

# Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

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PCB headers, nominal current: 10 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, color: green, contact surface: Tin, mounting: Wave soldering, pin layout: Linear pinning, solder pin [P]: 3.9 mm, The article can be aligned to create different nos. of positions! In combination with MVSTB or FKCV plug components, both an MVSTBW (or FKCVW) and an MVSTBR plug (or FKCVR) must be used. Combination with TMSTBP plug components is not possible!

The figure shows a 10-position version of the product

## Your advantages

- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✓ Easy PCB replacement thanks to plug-in modules
- ✓ Well-known mounting principle allows worldwide use
- ✓ Conductor connection on several levels enables higher contact density



## Key Commercial Data

|              |               |
|--------------|---------------|
| Packing unit | 50 pc         |
| GTIN         |               |
| GTIN         | 4017918184223 |

## Technical data

### Item properties

|                           |                     |
|---------------------------|---------------------|
| Brief article description | Feed-through header |
| Plug-in system            | CLASSIC COMBICON    |
| Type of contact           | Male connector      |
| Range of articles         | MDSTBVA 2,5/...-G   |
| Pitch                     | 5.08 mm             |
| Number of positions       | 9                   |
| Mounting type             | Wave soldering      |
| Pin layout                | Linear pinning      |
| Locking                   | without             |
| Number of levels          | 2                   |
| Number of connections     | 18                  |

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## Technical data

### Item properties

|                      |    |
|----------------------|----|
| Number of potentials | 18 |
|----------------------|----|

### Electrical parameters

|                             |       |
|-----------------------------|-------|
| Nominal current             | 10 A  |
| Nom. voltage                | 320 V |
| Rated voltage               | 250 V |
| Rated voltage (III/2)       | 320 V |
| Rated voltage (II/2)        | 400 V |
| Rated surge voltage (III/3) | 4 kV  |
| Rated surge voltage (III/2) | 4 kV  |
| Rated surge voltage (II/2)  | 4 kV  |

### 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 - 7 µm Sn)   |
| Metal surface contact area (middle layer)   | Nickel (2 - 3 µm Ni),   |
| Metal surface soldering area (top layer)    | Tin (5 - 7 µm Sn)   |
| Metal surface soldering area (middle layer) | Nickel (2 - 3 µm Ni)  |

### Material data - housing

|  |              |
|--|--------------|
| Housing color                          | green (6021) |
| Insulating material                    | PBT          |
| Insulating material group              | IIIa         |
| CTI according to IEC 60112             | 225          |
| Flammability rating according to UL 94 | V0           |

### Dimensions for the product

|                             |          |
|-----------------------------|----------|
| Length [ l ]                | 23.7 mm  |
| Width [ w ]                 | 50.26 mm |
| Height [ h ]                | 26 mm    |
| Pitch                       | 5.08 mm  |
| Height (without solder pin) | 22.1 mm  |
| Solder pin [P]              | 3.9 mm   |
| Pin dimensions              | 1 x 1 mm |

### Dimensions for PCB design

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

### Packaging information

|                    |                     |
|--------------------|---------------------|
| Type of packaging  | packed in cardboard |
| Pieces per package | 50                  |

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## Technical data

### Packaging information

|                            |      |
|----------------------------|------|
| Denomination packing units | Pcs. |
|----------------------------|------|

### Ambient conditions

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

### Air clearances and creepage distances

|   |                     |
|---|---------------------|
| Clearances and creepage distances               | IEC 60664-1:2007-04 |
| Specification                                   | IEC 60664-1:2007-04 |
| Minimum clearance - inhomogeneous field (III/3) | 3 mm                |
| Minimum clearance - inhomogeneous field (III/2) | 3 mm                |
| Minimum clearance - inhomogeneous field (II/2)  | 3 mm                |
| Minimum creepage distance value (III/3)         | 4 mm                |
| Minimum creepage distance value (III/2)         | 3.2 mm              |
| Minimum creepage distance value (II/2)          | 4 mm                |

### Mechanical tests (A)

|  |             |
|--|-------------|
| Test specification                           | IEC 61984   |
| Insertion strength per pos. approx.          | 8 N         |
| Withdraw strength per pos. approx.           | 6 N         |
| Polarization when inserted requirement >20 N | Test passed |
| Contact holder in insert requirements >20 N  | Test passed |

