

# FP 1,27/ 12-FV 9,05 - SMD female connectors



1714999

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SMD female connector, nominal current: 1.4 A, Test voltage: 500 V AC, number of positions: 12, pitch: 1.27 mm, color: black, contact surface: Gold, contact connection type: Socket, mounting: SMD soldering

## Your advantages

- Gold-plated contacts ensure transfer quality remains stable over the long term
- Compact, high-position board-to-board or wire-to-board connectors for space-saving device designs
- Stacked, coplanar or orthogonal PCB connections enable maximum flexibility in the device
- Male and female connectors of different height can be combined – for individual PCB spacing of 8 mm ... 13.8 mm

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1714999       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 280 pc        |
| Sales key                            | AA24          |
| Product key                          | AAXAAC        |
| GTIN                                 | 4055626402802 |
| Weight per piece (including packing) | 1.976 g       |
| Weight per piece (excluding packing) | 2 g           |
| Customs tariff number                | 85366930      |
| Country of origin                    | CN            |

## Technical data

### Product properties

|                      |                      |
|----------------------|----------------------|
| Product type         | SMD female connector |
| Product family       | FR 1,27/...-FV 9,05  |
| Number of positions  | 12                   |
| Pitch                | 1.27 mm              |
| Number of rows       | 2                    |
| Number of potentials | 12                   |
| Pin layout           | Linear pad geometry  |

### Electrical properties

|                            |   |
|----------------------------|---|
| Nominal current $I_N$      | 1.4 A IEC 60512-5-2:2002-02 (at 20°C 50-pos.) |
| Nominal voltage $U_N$      | AC  |
| Degree of pollution        | 3   |
| Contact resistance         | 25 mΩ   |
| Test voltage               | 500 V AC IEC 60512-4-1:2003                   |
| Rated voltage (III/3)      | 500 V   |
| Rated voltage (II/2)       | 10 V  |
| Rated surge voltage (II/2) | 0.8 kV  |

### Mounting

|               |                     |
|---------------|---------------------|
| Mounting type | SMD soldering       |
| Pin layout    | Linear pad geometry |

### Processing notes

|                                  |                  |
|----------------------------------|------------------|
| Process                          | Reflow soldering |
| Moisture Sensitive Level         | MSL 1            |
| Classification temperature $T_c$ | 260 °C           |

### 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                   | Selective coating  |
| Metal surface contact area (top layer)    | Gold (Au)  |
| Metal surface contact area (middle layer) | Nickel (Ni) Palladium nickel, (PdNi)   |
| Metal surface soldering area (top layer)  | Tin (Sn)   |

#### Material data - housing

|                           |              |
|---------------------------|--------------|
| Color (Housing)           | black (9005) |
| Insulating material       | LCP          |
| Insulating material group | IIIb         |

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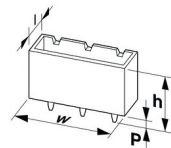
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|  |     |
|--|-----|
| CTI according to IEC 60112             | 175 |
| Flammability rating according to UL 94 | V0  |

## Notes

|                    |  |
|--------------------|--|
| Notes on operation | The permissible voltage during operation depends on the application, taking into consideration the air clearances and creepage distances within the scope of insulation requirements in accordance with IEC 60664-1. |
|--------------------|--|

## Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Pitch               | 1.27 mm  |
| Width [w]           | 12.71 mm   |
| Height [h]          | 9.75 mm  |
| Length [l]          | 7.2 mm   |
| Installed height    | 9.05 mm  |

## Application

|                   |  |
|-------------------|--|
| Contact cover     | 0.9 mm   |
| Center offset     | ± 0.7 mm in longitudinal and transverse direction  |
| Stack height      | 10.8 mm Tolerance: +1,5 mm (in combination with Range of articles:FP 1,27/...-MV 1,75)<br>12.3 mm Tolerance: +1,5 mm (in combination with Range of articles:FP 1,27/...-MV 3,25) |
| Wipe length       | 1.5 mm   |
| Angular tolerance | ± 4 ° in longitudinal direction<br>± 2 ° in transverse direction   |

## PCB design

|              |              |
|--------------|--------------|
| Pad geometry | 0.8 x 1.1 mm |
| Pin spacing  | 1.27 mm      |

## Mechanical tests

### Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 500         |
| Insertion strength per pos. approx. | 0.5 N       |
| Withdraw strength per pos. approx.  | 0.5 N       |

### Resistance of inscriptions

|               |                        |
|---------------|------------------------|
| Specification | IEC 60068-2-70:1995-12 |
| Result        | Test passed            |

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## Visual inspection

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

## Dimension check

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

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-2:2002-02 |
| Tested number of positions | 50                    |

### Insulation resistance

|  |                           |
|--|---------------------------|
| Specification                                | IEC 60512-3-1:2002-02     |
| Insulation resistance, neighboring positions | $\geq 10 \text{ G}\Omega$ |

