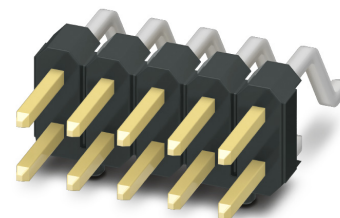


Data sheet

Order No.: 1156942

Type: FQ 2,54D/ 20-PH-1-BT

SMD pin header, Reflow soldering



The figure shows the 10-position version

1 Main features



• No. of pos.	20	• Nominal current	3 A
• Test voltage	500 V AC	• Mounting type	SMD soldering
• Color	black (9005)	• Connection direction	0 °
• Pitch	2.54 mm	• Type of packaging	Tube magazine

2 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



Make sure you always use the latest documentation.

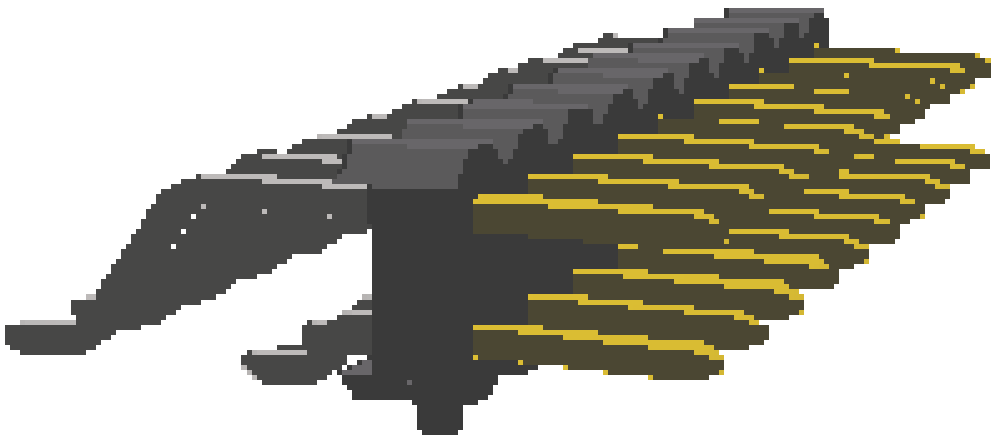
It can be downloaded at: phoenixcontact.net/product/1156942

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1156942 FQ 2,54D/ 20-PH-1-BT

4 3D model in PDF can be activated (Acrobat Reader only)



1156942 FQ 2,54D/ 20-PH-1-BT**5 General Technical Data****5.1 item properties**

Order No.	1156942
Type	FQ 2,54D/ 20-PH-1-BT
Connector system	FINEPITCH FQ 2,54
Product type	SMD pin header
Type of contact	Male connector
Range of articles	FQ 2,54D/...-PH
Pitch	2.54 mm
Number of positions	20
Number of levels	2
Type of locking	without
Mounting type	SMD soldering
Connection direction of the connector to the PCB	0 °
Pin layout	Linear pad geometry

1156942 FQ 2,54D/ 20-PH-1-BT**6 Mounting****6.1 Flange mounting**

Type of locking	without
-----------------	---------

6.2 Material of metal parts

Note	WEEE/RoHS-compliant, whisker-free acc. to IEC 60068-2-82/JEDEC JESD 201
Contact material	Cu alloy
Surface contact area	Nickel (Ni) , Gold (Au)
Soldering area surface	Tin (Sn)
Surface characteristics	Selective coating
Insulating material data	Housing
Color	black (9005)
Insulating material	PA
Insulating material group	I
CTI according to IEC 60112	600
Flammability rating according to UL 94	V0

1156942 FQ 2,54D/ 20-PH-1-BT**7 Dimensions****7.1 Dimensions for the product**

Length	16.1 mm
Width	25.4 mm
Total height	6.28 mm
Installed height	5.08 mm
Coplanarity	≤ 0.15 mm

7.2 Dimensions for the application

Contact cover	0.4 mm
Overlap length	1.3 mm

1156942 FQ 2,54D/ 20-PH-1-BT

8 Series drawing

pos.	dim. a	dim. w	dim. b
10	10.16 ±0.30	12.70 ±0.50	7.62 ±0.20
20	22.86 ±0.30	25.40 ±0.50	20.32 ±0.20
30	35.56 ±0.30	38.10 ±0.50	33.02 ±0.20
50	60.96 ±0.30	63.50 ±0.50	58.42 ±0.20
80	99.06 ±0.30	101.60 ±0.50	96.52 ±0.20