### Durability tests (B)

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-9-1:2010-03 |
| Insertion/withdrawal cycles                  | 25                    |
| Contact resistance R <sub>2</sub> 1st level  | 2.3 mΩ                |
| Contact resistance R <sub>2</sub> 2nd level  | 1.6 mΩ                |
| Impulse withstand voltage at sea level       | 4.8 kV                |
| Power-frequency withstand voltage            | 2.21 kV               |
| Insulation resistance, neighboring positions | > 0.9 TΩ              |

### Thermal tests (C)

|   |                       |
|---|-----------------------|
| Specification                                   | IEC 60512-5-1:2002-02 |
| Number of positions                             | 16                    |
| Conductor cross section                         | 2.5 mm <sup>2</sup>   |
| Test current                                    | 10 A DC               |
| Upper limiting temperature requirements <100 °C | Test passed           |

### Climatic tests (D)

|                |                  |
|----------------|------------------|
| Specification  | ISO 6988:1985-02 |
| Cold stress    | -40 °C/2 h       |
| Thermal stress | 100 °C/168 h     |

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### Technical data

#### Climatic tests (D)

|  |   |
|--|---|
| Corrosive stress                       | 0.2 dm <sup>3</sup> SO <sub>2</sub> on 300 dm <sup>3</sup> /40 °C/1 cycle |
| Impulse withstand voltage at sea level | 4.8 kV  |
| Power-frequency withstand voltage      | 2.21 kV   |

#### Environmental and durability tests (E)

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| Specification                         | IEC 61984:2008-10                   |
| Result, degree of protection, IP code | Finger safety with IP20 test finger |

#### 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           | 5 g (60.1 - 150 Hz)    |
| Test duration per axis | 2.5 h                  |

#### Standards and Regulations

|  |        |
|--|--------|
| Connection in acc. with standard       | EN-VDE |
|  | CUL    |
| Flammability rating according to UL 94 | V0     |

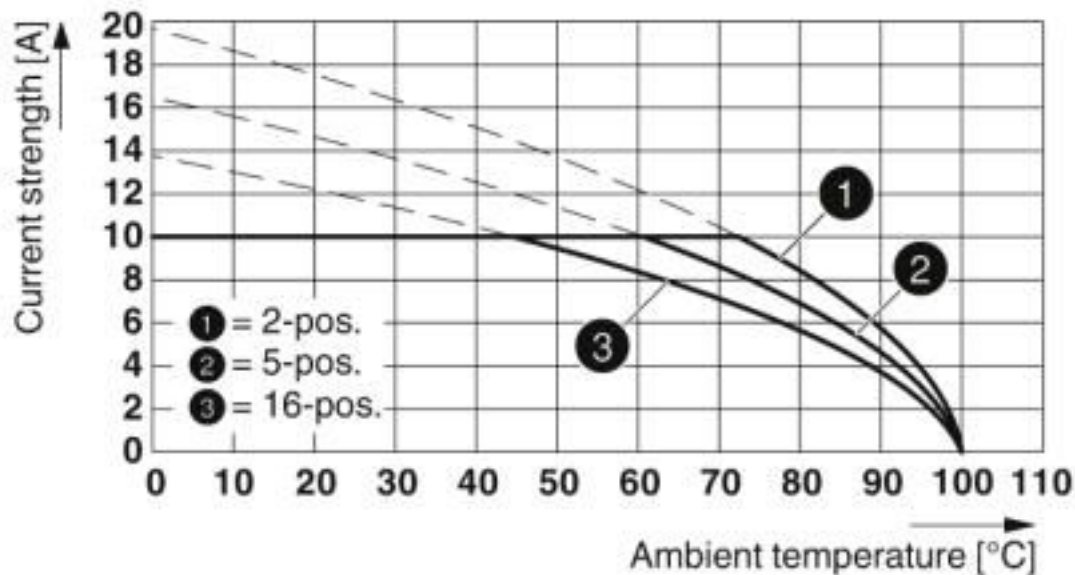
#### Environmental Product Compliance

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

### Drawings

## Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

Diagram



Type: FKC 2,5/...-ST-5,08 with MDSTBVA 2,5/...-G-5,08

### Classifications

eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27440402 |
| eCl@ss 4.0    | 27260700 |
| eCl@ss 4.1    | 27260700 |
| eCl@ss 5.0    | 27260700 |
| eCl@ss 5.1    | 27260700 |
| eCl@ss 6.0    | 27260700 |
| eCl@ss 7.0    | 27440402 |
| eCl@ss 8.0    | 27440402 |
| eCl@ss 9.0    | 27440402 |

