

Order No.: 1097546

Type: DMC 0,5/ 2-G1SH-2,54P20THR24

PCB headers, Reflow/wave soldering



The figure shows a 2-pos. version with 4 contacts

## 1 Main features



- |                         |              |                        |                 |
|-------------------------|--------------|------------------------|-----------------|
| • No. of pos.           | 2            | • Nominal current      | 5 A             |
| • Nominal cross section |              | • Nominal voltage      | 160 V           |
| • Color                 | black (9005) | • Connection direction | 90 °            |
| • Pitch                 | 2.54 mm      | • Type of packaging    | 24 mm wide tape |
| • Mounting type         |              |                        |                 |

## 2 Your advantages

- ✓ Gold-plated contacts ensure transfer quality remains stable over the long term
- ✓ Designed for integration into the SMT process
- ✓ Conductor connection on several levels enables higher contact density with the same surface area
- ✓ Supplied in tape-on-reel packing according to IEC 60286-3 for automated mounting



Make sure you always use the latest documentation.  
It can be downloaded at: [phoenixcontact.net/product/1097546](https://phoenixcontact.net/product/1097546)

**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****3 Table of contents**

1	Main features.....	1
2	Your advantages .....	1
3	Table of contents .....	2
4	3D model in PDF can be activated (Acrobat Reader only).....	3
5	General Technical Data .....	4
	5.1 item properties .....	4
	5.2 Mounting .....	4
6	Material properties.....	4
	6.1 Material of metal parts.....	4
7	Dimensions.....	5
	7.1 Dimensions for the product .....	5
8	Series drawing.....	6
9	Application.....	7
	9.1 General information.....	7
10	Packaging information .....	7
11	Blister drawing.....	8
	11.1 Processing notes .....	9
	11.2 Temperature limit values .....	9
12	Mechanical tests.....	10
13	Electrical tests .....	11
	13.1 Electrical data .....	11
	13.2 Air and creepage distances .....	11
14	Current carrying capacity/derating curves .....	12
	14.1 Vibration test .....	12
15	Approvals .....	12
16	Commercial Data.....	13
17	Combination tests.....	14

1097546 DMC 0,5/ 2-G1SH-2,54P20THR24

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



**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****5 General Technical Data****5.1 item properties**

Order No.	1097546
Type	DMC 0,5/ 2-G1SH-2,54P20THR24
Plug-in system	MICRO COMBICON - DFMC 0,5 shielded
Product type	PCB headers
Type of contact	Male connector
Range of articles	DMC 0,5/..-G1-SH-THR
Pitch	
Range of positions	...
Number of positions	2
Connection direction of the connector to the PCB	90 °

