

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector



1706255

<https://www.phoenixcontact.com/pc/products/1706255>

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PCB connector, nominal cross section: 0.5 mm<sup>2</sup>, color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Gold, type of contact: Socket, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: FMC 0,5/..-ST, pitch: 2.54 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: COMBICON FMC 0,5, locking: without, mounting: without, type of packaging: packed in cardboard, Fixed coding of the first position, can be combined with MC(V) 0,5/...-G-2,54...C1 headers

## Your advantages

- Gold-plated contacts ensure transfer quality remains stable over the long term
- Time saving push-in connection, tools not required
- Defined contact force ensures that contact remains stable over the long term
- Intuitive use through colour coded actuation lever
- Optimized for tight installation situations: operation and conductor connection from one direction

## Commercial Data

Item number	1706255
Packing unit	100 pc
Minimum order quantity	100 pc
Note	Made to Order (non-returnable)
Product Key	AAAFAA
Catalog Page	Page 175 (C-1-2013)
GTIN	4046356841160
Weight per Piece (including packing)	2.05 g
Weight per Piece (excluding packing)	2.05 g
Customs tariff number	85366990
Country of origin	PL

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## Technical Data

### Product properties

Type	Standard
Product line	COMBICON Connectors XS
Product type	PCB connector
Product family	FMC 0,5/..-ST
Number of positions	8
Pitch	2.54 mm
Number of connections	8
Number of rows	1
Mounting flange	without
Number of potentials	8

### Electrical properties

Nominal current $I_N$	6 A
Nominal voltage $U_N$	160 V
Degree of pollution	3
Contact resistance	2.7 m $\Omega$
Rated voltage (III/3)	32 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)	160 V
Rated surge voltage (II/2)	2.5 kV

### Connection data

#### Connection technology

Type	Standard
Connector system	COMBICON FMC 0,5
Nominal cross section	0.5 mm <sup>2</sup>
Type of contact	Socket

#### Interlock

Locking type	without
Mounting flange	without

#### Conductor connection

Connection method	Push-in spring connection
Conductor/PCB connection direction	0 °
Conductor cross section rigid	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
Conductor cross section AWG	26 ... 20
Conductor cross section flexible, with ferrule without plastic	0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>

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1706255

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sleeve	
Conductor cross section, flexible, with ferrule, with plastic sleeve	0.14 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>
Cylindrical gauge a x b / diameter	- / 1.0 mm
Stripping length	7 mm

## 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	partially gold-plated
Metal surface terminal point (top layer)	Tin (5 - 7 µm Sn)
Metal surface terminal point (middle layer)	Nickel (2 - 3 µm Ni)
Metal surface contact area (top layer)	Gold (0.25 Au)
Metal surface contact area (middle layer)	Nickel (2 - 3 µm Ni)

### Material data - housing

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

### Material data - actuating element

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

## Dimensions

Dimensional drawing	
Pitch	2.54 mm
Width [w]	20.82 mm
Height [h]	5.35 mm
Length [l]	14 mm

## Mounting

Connection method	Push-in spring connection
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## Mechanical tests

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector



1706255

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## Conductor connection

Specification	IEC 60999-1:1999-11
Result	Test passed

## Test for conductor damage and slackening

Specification	IEC 60999-1:1999-11
Result	Test passed

## Repeated connection and disconnection

Specification	IEC 60999-1:1999-11
Result	Test passed

## Pull-out test

Specification	IEC 60999-1:1999-11
Conductor cross section/conductor type/tractive force setpoint/actual value	0.14 mm <sup>2</sup> / solid / > 10 N
	0.14 mm <sup>2</sup> / flexible / > 10 N
	0.5 mm <sup>2</sup> / solid / > 20 N
	0.5 mm <sup>2</sup> / flexible / > 20 N

## Insertion and withdrawal forces

Result	Test passed
No. of cycles	100
Insertion strength per pos. approx.	2 N
Withdraw strength per pos. approx.	2 N