### ETIM

|          |          |
|----------|----------|
| ETIM 3.0 | EC001121 |
| ETIM 4.0 | EC002637 |
| ETIM 5.0 | EC002637 |
| ETIM 6.0 | EC002637 |
| ETIM 7.0 | EC002637 |

### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211810 |
| UNSPSC 7.0901 | 39121409 |
| UNSPSC 11     | 39121409 |
| UNSPSC 12.01  | 39121409 |

# Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

## Classifications

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 13.2 | 39121409 |
| UNSPSC 18.0 | 39121409 |
| UNSPSC 19.0 | 39121409 |
| UNSPSC 20.0 | 39121409 |
| UNSPSC 21.0 | 39121409 |

## Approvals

### Approvals

#### Approvals

IECEE CB Scheme / EAC / cULus Recognized / VDE Zeichengenehmigung

#### Ex Approvals

### Approval details

|                    |       |   |                |
|--------------------|-------|---|----------------|
| IECEE CB Scheme    |       | <a href="http://www.iecee.org/">http://www.iecee.org/</a> | DE1-60988-B1B2 |
| Nominal voltage UN | 250 V |   |                |
| Nominal current IN | 10 A  |   |                |

|     |  |         |
|-----|--|---------|
| EAC |  | B.01687 |
|-----|--|---------|

|                    |       |   |                 |
|--------------------|-------|---|-----------------|
| cULus Recognized   |       | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | E60425-19931011 |
|                    | B     | D   |                 |
| Nominal voltage UN | 300 V | 300 V   |                 |
| Nominal current IN | 12 A  | 10 A  |                 |

|                        |       |   |          |
|------------------------|-------|---|----------|
| VDE Zeichengenehmigung |       | <a href="http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx">http://www2.vde.com/de/Institut/Online-Service/VDE-gepruefteProdukte/Seiten/Online-Suche.aspx</a> | 40050648 |
| Nominal voltage UN     | 250 V |   |          |

## Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

### Approvals

|                    |      |
|--------------------|------|
| Nominal current IN | 10 A |
|--------------------|------|

### Accessories

#### Accessories

#### Coding element

Coding section - CR-MSTB - 1734401



Coding section, inserted into the recess in the header or the inverted plug, red insulating material

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#### Filler plug

Accessories - MSTB-BL - 1755477



Keying cap, for forming sections, plugs onto header pin, green insulating material

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#### Labeled terminal marker

Marker card - SK 5,08/3,8:FORTL.ZAHLEN - 0804293



Marker card, Card, white, labeled, horizontal: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... (99)100, mounting type: adhesive, for terminal block width: 5.08 mm, lettering field size: 5.08 x 3.8 mm

Marker for terminal blocks - SK 5,08/3,8: 0-9 - 0804303



Marker for terminal blocks, Card, white, labeled, horizontal: consecutive numbers 0 ... 9, mounting type: adhesive, for terminal block width: 5.08 mm, lettering field size: 5.08 x 3.8 mm

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#### Marker pen

## Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

### Accessories

Marker pen - B-STIFT - 1051993



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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### Terminal marking

Marker card - SK 5,08/3,8:UNBEDRUCKT - 0805412



Marker card, Card, white, unlabeled, can be labeled with: Marker pen, mounting type: adhesive, for terminal block width: 5.08 mm, lettering field size: 5.08 x 3.8 mm

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### Additional products

Printed-circuit board connector - TVMSTB 2,5/ 9-ST-5,08 - 1719079



PCB connector, nominal current: 12 A, rated voltage (III/2): 400 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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Printed-circuit board connector - MSTBT 2,5/ 9-ST-5,08 - 1734207