Coplanarity = X.XX
 up to 20 pos. ≤ 0.10 mm
 up to 40 pos. ≤ 0.13 mm
 up to 80 pos. ≤ 0.15 mm

1156942

FO 2,54D/...-PH-1-BT

scale - Simplified representation
 - from customer process
 - Linear dimensions (mm)
 - EN ISO 297: 2950

document-No. / R / date 01509202 / 01 / 25.06.2021
 document-type description FQ 2,54D/...-PH-1-BT

DIN A3
 page 1 of 1

footprint for information only

9 Product notes

9.1 General information

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.

10 Packaging information

Type of packaging

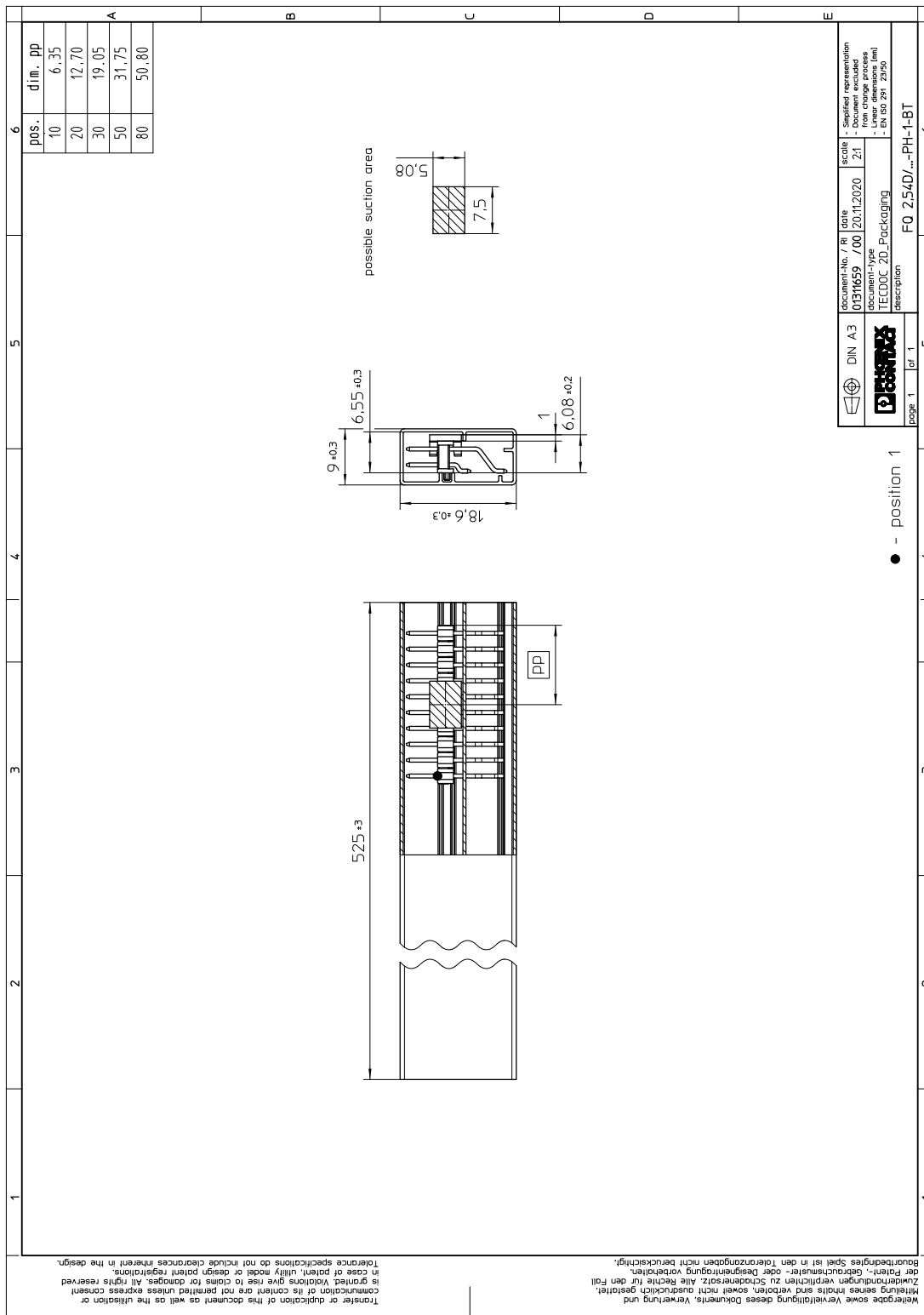
Tube magazine

Pieces per package

190

1156942 FQ 2,54D/ 20-PH-1-BT

11 Blister drawing



12 Application

12.1 Temperature limit values

Ambient temperature (storage/transport)	-40 °C ... 70 °C
Ambient temperature (assembly)	-5 °C ... 100 °C
Ambient temperature (operation)	-40 °C ... 125 °C

1156942 FQ 2,54D/ 20-PH-1-BT

13 General tests

13.1 Specification



Brief description

Board-to-board connectors

1156942 FQ 2,54D/ 20-PH-1-BT**14 Mechanical tests****14.1 Insertion and withdrawal force per contact**

Insertion and withdrawal force per contact	≤ 2.9 N
Specification	IEC 60512-9-1:2010-03 (following) 100 Insertion/withdrawal cycles

1156942 FQ 2,54D/ 20-PH-1-BT**15 Electrical tests**

Nominal current at 20 °C	3 A IEC 60512-5-2:2002-02 (80-pos.)
Test voltage	500 V AC IEC 60512-4-1:2003

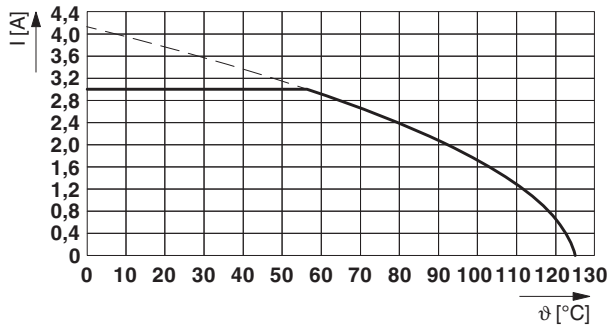
15.1 Air and creepage distances

Minimum value for clearance and creepage distance	0.4 mm