## 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

## Visual inspection

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

## Dimension check

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

## Environmental and real-life conditions

### Vibration test

Specification	IEC 60068-2-6:2007-12
Frequency	10 - 500 - 10 Hz
Sweep speed	1 octave/min
Amplitude	0.35 mm (10 Hz ... 60.1 Hz)

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1706255

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Sweep speed	5g (60.1 Hz ... 500 Hz)
Test duration per axis	2 h

## Durability test

Specification	IEC 60512-9-1:2010-03
Impulse withstand voltage at sea level	2.95 kV
Contact resistance R <sub>1</sub>	2.7 mΩ
Contact resistance R <sub>2</sub>	2.6 mΩ
Insertion/withdrawal cycles	100
Insulation resistance, neighboring positions	> 5 MΩ

## Climatic test

Specification	DIN 50018:2013-05
Corrosive stress	1.0 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/3 cycles
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

## 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

### Temperature cycles

Specification	IEC 60999-1:1999-11
Result	Test passed

### 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)	32 V
Rated surge voltage (III/3)	2.5 kV
minimum clearance value - non-homogenous field (III/3)	0.8 mm
minimum creepage distance (III/3)	1.3 mm
Rated insulation voltage (III/2)	160 V
Rated surge voltage (III/2)	2.5 kV

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minimum clearance value - non-homogenous field (III/2)	1.5 mm
minimum creepage distance (III/2)	1.6 mm
Rated insulation voltage (II/2)	160 V
Rated surge voltage (II/2)	2.5 kV
minimum clearance value - non-homogenous field (II/2)	0.5 mm
minimum creepage distance (II/2)	1.6 mm

