

MC 1,5/13-G-3,81 P20 THR - PCB header



1829056

<https://www.phoenixcontact.com/us/products/1829056>

Please be informed that the data shown in this PDF document is generated from our online catalog. Please find the complete data in the user documentation. Our general terms of use for downloads are valid.



PCB headers, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, contact connection type: Pin, number of potentials: 13, number of rows: 1, number of positions: 13, number of connections: 13, product range: MC 1,5/..-G-THR, pitch: 3.81 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: packed in cardboard

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

Commercial data

Item number	1829056
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	AA01
Product key	AABTBB
Catalog page	Page 18 (NTK-2014)
GTIN	4046356868846
Weight per piece (including packing)	3.08 g
Weight per piece (excluding packing)	3.08 g
Customs tariff number	85366930
Country of origin	DE

MC 1,5/13-G-3,81 P20 THR - PCB header



1829056

<https://www.phoenixcontact.com/us/products/1829056>

Technical data

Product properties

Product type	PCB headers
Product family	MC 1,5/...-G-THR
Product line	COMBICON Connectors S
Type	Component suitable for through hole reflow
Number of positions	13
Pitch	3.81 mm
Number of connections	13
Number of rows	1
Number of potentials	13
Mounting flange	without
Pin layout	Linear pinning
Solder pins per potential	1

Electrical properties

Nominal current I_N	8 A
Nominal voltage U_N	160 V
Degree of pollution	3
Contact resistance	1.4 mΩ
Rated voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
Rated voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
Rated voltage (II/2)	250 V
Rated surge voltage (II/2)	2.5 kV

Mounting

Mounting type	THR soldering
Pin layout	Linear pinning

Processing notes

Process	Reflow/wave soldering
Moisture Sensitive Level	MSL 1
Classification temperature T_c	250 °C
Solder cycles in the reflow	3

Material specifications

Material data - contact

Note	WEEE/RoHS-compliant, free of whiskers according to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface characteristics	Tin-plated

MC 1,5/13-G-3,81 P20 THR - PCB header



1829056

<https://www.phoenixcontact.com/us/products/1829056>

Metal surface contact area (top layer)	Tin (3 - 5 µm Sn)
Metal surface contact area (middle layer)	Nickel (1 - 3 µm Ni)
Metal surface soldering area (top layer)	Tin (3 - 5 µm Sn)
Metal surface soldering area (middle layer)	Nickel (1.3 - 3 µm Ni)

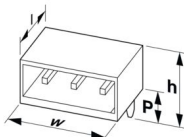
Material data - housing

Color ()	()
Insulating material	LCP
Insulating material group	IIIa
CTI according to IEC 60112	175
Flammability rating according to UL 94	V0

Notes

General	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.
---------	--

Dimensions

Dimensional drawing	
Pitch	3.81 mm
Width [w]	50.92 mm
Height [h]	8.9 mm
Length [l]	9.2 mm
Installed height	6.9 mm
Solder pin length [P]	2 mm
Pin dimensions	0.8 x 0.8 mm

PCB design

Hole diameter	1.4 mm
---------------	--------

Mechanical tests

Visual inspection

Specification	IEC 60512-1-1:2002-02
Result	Test passed

Dimension check

Specification	IEC 60512-1-2:2002-02
Result	Test passed

Resistance of inscriptions

Specification	IEC 60068-2-70:1995-12
---------------	------------------------

MC 1,5/13-G-3,81 P20 THR - PCB header



1829056

<https://www.phoenixcontact.com/us/products/1829056>

Result	Test passed
Polarization and coding	
Specification	IEC 60512-13-5:2006-02
Result	Test passed
Contact holder in insert	
Specification	IEC 60512-15-1:2008-05
Contact holder in insert Requirements >20 N	Test passed
Insertion and withdrawal forces	
Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	8 N
Withdraw strength per pos. approx.	6 N

Electrical tests

Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	20

Insulation resistance

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

Air clearances and creepage distances |

Specification	IEC 60664-1:2007-04
Insulating material group	IIIa
Comparative tracking index (IEC 60112)	CTI 175
Rated insulation voltage (III/3)	160 V
Rated surge voltage (III/3)	2.5 kV
minimum clearance value - non-homogenous field (III/3)	1.5 mm
minimum creepage distance (III/3)	2.5 mm
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV
minimum clearance value - non-homogenous field (III/2)	1.5 mm
minimum creepage distance (III/2)	1.6 mm
Rated insulation voltage (II/2)	250 V
Rated surge voltage (II/2)	2.5 kV
minimum clearance value - non-homogenous field (II/2)	1.5 mm
minimum creepage distance (II/2)	2.5 mm

