

# FQ 2,54D/ 50-PV- 380-1-BT - Pin strip



1156918

<https://www.phoenixcontact.com/us/products/1156918>

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SMD pin header, nominal current: 3 A, test voltage: 500 V AC, number of positions: 50, pitch: 2.54 mm, color: black, contact surface: Au, contact connection type: Pin, mounting: SMD soldering



## Your advantages

- Reliable mechanical and electrical connections thanks to the double-sided contact system
- Designed for integration into the SMT soldering process
- Clear and cost-optimized design
- Suitable for a multitude of applications
- Stacked, coplanar or orthogonal PCB connections enable maximum flexibility in the device

## Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 1156918       |
| Packing unit                         | 70 pc         |
| Minimum order quantity               | 70 pc         |
| Sales key                            | AA24          |
| Product key                          | AAXGBB        |
| GTIN                                 | 4063151159894 |
| Weight per piece (including packing) | 5.15 g        |
| Weight per piece (excluding packing) | 2.3 g         |
| Customs tariff number                | 85366930      |
| Country of origin                    | CN            |

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## Technical data

### 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. |
|--------------------|--|

### Product properties

|                     |                     |
|---------------------|---------------------|
| Product type        | SMD pin header      |
| Product family      | FQ 2,54D/...-PV     |
| Number of positions | 50                  |
| Pitch               | 2.54 mm             |
| Number of rows      | 2                   |
| Pin layout          | Linear pad geometry |

### Electrical properties

#### Properties

|                       |                                |
|-----------------------|--------------------------------|
| Nominal current $I_N$ | 3 A (at 20°C 80-pos.)          |
| Contact resistance    | 20 mΩ                          |
| Test voltage          | 500 V AC IEC 60512-4-1:2003-05 |

### Dimensions

|                     |         |
|---------------------|---------|
| Dimensional drawing |         |
| Pitch               | 2.54 mm |
| Width [w]           | 63.5 mm |
| Height [h]          | 10.2 mm |
| Length [l]          | 7.6 mm  |
| Installed height    | 8.8 mm  |

#### Application

|               |  |
|---------------|--|
| Contact cover | 0.4 mm   |
| Stack height  | 13.6 mm Tolerance: +1.3 mm (in combination with Range of articles:FQ 2,54D/...-SV) |
| Wipe length   | 1.3 mm   |

#### PCB design

|              |               |
|--------------|---------------|
| Pad geometry | 1.02 x 3.4 mm |
|--------------|---------------|

### Material specifications

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## 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)  |
| Metal surface soldering area (top layer)  | Tin (Sn)   |

## Material data - housing

|  |              |
|--|--------------|
| Color (Housing)                        | black (9005) |
| Insulating material                    | PA           |
| Insulating material group              | I            |
| CTI according to IEC 60112             | 600          |
| Flammability rating according to UL 94 | V0           |

## Connector

### Connection 1

|                            |     |
|----------------------------|-----|
| Insulating material        | PA  |
| CTI according to IEC 60112 | 600 |

## Electrical tests

### Thermal test | Test group C

|                            |                       |
|----------------------------|-----------------------|
| Specification              | IEC 60512-5-2:2002-02 |
| Tested number of positions | 80                    |

### Insulation resistance

|  |                       |
|--|-----------------------|
| Specification                                | IEC 60512-3-1:2002-02 |
| Insulation resistance, neighboring positions | > 1 GΩ                |

### Air clearances and creepage distances |

|   |        |
|---|--------|
| Insulating material group                         | I      |
| Minimum value for clearance and creepage distance | 0.4 mm |

## Mechanical tests

### Insertion and withdrawal forces

|                                     |             |
|-------------------------------------|-------------|
| Result                              | Test passed |
| No. of cycles                       | 100         |
| Insertion strength per pos. approx. | 2.9 N       |
| Withdraw strength per pos. approx.  | 2.9 N       |

### Visual inspection

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

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## 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 - 55 - 10 Hz       |
| Sweep speed            | 1 octave/min          |
| Amplitude              | 1.52 mm               |
| Acceleration           | 181 m/s <sup>2</sup>  |
| Test duration per axis | 2 h                   |
| Test directions        | X-, Y- and Z-axis     |