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector

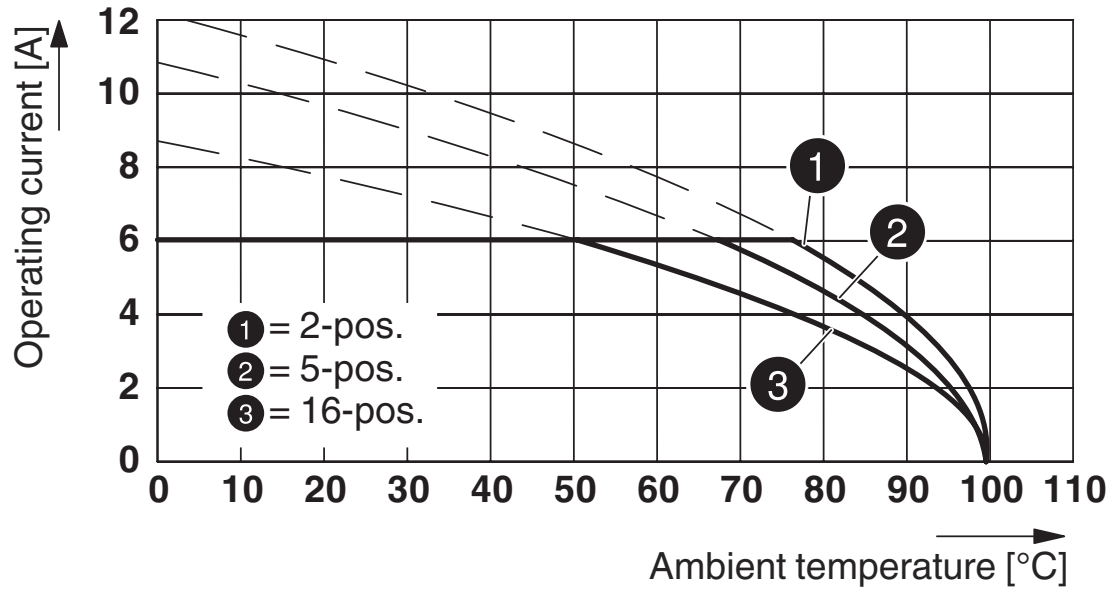


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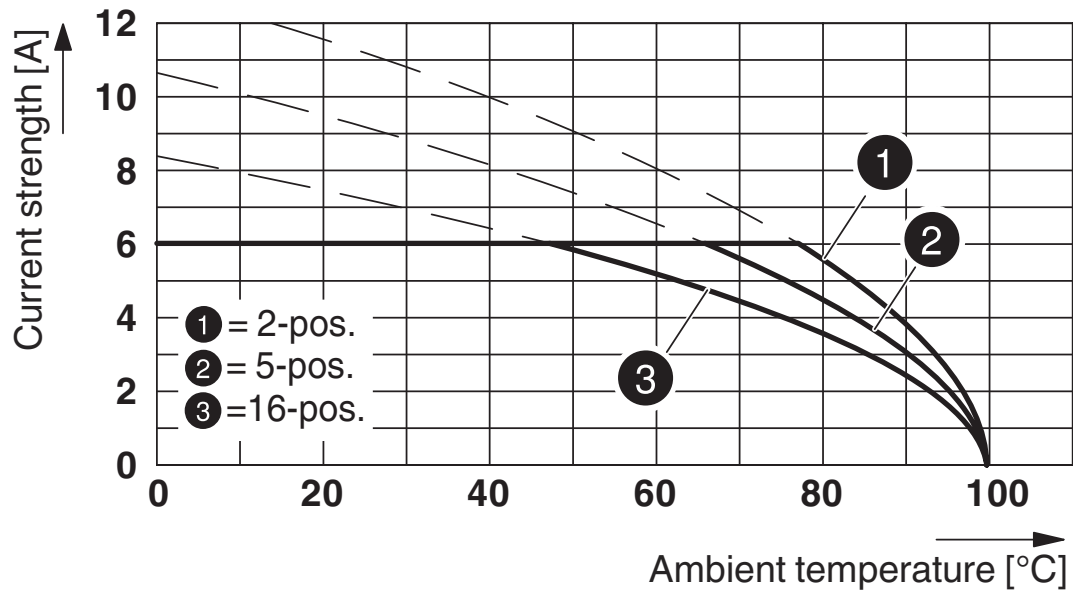
## Drawings

Diagram



Type: FMC 0,5/...-ST-2,54 with MC 0,5/...-G-2,54 SMD R..

Diagram



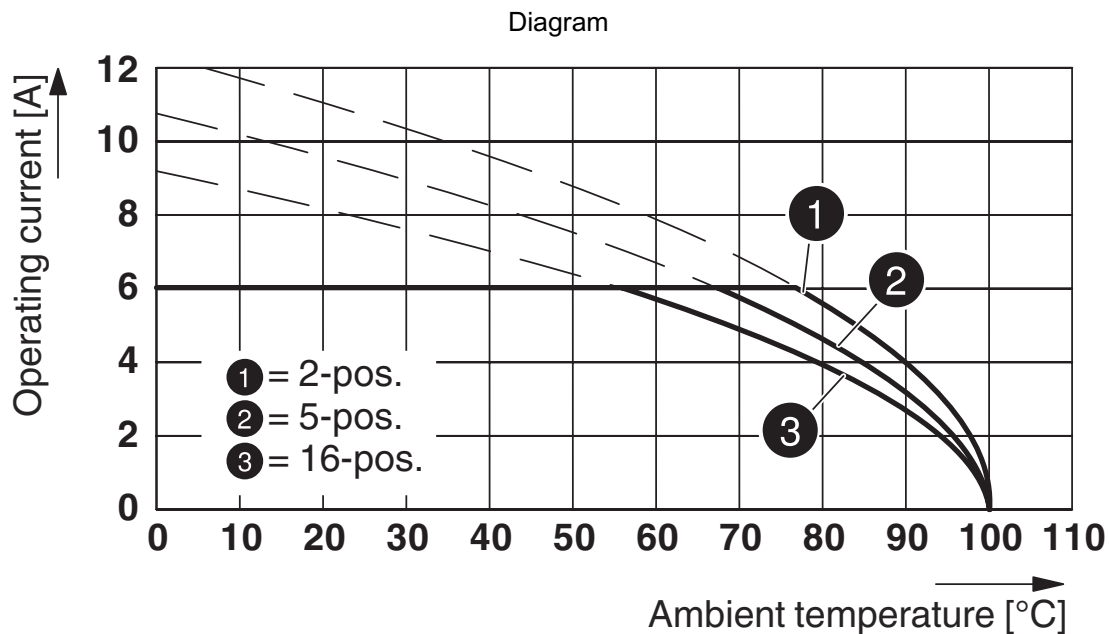
Type: FMC 0,5/...-ST-2,54 with MC 0,5/...-G-2,54 P20 THR R..