### Air clearances and creepage distances |

|   |         |
|---|---------|
| Insulating material group                             | IIIb    |
| Comparative tracking index (IEC 60112)                | CTI 175 |
| Rated insulation voltage (III/3)                      | 500 V   |
| Rated insulation voltage (II/2)                       | 10 V    |
| Rated surge voltage (II/2)                            | 0.8 kV  |
| minimum clearance value - non-homogenous field (II/2) | 0.4 mm  |
| minimum creepage distance (II/2)                      | 0.4 mm  |
| Minimum value for clearance and creepage distance     | 0.4 mm  |

## Environmental and real-life conditions

### Vibration test

|                        |                            |
|------------------------|----------------------------|
| Specification          | IEC 60068-2-6:2007-12      |
| Frequency              | 10 - 2000 - 10 Hz          |
| Sweep speed            | 1 octave/min               |
| Amplitude              | 1.5 mm (10 Hz ... 60.1 Hz) |
| Sweep speed            | 20g (60.1 Hz ... 2000 Hz)  |
| Test duration per axis | 2.5 h                      |

### Durability test

|  |                                   |
|--|-----------------------------------|
| Specification                                | IEC 60512-9-1:2010-03 (following) |
| Impulse withstand voltage at sea level       | 0.8 kV                            |
| Contact resistance $R_1$                     | 25 m $\Omega$                     |
| Contact resistance $R_2$                     | 25 m $\Omega$                     |
| Insertion/withdrawal cycles                  | 500                               |
| Insulation resistance, neighboring positions | $\geq 10 \text{ G}\Omega$         |

### Climatic test

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|                                   |                        |
|-----------------------------------|------------------------|
| Specification                     | IEC 60512-11-7:2003-05 |
| Corrosive stress                  | Method 1, 10 days      |
| Power-frequency withstand voltage | 500 V AC               |

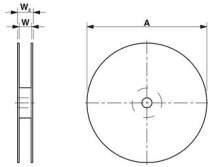
## Shocks

|                 |                                   |
|-----------------|-----------------------------------|
| Specification   | IEC 60068-2-27:2008-02            |
| Pulse shape     | Semi-sinusoidal                   |
| Acceleration    | 50g                               |
| Shock duration  | 11 ms                             |
| Test directions | X-, Y- and Z-axis (pos. and neg.) |

## Ambient conditions

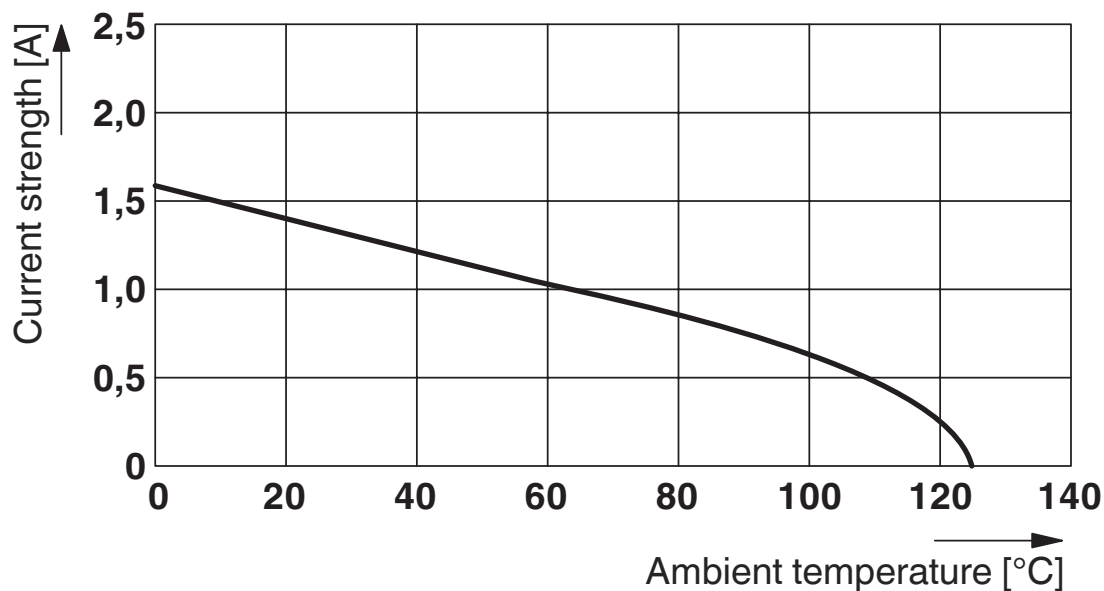
|   |                   |
|---|-------------------|
| Ambient temperature (operation)         | -55 °C ... 125 °C |
| Ambient temperature (storage/transport) | -40 °C ... 70 °C  |
| Relative humidity (storage/transport)   | 30 % ... 70 %     |
| Ambient temperature (assembly)          | -5 °C ... 100 °C  |

## Packaging specifications

|                             |  |
|-----------------------------|--|
| Dimensional drawing         |  |
| Type of packaging           | 24 mm wide tape  |
| [W] tape width              | 24 mm  |
| [W2] coil overall dimension | 30.4 mm  |
| [A] coil diameter           | 330 mm   |
| Outer packaging type        | Transparent-Bag  |
| ESD level                   | (D) electrostatically conductive   |
| Specification               | DIN EN 61340-5-1 (VDE 0300-5-1): 2008-07   |

