

# SMC 1,5/ 6-G-3,81 BU - PCB header

1705224

<https://www.phoenixcontact.com/us/products/1705224>

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The figure shows a 10-position version of the product

PCB headers, nominal cross section: 1.5 mm<sup>2</sup>, color: blue, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Sn, contact connection type: Pin, number of potentials: 6, number of rows: 1, number of positions: 6, number of connections: 6, product range: SMC 1,5/...-G, pitch: 3.81 mm, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.4 mm, number of solder pins per potential: 1, plug-in system: COMBICON MC 1,5, Pin connector pattern alignment: Standard, locking: without, mounting method: without, type of packaging: packed in cardboard

## Your advantages

- Well-known mounting principle allows worldwide use
- Angled connection enables multi-row arrangement on the PCB
- Maximum flexibility when it comes to device design – one header for connectors with different connection technologies

## Commercial data

Item number	1705224
Packing unit	50 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Product key	AABSSA
GTIN	4046356760126
Weight per piece (including packing)	1.938 g
Weight per piece (excluding packing)	1.592 g
Country of origin	DE

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## Technical data

### Product properties

Product type	PCB headers
Product family	SMC 1,5/..-G
Product line	COMBICON Connectors S
Number of positions	6
Pitch	3.81 mm
Number of connections	6
Number of rows	1
Number of potentials	6
Mounting type	without
Pin layout	Linear pinning
Solder pins per potential	1

### Electrical properties

#### Properties

Nominal current $I_N$	8 A
Nominal voltage $U_N$	160 V
Contact resistance	1.7 m $\Omega$
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)	320 V
Rated surge voltage (II/2)	2.5 kV

### Mounting

Mounting type	Wave soldering
Pin layout	Linear pinning

### 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
Metal surface contact area (top layer)	Tin (5 $\mu\text{m}$ - 7 $\mu\text{m}$ Sn)
Metal surface contact area (middle layer)	Nickel (2 $\mu\text{m}$ - 3 $\mu\text{m}$ Ni)
Metal surface soldering area (top layer)	Tin (5 $\mu\text{m}$ - 7 $\mu\text{m}$ Sn)
Metal surface soldering area (middle layer)	Nickel (2 $\mu\text{m}$ - 3 $\mu\text{m}$ Ni)

#### Material data - housing

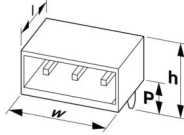
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Color (Housing)	blue (5015)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0
Glow wire flammability index GWFI according to EN 60695-2-12	850
Glow wire ignition temperature GWIT according to EN 60695-2-13	775
Temperature for the ball pressure test according to EN 60695-10-2	125 °C

## Dimensions

Dimensional drawing	
Pitch	3.81 mm
Width [w]	24.25 mm
Height [h]	14.4 mm
Length [l]	13.1 mm
Installed height	11 mm
Solder pin length [P]	3.4 mm
Pin dimensions	0.8 x 0.8 mm

## PCB design

Hole diameter	1.2 mm
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## 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
Result	Test passed

### Polarization and coding

Specification	IEC 60512-13-5:2006-02
Result	Test passed

### Contact holder in insert

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Specification	IEC 60512-15-1:2008-05
Contact holder in insert Requirements >20 N	Test passed

## Insertion and withdrawal forces

Specification	IEC 60512-13-2:2006-02
Result	Test passed
No. of cycles	25
Insertion strength per pos. approx.	7 N
Withdraw strength per pos. approx.	4 N

## Electrical tests

### Thermal test | Test group C

Specification	IEC 60512-5-1:2002-02
Tested number of positions	16

### Insulation resistance

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

### Air clearances and creepage distances |

Insulating material group	I
Comparative tracking index (IEC 60112)	CTI 600
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)	1.5 mm
Rated insulation voltage (II/2)	320 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 mm

## Environmental and real-life conditions

### Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance R <sub>1</sub>	1.7 mΩ
Contact resistance R <sub>2</sub>	1.8 mΩ
Insertion/withdrawal cycles	25

### Climatic test

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

## Vibration test

Specification	IEC 60068-2-6:2007-12
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 (pos. and neg.)

