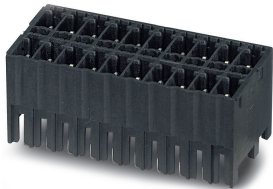


Printed-circuit board connector - MCDNV 1,5/ 9-G1-3,5 P14THR - 1953075

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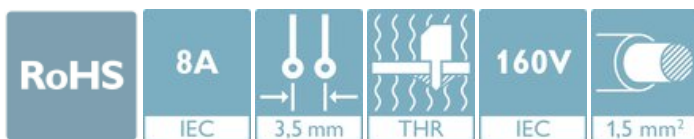


PCB headers, nominal cross section: 1.5 mm², color: black, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Male connector, number of potentials: 18, Number of rows: 2, Number of positions per row: 9, number of connections: 18, product range: MCDNV 1,5/..-G1-THR, pitch: 3.5 mm, mounting: THR soldering, pin layout: Linear pinning, solder pin [P]: 1.4 mm, plug-in system: MINI COMBICON, Pin connector pattern alignment: Standard, Locking: without, mounting: without, type of packaging: packed in cardboard, The pin length is 1.4 mm. User information and design recommendations on Through Hole Reflow Technology can be found at: Downloads".

The figure shows a 10-pos. version with 20 contacts

Your advantages

- ✓ Designed for integration into the SMT soldering process
- ✓ Vertical connection enables multi-row arrangement on the PCB
- ✓ Maximum flexibility when it comes to device design – one header for connectors with different connection technologies
- ✓ Conductor connection on several levels enables higher contact density



Key Commercial Data

| | |
|------------------------|---------------|
| Packing unit | 35 pc |
| Minimum order quantity | 35 pc |
| GTIN | |
| GTIN | 4017918920241 |

Technical data

Item properties

| | |
|---------------------------|---------------------|
| Brief article description | PCB header |
| Connector system | MINI COMBICON |
| Type of contact | Male connector |
| Range of articles | MCDNV 1,5/..-G1-THR |
| Pitch | 3.5 mm |
| Number of positions | 9 |
| Mounting type | THR soldering |
| Pin layout | Linear pinning |

Printed-circuit board connector - MCDNV 1,5/ 9-G1-3,5 P14THR - 1953075

Technical data

Item properties

| | |
|---------------------------------|----------|
| Locking | without |
| Number of levels | 2 |
| Number of connections | 18 |
| Number of potentials | 18 |
| Pin connector pattern alignment | Standard |

Electrical parameters

| | |
|-----------------------------|--------|
| Nominal current | 8 A |
| Nom. voltage | 160 V |
| Rated voltage (III/3) | 160 V |
| Rated voltage (III/2) | 160 V |
| Rated voltage (II/2) | 250 V |
| Rated surge voltage (III/3) | 2.5 kV |
| Rated surge voltage (III/2) | 2.5 kV |
| Rated surge voltage (II/2) | 2.5 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 (3 - 5 µm Sn) |
| Metal surface contact area (middle layer) | Nickel (1.3 - 3 µm Ni) |
| Metal surface soldering area (top layer) | Tin (3 - 5 µm Sn) |
| Metal surface soldering area (middle layer) | Nickel (1.3 - 3 µm Ni) |

Material data - housing

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

Flange specifications

| | |
|-----------------|---------|
| Type of locking | without |
| Mounting flange | without |

Dimensions for the product

| | |
|--------------|--|
| Caption | Schematische Abbildung - weitere Details siehe Produktfamilienzeichnung im Download Center |
| Length [l] | 15.2 mm |
| Width [w] | 33 mm |
| Height [h] | 14.7 mm |

Printed-circuit board connector - MCDNV 1,5/ 9-G1-3,5 P14THR - 1953075

Technical data

Dimensions for the product

| | |
|-----------------------------|--------------|
| Pitch | 3.5 mm |
| Height (without solder pin) | 13.3 mm |
| Solder pin [P] | 1.4 mm |
| Pin spacing | 8.30 mm |
| Pin dimensions | 0.8 x 0.8 mm |

Dimensions for PCB design

| | |
|---------------|---------|
| Hole diameter | 1.4 mm |
| Pin spacing | 8.30 mm |

Packaging information

| | |
|----------------------------|---------------------|
| Type of packaging | packed in cardboard |
| Pieces per package | 35 |
| Denomination packing units | Pcs. |

General product information

| | |
|--------------|---|
| Type of note | Details for soldering processes |
| Note | Processing using reflow processes in compliance with IEC 60068-2-58 or DIN EN 61760-1 (latest version) Moisture Sensitive Level (MSL) = 1 according to IPC/JEDEC J-STD-020-C |
| Type of note | Details for soldering processes |
| Note | Processing using reflow processes in compliance with IEC 60068-2-58 or DIN EN 61760-1 (latest version) Moisture Sensitive Level (MSL) = 1 according to IPC/JEDEC J-STD-020-C |

Processing notes

| | |
|---|--|
| Process | Reflow/wave soldering |
| Specification | Following IPC/JEDEC J-STD-020D.1:2008-03 |
| | Following IEC 61760-1:2006-04 |
| | Following IEC 60068-2-58:2005-02 |
| Moisture Sensitive Level | MSL 1 |
| Classification temperature T _c | 260 °C |
| Solder cycles in the reflow | 3 |