**5.2 Mounting**

Type of locking	shielded connection
	without

**6 Material properties****6.1 Material of metal parts**

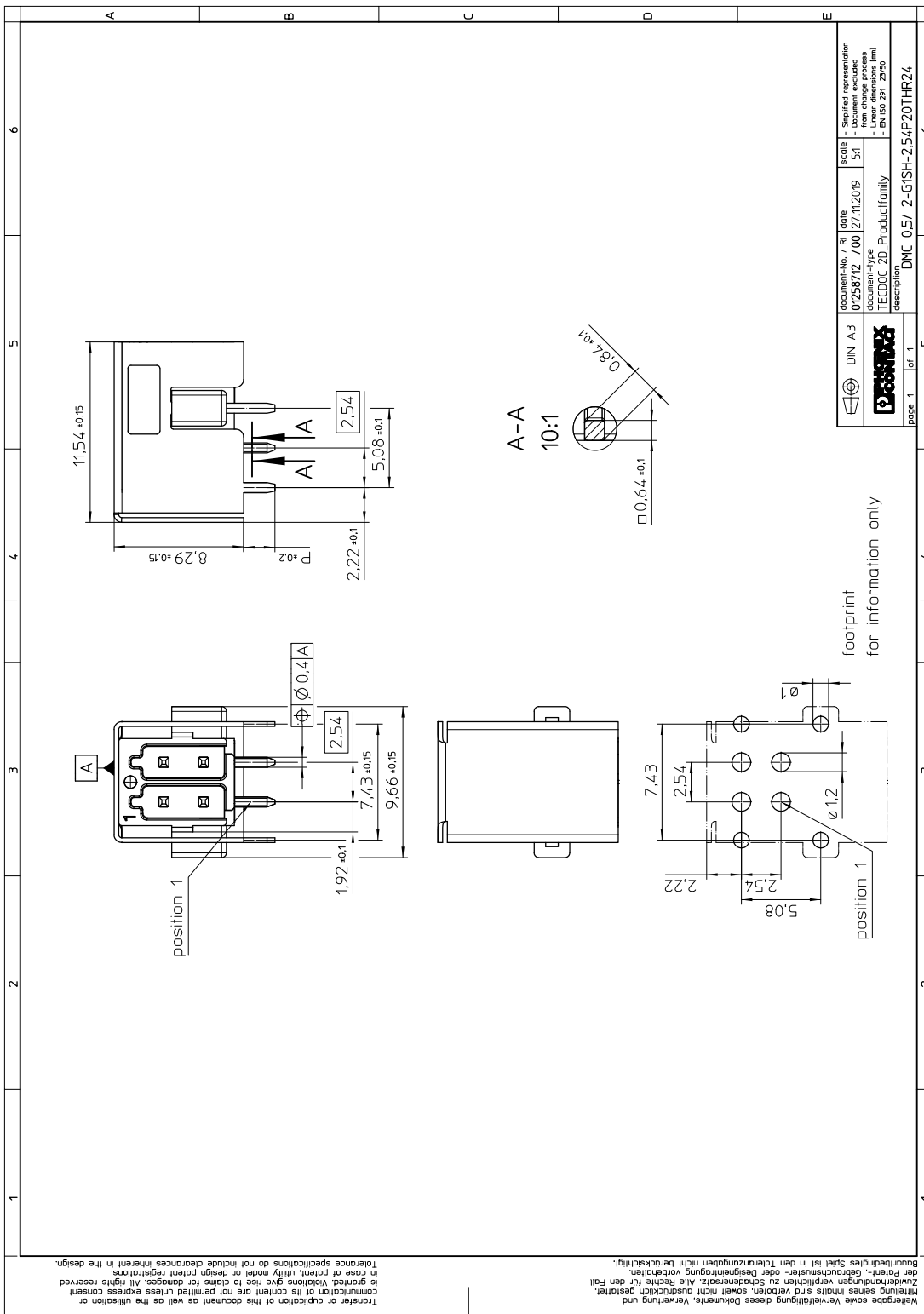
Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Nickel (2 - 4 µm Ni) , Gold (0.25 Au)
Soldering area surface	Nickel (2 - 4 µm Ni) , Gold (0.25 Au)
Surface characteristics	Completely gold-plated
Insulating material data	Housing
Insulating material	LCP
Insulating material group	IIIa
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0
Color	black (9005)

**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****7 Dimensions****7.1 Dimensions for the product**

Length	11.54 mm
Width	9.66 mm
Height (without solder pin)	8.29 mm
Total height	10.29 mm
Solder pin [P]	2 mm
Dimension a	2.54 mm

1097546 DMC 0,5/ 2-G1SH-2,54P20THR24

8 Series drawing



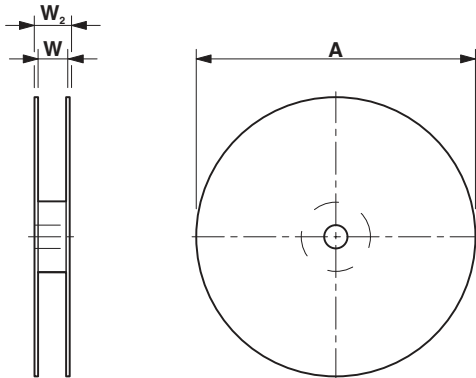
**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****9 Application****9.1 General information**

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.