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

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Printed-circuit board connector - FKCN 2,5/ 9-ST-5,08 - 1754636



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Push-in spring connection, color: green, contact surface: Tin



## Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

### Accessories

#### Printed-circuit board connector - MSTB 2,5/ 9-ST-5,08 - 1757080

PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin



#### Printed-circuit board connector - MSTB 2,5/ 9-STZ-5,08 - 1764316

PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin



#### Printed-circuit board connector - MSTBP 2,5/ 9-ST-5,08 - 1769081

PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin



#### Printed-circuit board connector - FRONT-MSTB 2,5/ 9-ST-5,08 - 1777358

PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Front screw connection, color: green, contact surface: Tin



#### Printed-circuit board connector - MVSTBR 2,5/ 9-ST-5,08 - 1792317

PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin



## Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

### Accessories

#### Printed-circuit board connector - MVSTBW 2,5/ 9-ST-5,08 - 1792825



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

#### Printed-circuit board connector - MSTBC 2,5/ 9-ST-5,08 - 1808887



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Crimp connection, color: green, Corresponding female crimp contacts with current [A] and conductor cross section range [mm<sup>2</sup>] data: 10A/MSTBC-MT 0,5-1,0 (3190564); 10A/MSTBC-MT 0,5-1,0 BA (3190645); 12A/MSTBC-MT 1,5-2,5 (3190551); 12A/MSTBC-MT 1,5-2,5 BA (3190658). BA = Bandkontakte

#### Printed-circuit board connector - MSTBC 2,5/ 9-STZ-5,08 - 1809572



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Crimp connection, color: green, Corresponding female crimp contacts with current [A] and conductor cross section range [mm<sup>2</sup>] data: 10A/MSTBC-MT 0,5-1,0 (3190564); 10A/MSTBC-MT 0,5-1,0 BA (3190645); 12A/MSTBC-MT 1,5-2,5 (3190551); 12A/MSTBC-MT 1,5-2,5 BA (3190658). BA = Bandkontakte

#### Printed-circuit board connector - MSTBU 2,5/ 9-STD-5,08 - 1824191



Direct plug-in block, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin, mounting: Direct mounting

#### Printed-circuit board connector - MSTBU 2,5/ 9-ST-5,08-FL - 1824421



Direct plug-in block, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin, mounting: Direct mounting

## Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

### Accessories

#### Printed-circuit board connector - SMSTB 2,5/ 9-ST-5,08 - 1826351



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin

#### Printed-circuit board connector - MSTBVK 2,5/ 9-ST-5,08 - 1831388



DIN rail connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin, mounting: DIN rail

#### Printed-circuit board connector - UMSTBVK 2,5/ 9-ST-5,08 - 1833881



DIN rail connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin, mounting: DIN rail

#### Printed-circuit board connector - TMSTBP 2,5/ 9-ST-5,08 - 1853081



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin, The plug allows conductors to be looped through from module to module.

#### Printed-circuit board connector - FKC 2,5/ 9-ST-5,08 - 1873126

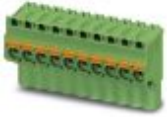


PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Push-in spring connection, color: green, contact surface: Tin

## Feed-through header - MDSTBVA 2,5/ 9-G-5,08 - 1845400

### Accessories

#### Printed-circuit board connector - FKCVW 2,5/ 9-ST-5,08 - 1873728



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Push-in spring connection, color: green, contact surface: Tin

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#### Printed-circuit board connector - FKCVR 2,5/ 9-ST-5,08 - 1874028



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Push-in spring connection, color: green, contact surface: Tin

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#### Printed-circuit board connector - FKCT 2,5/ 9-ST-5,08 - 1902181



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Push-in spring connection, color: green, contact surface: Tin

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#### Printed-circuit board connector - TFKC 2,5/ 9-ST-5,08 - 1962671



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Push-in spring connection, color: green, contact surface: Tin

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#### Printed-circuit board connector - FKCS 2,5/ 9-ST-5,08 - 1975147



PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm<sup>2</sup>, number of positions: 9, pitch: 5.08 mm, connection method: Push-in spring connection, color: green, contact surface: Tin

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