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector

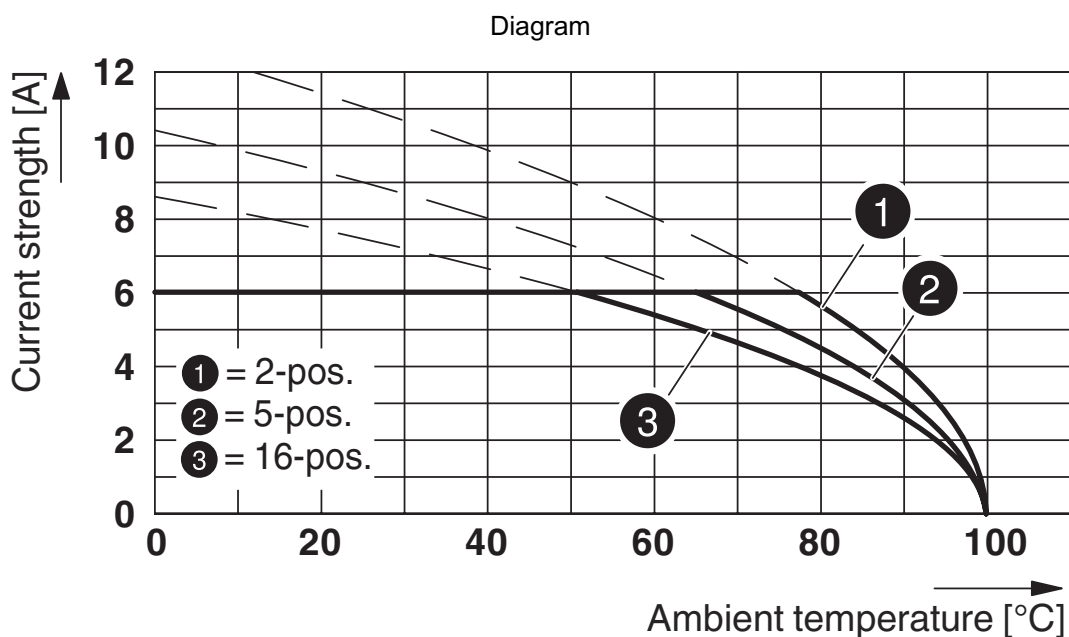


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Type FMC 0,5/...-ST-2,54 with MCV 0,5/...-G-2,54 SMD R..



Type: FMC 0,5/...-ST-2,54 with MCV 0,5/...-G-2,54 P20 THR R..

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector




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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/1706255>

 <b>IECEE CB Scheme</b> Approval ID: DE1-63595				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $mm^2$
	160 V	6 A	-	0.14 - 0.5

 <b>EAC</b> Approval ID: B.01687				
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 <b>cULus Recognized</b> Approval ID: E60425-19920306				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $mm^2$
Use group B				
Field wiring	150 V	5 A	26 - 20	-
Factory wiring	150 V	6 A	26 - 20	-
Use group C				
Factory wiring	50 V	6 A	26 - 20	-
Use group F				
Field wiring	160 V	5 A	26 - 20	-

 <b>VDE Gutachten mit Fertigungsüberwachung</b> Approval ID: 40042258				
	Nominal Voltage $U_N$	Nominal Current $I_N$	Cross Section AWG	Cross Section $mm^2$
	160 V	6 A	-	0.14 - 0.5