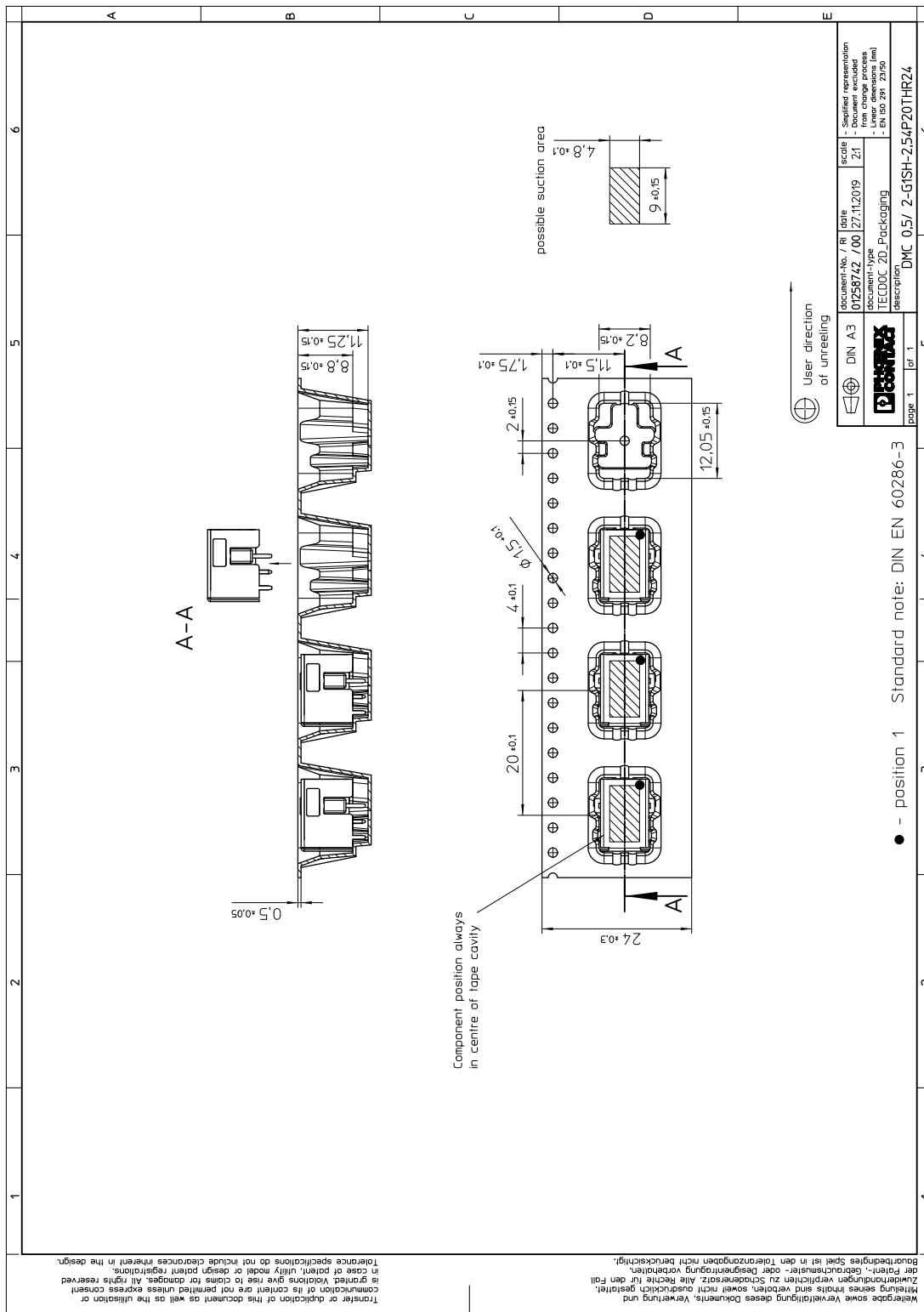
**10 Packaging information**

Type of packaging	24 mm wide tape
Pieces per package	300
Outer packaging type	Transparent-Bag
[W] tape width	24 mm
[A] coil diameter	330 mm
[W2] coil overall dimension	30.4 mm
Number of products per coil	300



1097546 DMC 0,5/ 2-G1SH-2,54P20THR24

11 Blister drawing





**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****11.1 Processing notes**

Process	Reflow/wave soldering
Specification	Following IPC/JEDEC J-STD-020E:2014-12
Specification	Following IEC 61760-1:2006-04
Specification	Following IEC 60068-2-58:2015-03
Moisture Sensitive Level	MSL 1
Classification temperature $T_c$	max. 260 °C
Solder cycles in the reflow	3
swash circumference	see dimensional drawing

