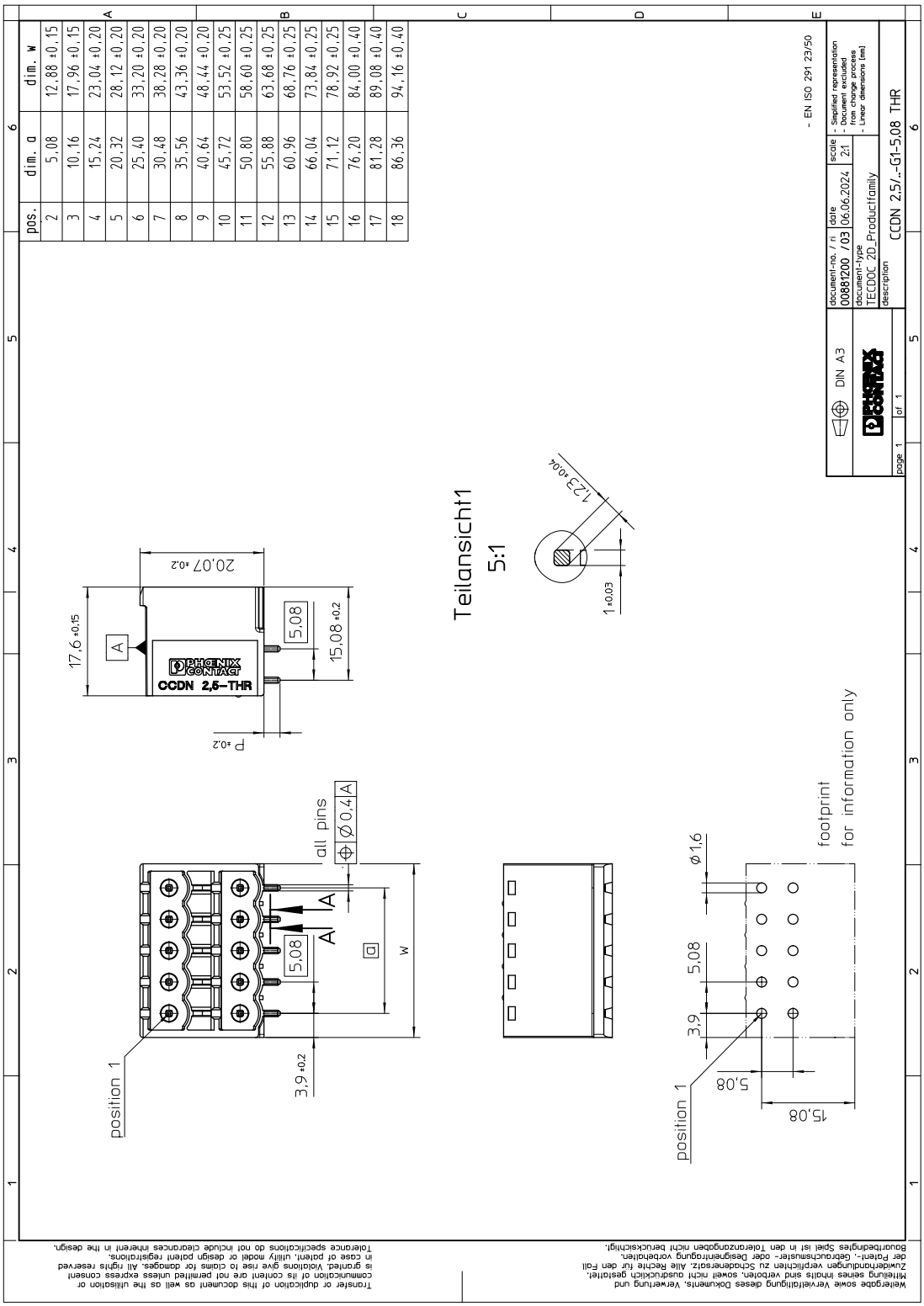
8 Dimensions

8.1 Dimensions for the product

Length	17.6 mm
Width	17.96 mm
Height (without solder pin)	20.07 mm
Total height	22.67 mm
Solder pin [P]	2.6 mm

1753145 CCDN 2,5/ 3-G1-5,08 P26 THR

9 Series drawing



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 specifications

Type of packaging	packed in cardboard
Packing unit	50

12.1 Processing notes

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

12.2 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)

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

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

15 Electrical tests

Rated current / conductor cross section	12 A / 2.5 mm²
Rated insulation voltage (III/2)	320 V
Rated surge voltage (III/2)	4 kV
Contact resistance	1.1 mΩ
Degree of pollution	2

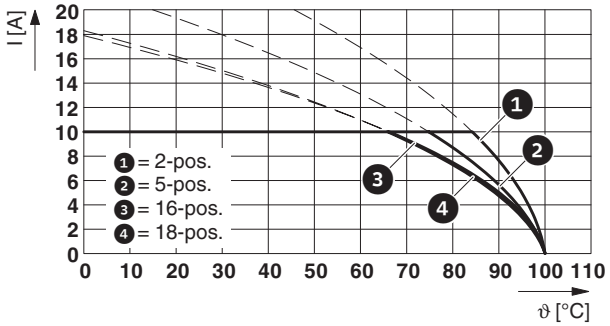
16 Air and creepage distances

Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112)	CTI 175		
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

17 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 mm²

Type: FKCN 2,5/...-ST-5,08 with CCDN 2,5/...-G1-5,08 P...THR



18 Environmental and durability tests

18.1 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 Hz ... 60.1 Hz)
Acceleration	5g (60.1 Hz ... 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	

18.2 Insulation resistance

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

19 Data transmission

20 Approvals / Certificates

cULus Recognized	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
Usegroup B				
	300 V	10 A	-	-
Usegroup D				
	300 V	10 A	-	-

VDE Gutachten mit Fertigungsüberwachung	Voltage [V]	Current [A]	Cross section [AWG]	Cross section [mm²]
	400 V	12 A	-	-

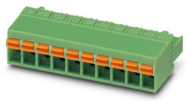
21 Commercial Data

Item no.	1753145
Type	CCDN 2,5/ 3-G1-5,08 P26 THR
Packing unit	50
Net weight	4.824 g
GTIN	4046356324083
	Information that applies locally, see link on page 1

22 corresponding plugs

Item no.	Type
1754571	FKCN 2,5/ 3-ST-5,08

23 Combination tests



CCDN 2,5/..-G1-THR	FKCN 2,5/..-ST			
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 R_1 1st level	1.1 mΩ			
Contact resistance R_1 2nd level	1.4 mΩ			
Insertion/withdrawal cycles	25			
Contact resistance R_2	1.1 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	18			
Tested conductor cross section	2.5 mm^2			
Test current	10 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	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			
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			