Environmental and real-life conditions

Vibration test

Specification	IEC 60068-2-6:2007-12
---------------	-----------------------

MC 1,5/13-G-3,81 P20 THR - PCB header



1829056

<https://www.phoenixcontact.com/us/products/1829056>

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

Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance R ₁	1.4 mΩ
Contact resistance R ₂	1.5 mΩ
Insertion/withdrawal cycles	25

Climatic test

Specification	ISO 6988:1985-02
Corrosive stress	0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle
Thermal stress	100 °C/168 h
Power-frequency withstand voltage	1.39 kV

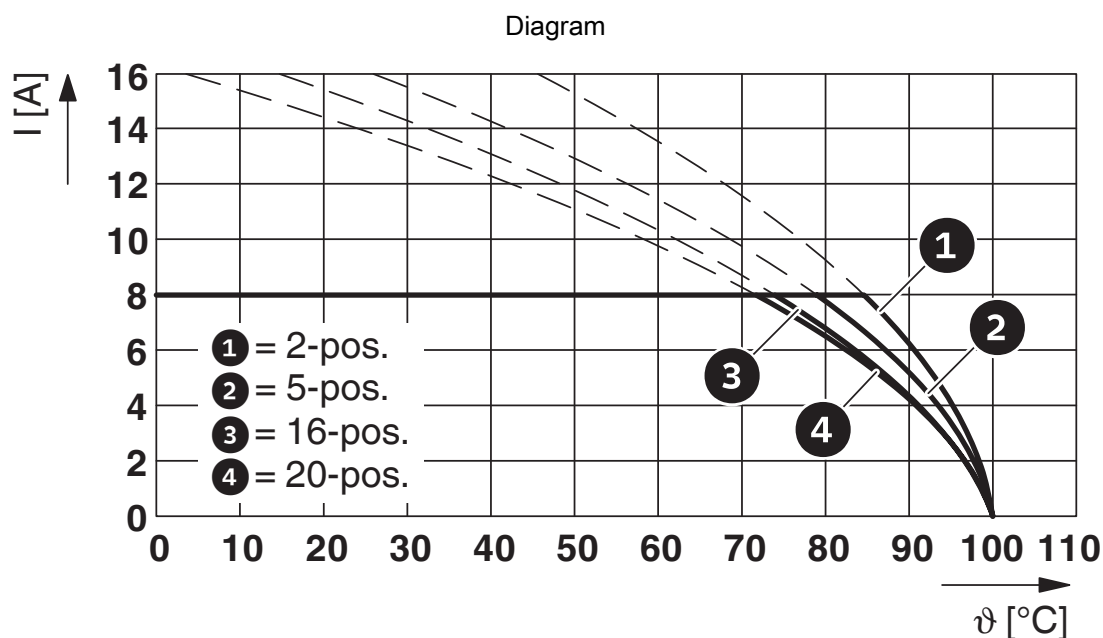
Ambient conditions

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

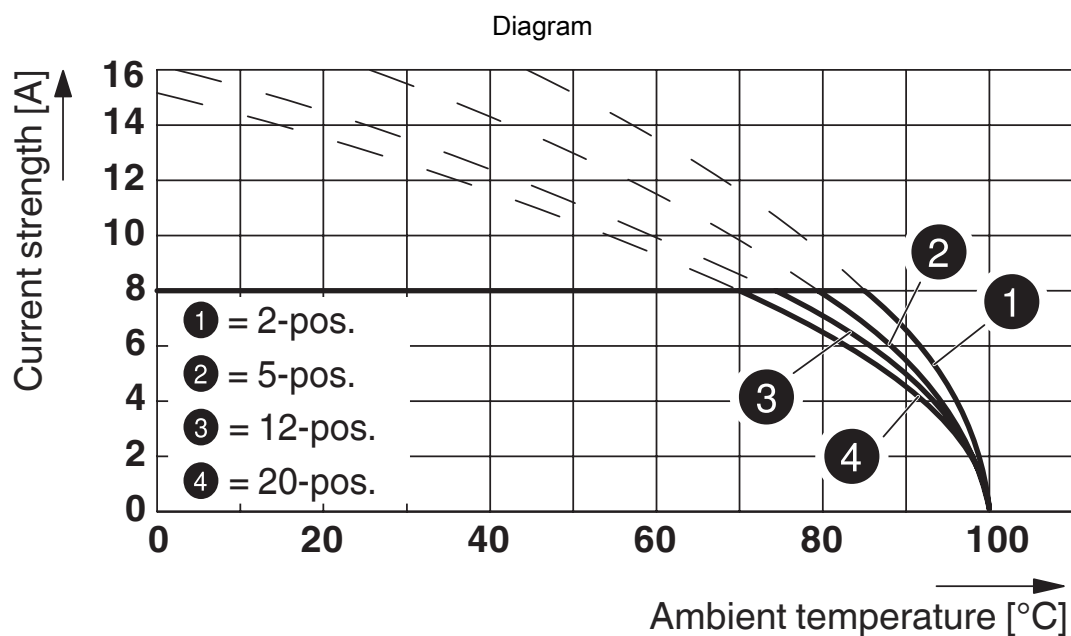
Packaging specifications

Type of packaging	packed in cardboard
-------------------	---------------------

Drawings



Type: MC 1,5/...-ST-3,81 with MC 1,5/...-G-3,81 P...THR