**11.2 Temperature limit values**

Ambient temperature (storage/transport)	-30 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 80 °C
Ambient temperature (installation)	-40 °C ... 80 °C (dependent on the derating curve)
Ambient temperature (mobile installation)	-30 °C 80 °C dependent on the derating curve

**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****12 Mechanical tests**

Mechanical test group A	
Specification	IEC 61984:2008-10
Visual examination	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	100
Insertion strength per pos. approx.	3 N
Withdraw strength per pos. approx.	3 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

**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****13 Electrical tests****13.1 Electrical data**

Rated current / conductor cross section	5 A /
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Contact resistance	4.8 mΩ
Degree of pollution	2

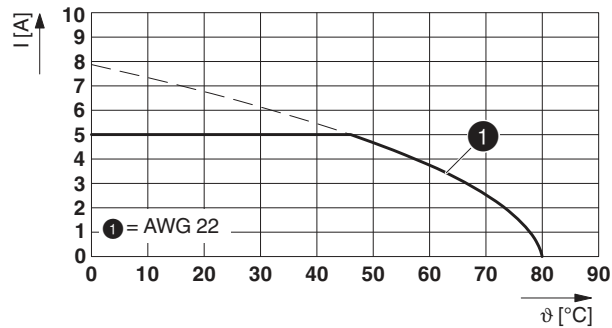
**13.2 Air and creepage distances**

Component	PCB headers		
Specification	IEC 60664-1:2007-04		
Mains type	unearthed mains		
Insulating material group	IIIa		
Comparative tracking index (IEC 60112:2003-01)	CTI 175		
Rated insulation voltage	50 V	160 V	160 V
Rated surge voltage	2.5 kV	2.5 kV	2.5 kV
Degree of pollution	3	2	2
Overvoltage category	III	III	II
Minimum clearance case A (inhomogeneous field)	1.5 mm	1.5 mm	1.5 mm
Minimum value of the creepage path requirement in acc. with table	1.9 mm	1.6 mm	1.6 mm

**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****14 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	

**Type: DMCC 0,5/...-ST-SH-2,54 with DMC 0,5/...-G1-SH-2,54P...THRR...**

**14.1 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	50 m/s <sup>2</sup> (60.1 - 150 Hz)
Test duration per axis	2.5 h
Test directions	X-, Y- and Z-axis
Note	The connected conductor loops were guided to the test sample at a distance of approx. 10 cm.

**15 Approvals**

EAC ENEC

**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****16 Commercial Data**

Order No.	1097546
Type	DMC 0,5/ 2-G1SH-2,54P20THR24
Pieces per package	300
Net weight	2.22 g
GTIN	4055626938936
	Information that applies locally, see link on page 1
Country of origin	Information that applies locally, see link on page 1

**1097546 DMC 0,5/ 2-G1SH-2,54P20THR24****17 Combination tests****DMC 0,5/..-G1-SH-THR****DMCC 0,5/..-ST-SH**

IEC 61984

IEC 61984

**Mechanical tests (A)**

Insertion/withdrawal force per position

approx. 3 N / 3 N

Polarization when inserted  
Requirement >20 N

Test passed

Contact holder in insert  
Requirements >20 N

Test passed

**Durability tests (B)**Contact resistance  $R_1$ 4.8 m $\Omega$ 

Insertion/withdrawal cycles

100

Contact resistance  $R_2$ 4.9 m $\Omega$ Rated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu\text{s})$ 

2.95 kV

Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$ 

1.39 kV

**Thermal tests (C)**

Tested number of positions

2

Test current

5 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

80 °C/168 h

Test sequence 3: noxious gas storage  
(ISO 6988)0.2 dm<sup>3</sup> SO<sub>2</sub> on 300 dm<sup>3</sup>/  
40 °C/1 cycleRated impulse voltage at sea level  
Voltage waveform  $\geq (1.2/50 \mu\text{s})$ 

2.95 kV

Power-frequency withstand voltage  
Voltage waveform  $\geq (50/60 \text{ Hz})$ 

1.39 kV

**Environmental and endurance tests (E)**

Specification

IEC 61984:2008-10

Degree of protection

Finger safety with IP20  
test finger