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector



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## Classifications

### ECLASS

ECLASS-11.0	27460202
ECLASS-12.0	27460202
ECLASS-13.0	27460202

### ETIM

ETIM 8.0	EC002638
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### UNSPSC

UNSPSC 21.0	39121400
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# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector



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## Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

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## Accessories

### SZS 0,4X2,0 - Screwdriver

1205202

<https://www.phoenixcontact.com/pc/products/1205202>



Micro screwdriver, bladed, size: 0.4 x 2.0 x 60 mm, 2-component grip, with non-slip grip and twist cap

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### SK 2,54/2,8:FORTL.ZAHLEN - Marker card

0804853

<https://www.phoenixcontact.com/pc/products/0804853>



Marker card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 99, mounting type: adhesive, for terminal block width: 2.54 mm, lettering field size: 2.54 x 2.8 mm

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector



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A 0,25- 7 - Ferrule

3202478

<https://www.phoenixcontact.com/pc/products/3202478>



Ferrule, length: 7 mm, color: silver

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A 0,34- 7 - Ferrule

3009202

<https://www.phoenixcontact.com/pc/products/3009202>



Ferrule, length: 7 mm, color: silver

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector



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## CRIMPFOX 6 - Crimping pliers

1212034

<https://www.phoenixcontact.com/pc/products/1212034>



Crimping pliers, for ferrules without insulating collar according to DIN 46228 Part 1 and ferrules with insulating collar according to DIN 46228 Part 4, 0.25 mm<sup>2</sup> ... 6.0 mm<sup>2</sup>, lateral entry, trapezoidal crimp

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## MC 0,5/ 8-G-2,54 P20THRR44C1 - PCB header

1706217

<https://www.phoenixcontact.com/pc/products/1706217>



PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Gold, type of contact: Pin, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: MC 0,5/..-G-THR, pitch: 2.54 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON FMC 0,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape, Fixed coding of the first position, can be combined with the FMC 0,5/...-ST-2,54 C1 connector

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector



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## MCV 0,5/ 8-G-2,54 P20THRR44C1 - PCB header

1706180

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PCB headers, nominal cross section:  $0.5 \text{ mm}^2$ , color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Gold, type of contact: Pin, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: MCV 0,5/...-G-THR, pitch: 2.54 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON FMC 0,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape, Fixed coding of the first position, can be combined with the FMC 0,5/...-ST-2,54 C1 connector

## MC 0,5/ 8-G-2,54 SMDR44C1 - PCB header

1706143

<https://www.phoenixcontact.com/pc/products/1706143>



PCB headers, nominal cross section:  $0.5 \text{ mm}^2$ , color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Gold, type of contact: Pin, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: MC 0,5/...-G-SMD, pitch: 2.54 mm, mounting: SMD soldering, pin layout: Linear pad geometry, number of solder pins per potential: 1, plug-in system: COMBICON FMC 0,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape, Fixed coding of the first position, can be combined with the FMC 0,5/...-ST-2,54 C1 connector

# FMC 0,5/ 8-ST-2,54 C1 - Printed-circuit board connector



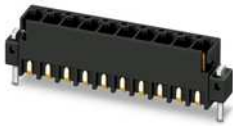
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## MCV 0,5/ 8-G-2,54 SMDR44C1 - PCB header

1706104

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PCB headers, nominal cross section: 0.5 mm<sup>2</sup>, color: black, nominal current: 6 A, rated voltage (III/2): 160 V, contact surface: Gold, type of contact: Pin, number of potentials: 8, number of rows: 1, number of positions: 8, number of connections: 8, product range: MCV 0,5/..-G-SMD, pitch: 2.54 mm, mounting: SMD soldering, pin layout: Linear pad geometry, solder pin [P]: 2 mm, number of solder pins per potential: 1, plug-in system: COMBICON FMC 0,5, Pin connector pattern alignment: Standard, locking: without, mounting: without, type of packaging: 44 mm wide tape, Fixed coding of the first position, can be combined with the FMC 0,5/...-ST-2,54 C1 connector

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