### Durability test

|  |                                   |
|--|-----------------------------------|
| Specification                                | IEC 60512-9-1:2010-03 (following) |
| Contact resistance R <sub>1</sub>            | 20 mΩ                             |
| Contact resistance R <sub>2</sub>            | 30 mΩ                             |
| Insertion/withdrawal cycles                  | 100                               |
| Insulation resistance, neighboring positions | > 1 GΩ                            |

### Ambient conditions

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

## Mounting

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

### Processing notes

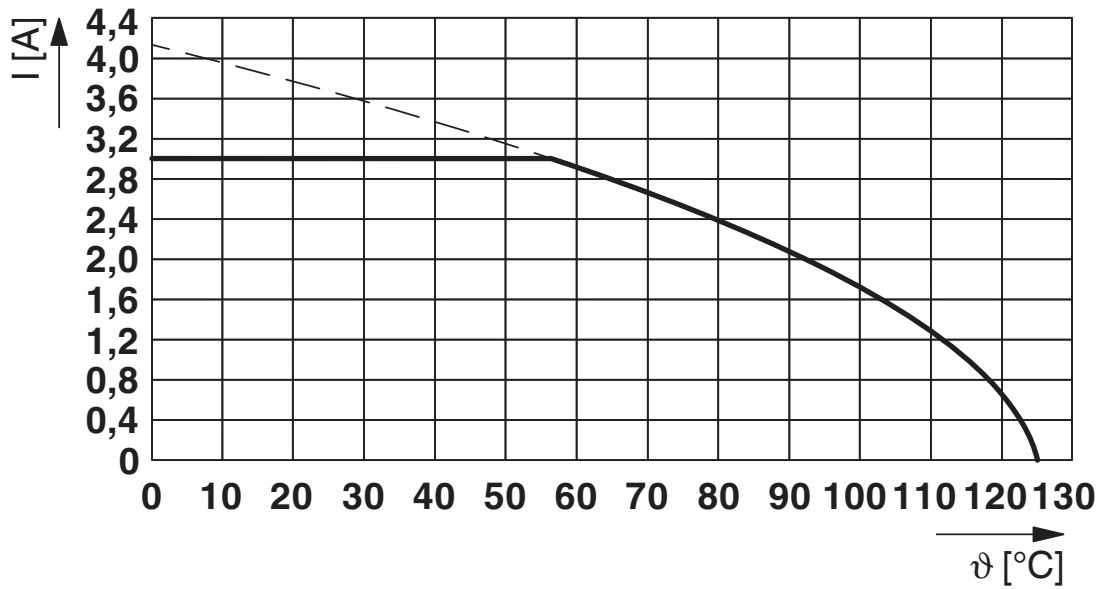
|   |                  |
|---|------------------|
| Process                                   | Reflow soldering |
| Moisture Sensitive Level                  | MSL 1            |
| Classification temperature T <sub>c</sub> | 260 °C           |

## Packaging specifications

|                   |               |
|-------------------|---------------|
| Type of packaging | Tube magazine |
|-------------------|---------------|

Drawings

Diagram



Type: FQ 2,54D/...-SV-1020-1-BT with FQ 2,54D/...-PV- 380-1-BT

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## Approvals

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|  <b>cULus Recognized</b><br>Approval ID: E118976 |                       |                       |                   |                             |
|---|-----------------------|-----------------------|-------------------|-----------------------------|
|   | Nominal voltage $U_N$ | Nominal current $I_N$ | Cross section AWG | Cross section $\text{mm}^2$ |
| keine   |                       |                       |                   |                             |
|   | 30 V                  | 3 A                   | -                 | -                           |

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-13.0 | 27460201 |
| ECLASS-15.0 | 27460201 |

### ETIM

|          |          |
|----------|----------|
| ETIM 9.0 | EC002637 |
|----------|----------|

### UNSPSC

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

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## Environmental product compliance

### EU RoHS

|   |                    |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes, No exemptions |
|---|--------------------|

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