Type: FK-MCP 1,5/...-ST-3,81 with MC 1,5/...-G-3,81 P... THR

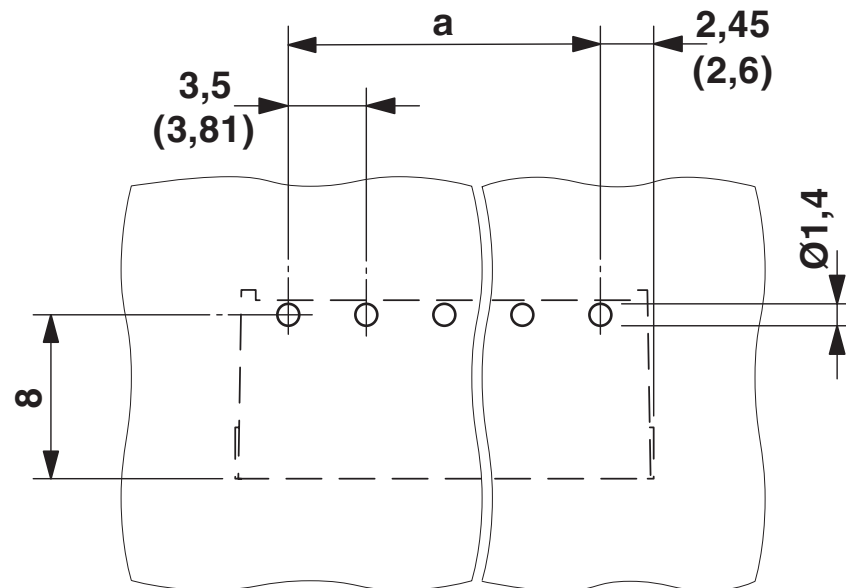
MC 1,5/13-G-3,81 P20 THR - PCB header



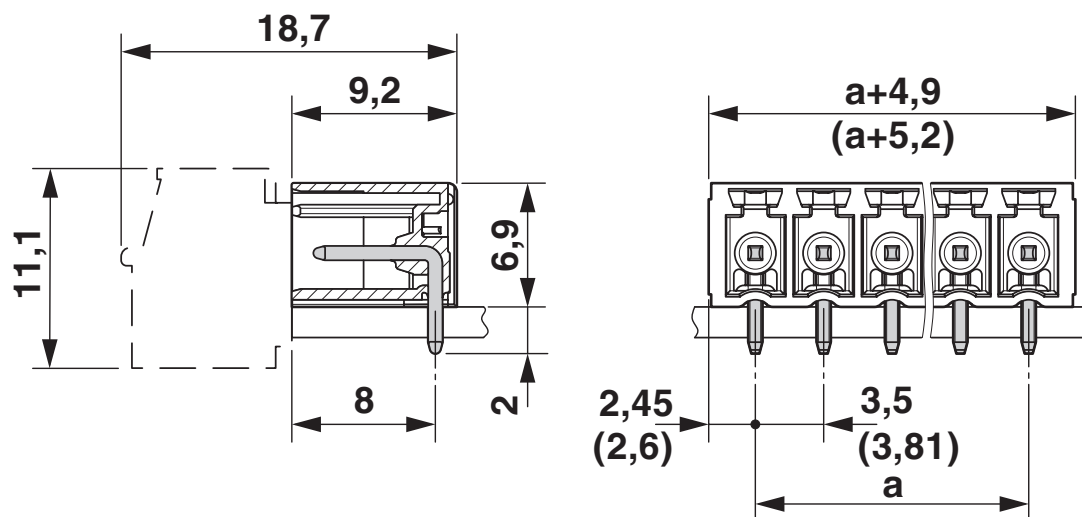
1829056

<https://www.phoenixcontact.com/us/products/1829056>

Drilling plan/solder pad geometry



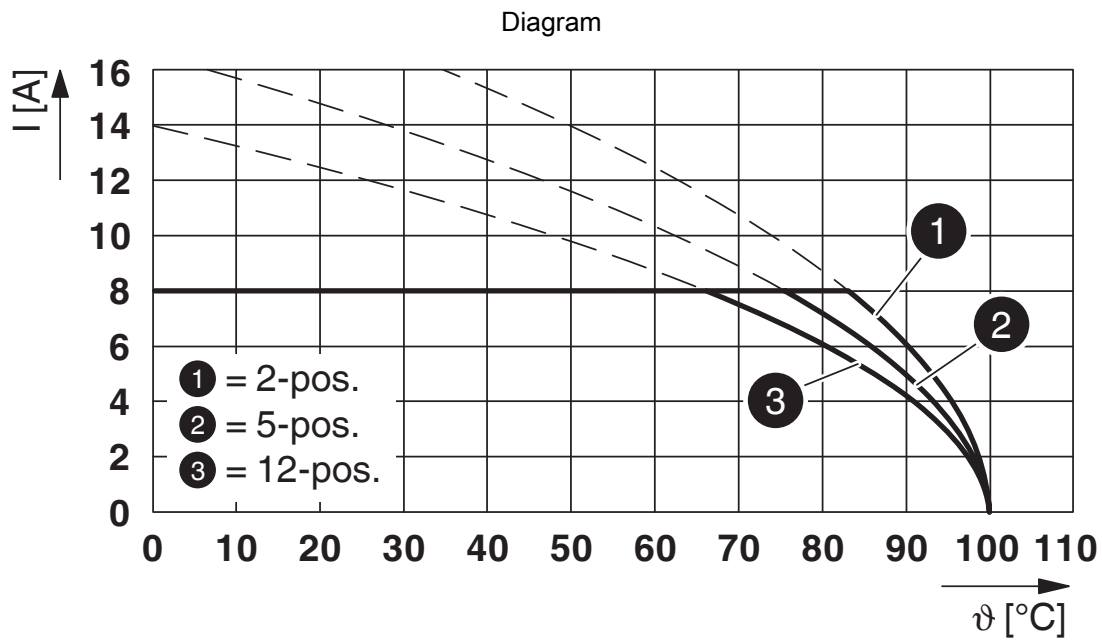
Dimensional drawing



MC 1,5/13-G-3,81 P20 THR - PCB header

1829056

<https://www.phoenixcontact.com/us/products/1829056>



Type: FRONT-MC 1,5/...-ST-3,81 with MC 1,5/...-G-3,81 P... THR

MC 1,5/13-G-3,81 P20 THR - PCB header

1829056

<https://www.phoenixcontact.com/us/products/1829056>



Classifications

ECLASS

ECLASS-13.0	27460201
-------------	----------

MC 1,5/13-G-3,81 P20 THR - PCB header



1829056

<https://www.phoenixcontact.com/us/products/1829056>

Environmental product compliance

China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
-------------------------------------	----------------------------

MC 1,5/13-G-3,81 P20 THR - PCB header



1829056

<https://www.phoenixcontact.com/us/products/1829056>

Accessories

MC 1,5/10-LWL 1,5-3,81 - Fiber optic

1841174

<https://www.phoenixcontact.com/us/products/1841174>

MINI COMBICON fiber optics, 3.81 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 1.5 mm



MC 1,5/10-LWL 2,3-3,81 - Fiber optic

1841190

<https://www.phoenixcontact.com/us/products/1841190>

MINI COMBICON fiber optics, 3.81 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 2.3 mm



MC 1,5/13-G-3,81 P20 THR - PCB header



1829056

<https://www.phoenixcontact.com/us/products/1829056>

MC 1,5/10-LWL 4-3,81 - Fiber optic

1841213

<https://www.phoenixcontact.com/us/products/1841213>

MINI COMBICON fiber optics, 3.81 mm pitch, 10-pos., separable for other numbers of positions (minimum: 2-pos.), inserts into the back of the MC header, color: transparent, dimension a: 4 mm



Phoenix Contact 2024 © - all rights reserved

<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com