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1156942 FQ 2,54D/ 20-PH-1-BT**16 Current carrying capacity/derating curves**

Specification	IEC 60512-5-2:2002-02
Note	max. 3 A at 20°C (80-pos.)
Reduction factor	0.8

Type: FQ 2,54D/...-SH-O-BT with FQ 2,54D/...-PH-1-BT

**16.1 Insulation resistance**

Insulation resistance	> 1 G Ω , (IEC 60512-3-1:2002-02)
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16.2 forward resistance

Contact resistance	≤ 30 m Ω , (IEC 60512-2-1:2002-02)
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16.3 Vibration test

Specification	IEC 60068-2-6:2007-12
Result	Test passed
Frequency	10 - 55 - 10 Hz
Sweep speed	1 octave/min
Amplitude	1.52 mm
Acceleration	181 m/s ²
Test duration per axis	2 h
Test directions	X-, Y- and Z-axis
Note	

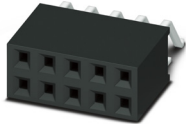
1156942 FQ 2,54D/ 20-PH-1-BT

17 Commercial Data

Order No.	1156942
Type	FQ 2,54D/ 20-PH-1-BT
Pieces per package	190
Net weight	5.01 g
GTIN	4063151160722
	Information that applies locally, see link on page 1

1156942 FQ 2,54D/ 20-PH-1-BT

18 Combination tests

**FQ 2,54D/...-PH****FQ 2,54D/...-SH****Mechanical tests**

Insertion/withdrawal force per position

approx. 2.9 N / 2.9 N

Durability testsContact resistance R_1 20 m Ω

Insertion/withdrawal cycles

100

Contact resistance R_2 30 m Ω

Test voltage

500 V AC

Insulation resistance
Requirements > 5 M Ω > 1 G Ω **Thermal tests**

Tested number of positions

80

Test current

3 A