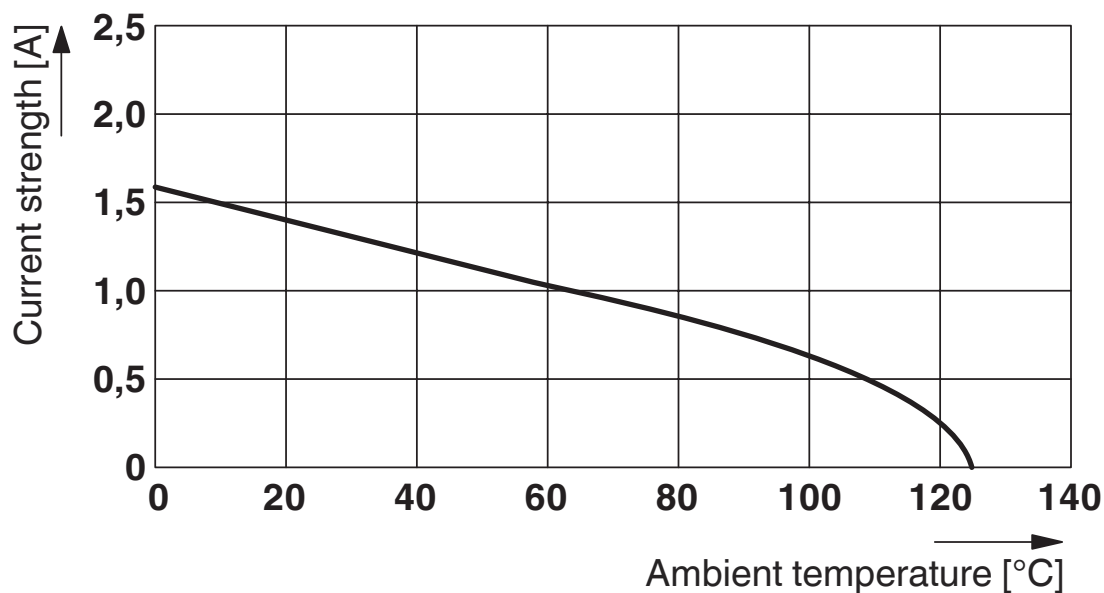
## Drawings

Diagram



Type: FP 1,27/...-FV 9,05 with FP 1,27/...-MV 1,75

Diagram



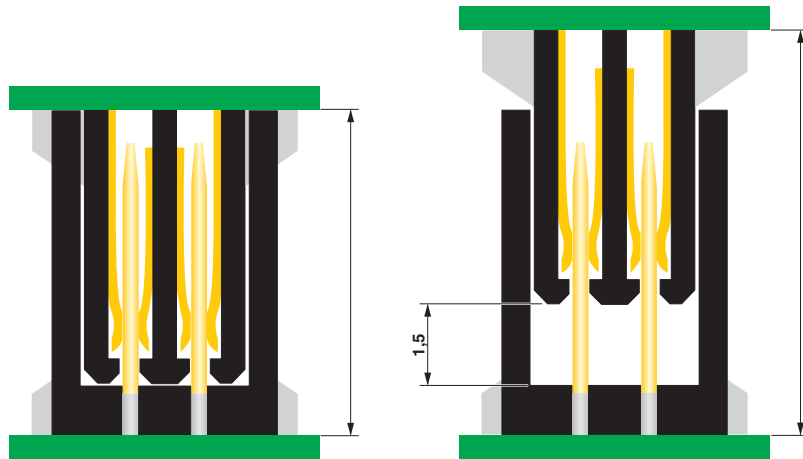
Type: FP 1,27/...-FV 9,05 with FP 1,27/...-MV 3,25

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Schematic diagram



# FP 1,27/ 12-FV 9,05 - SMD female connectors



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## Approvals

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**cULus Recognized**

Approval ID: E118976-20170331



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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27460201 |
| ECLASS-12.0 | 27460201 |
| ECLASS-13.0 | 27460201 |

### ETIM

|          |          |
|----------|----------|
| ETIM 8.0 | EC002637 |
|----------|----------|

### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 21.0 | 39121400 |
|-------------|----------|

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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

#### FP 1,27/ 12-MV 3,25 - SMD male connectors

1714924

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SMD male connector, nominal current: 1.4 A, Test voltage: 500 V AC, number of positions: 12, pitch: 1.27 mm, color: black, contact surface: Gold, contact connection type: Pin, mounting: SMD soldering

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#### FP 1,27/ 12-MV 1,75 - SMD male connectors

1714934

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SMD male connector, nominal current: 1.4 A, Test voltage: 500 V AC, number of positions: 12, pitch: 1.27 mm, color: black, contact surface: Gold, contact connection type: Pin, mounting: SMD soldering

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## FP 1,27/ 12-MH - SMD male connectors

1714912

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SMD male connector, nominal current: 1.4 A, Test voltage: 500 V AC, number of positions: 12, pitch: 1.27 mm, color: black, contact surface: Gold, contact connection type: Pin, mounting: SMD soldering



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