## Ambient conditions

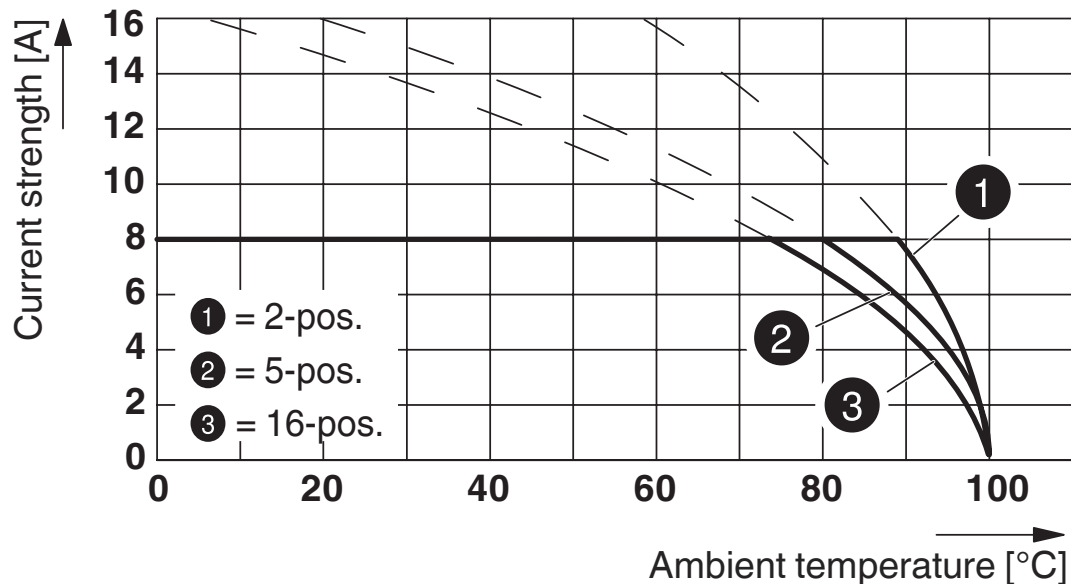
Ambient temperature (storage/transport)	-40 °C ... 70 °C
Relative humidity (storage/transport)	30 % ... 70 %
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 100 °C (dependent on the derating curve)

## Packaging specifications

Type of packaging	packed in cardboard
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Drawings

Diagram



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

Diagram



Type: FK-MCP 1,5/...-ST-3,81 with SMC 1,5/...-G-3,81



Type: FMC 1,5/...-ST-3,81 with SMC 1,5/...-G-3,81



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

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Type: IMC 1,5/...-G-3,81 with SMC 1,5/...-G-3,81



Type: MCVR 1,5/...-ST-3,81 with SMC 1,5/...-G-3,81

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/1705224>

 <b>CSA</b> Approval ID: 13631				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B	300 V	8 A	-	-
D	300 V	8 A	-	-

 <b>cULus Recognized</b> Approval ID: E60425-20110128				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
B	300 V	8 A	-	-
D	300 V	8 A	-	-

 <b>VDE Zeichengenehmigung</b> Approval ID: 40011723				
	Nominal voltage $U_N$	Nominal current $I_N$	Cross section AWG	Cross section $\text{mm}^2$
keine	160 V	8 A	-	-

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## Classifications

### ECLASS

ECLASS-13.0	27460201
ECLASS-15.0	27460201

### ETIM

ETIM 10.0	EC002637
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### UNSPSC

UNSPSC 21.0	39121400
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### 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%
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### EF3.1 Climate Change

CO2e kg	0.017 kg CO2e
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