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) | 1.5 mm |

Printed-circuit board connector - MCDNV 1,5/ 9-G1-3,5 P14THR - 1953075

Technical data

Air clearances and creepage distances

| | |
|---|--------|
| Minimum clearance - inhomogeneous field (III/2) | 1.5 mm |
| Minimum clearance - inhomogeneous field (II/2) | 1.5 mm |
| Minimum creepage distance value (III/3) | 2.5 mm |
| Minimum creepage distance value (III/2) | 1.6 mm |
| Minimum creepage distance value (II/2) | 2.5 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 |
| Contact resistance R ₁ | 1.8 mΩ |
| Insertion/withdrawal cycles | 25 |
| Contact resistance R ₂ | 1.9 mΩ |
| Impulse withstand voltage at sea level | 2.95 kV |

Thermal tests (C)

| | |
|---|-----------------------|
| Specification | IEC 60512-5-1:2002-02 |
| Number of positions | 20 |
| 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 |
| Corrosive stress | 0.2 dm ³ SO ₂ on 300 dm ³ /40 °C/1 cycle |
| Impulse withstand voltage at sea level | 2.95 kV |
| Power-frequency withstand voltage | 1.39 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 |
| Frequency | 10 - 150 - 10 Hz |
| Sweep speed | 1 octave/min |
| Amplitude | 0.35 mm (10 - 60.1 Hz) |

Printed-circuit board connector - MCDNV 1,5/ 9-G1-3,5 P14THR - 1953075

Technical data

Vibration test

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

Standards and Regulations

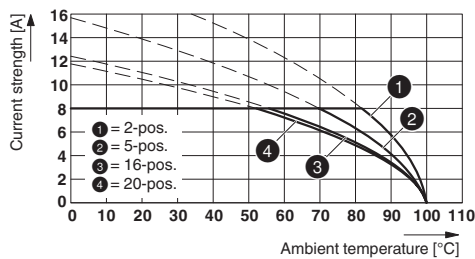
| | |
|--|--------|
| Connection in acc. with standard | EN-VDE |
| | CUL |
| Flammability rating according to UL 94 | V0 |

Environmental Product Compliance

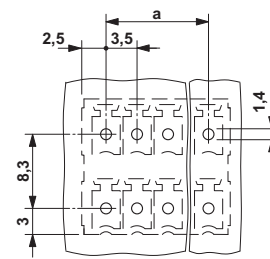
| | |
|------------|---|
| China RoHS | Environmentally friendly use period: unlimited = EFUP-e |
| | No hazardous substances above threshold values |

Drawings

Diagram



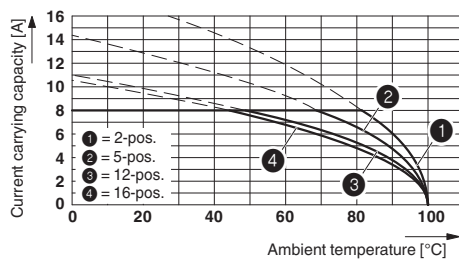
Drilling diagram



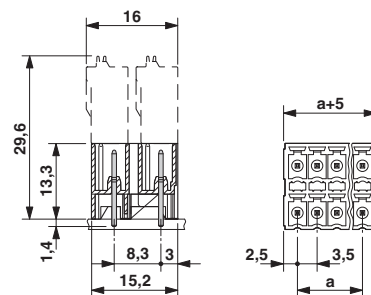
Typ: FMC 1,5/...-ST-3,5 with MCDNV 1,5/...-G1-3,5 P...THR

*) ≤ 8-pos. = 1.3 / > 8-pos. = 1.4

Diagram



Dimensional drawing



Typ: FMCD 1,5/...-ST-3,5 with MCDNV 1,5/...-G1-3,5 P...THR

Classifications

eCl@ss

| | |
|---------------|----------|
| eCl@ss 10.0.1 | 27440402 |
| eCl@ss 11.0 | 27460201 |
| eCl@ss 4.0 | 27260700 |

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Classifications

eCl@ss

| | |
|------------|----------|
| 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 9.0 | 27440402 |

ETIM

| | |
|----------|----------|
| ETIM 3.0 | EC001121 |
| ETIM 4.0 | 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 |
| UNSPSC 13.2 | 39121409 |
| UNSPSC 18.0 | 39121409 |
| UNSPSC 19.0 | 39121409 |
| UNSPSC 20.0 | 39121409 |
| UNSPSC 21.0 | 39121409 |

Approvals

Approvals

Approvals

VDE Gutachten mit Fertigungsüberwachung / IECEE CB Scheme / EAC / cULus Recognized

Ex Approvals

Approval details

Printed-circuit board connector - MCDNV 1,5/ 9-G1-3,5 P14THR - 1953075

Approvals

| | | | |
|--|--|--|----------|
| VDE Gutachten mit Fertigungsüberwachung | | http://www2.vde.com/de/Institut/Online-Service/ VDE-gepruefteProdukte/Seiten/Online-Suche.aspx | 40011723 |
| Nominal voltage UN | | 160 V | |
| Nominal current IN | | 8 A | |

| | | | |
|--------------------|--|---|----------------|
| IECEE CB Scheme | | http://www.iecee.org/ | DE1-60987-B1B2 |
| Nominal voltage UN | | 160 V | |
| Nominal current IN | | 8 A | |

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

| | | | |
|--------------------|--|---|-----------------|
| cULus Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | E60425-20110128 |
| Nominal voltage UN | | B 150 V | D 150 V |
| Nominal current IN | | 8 A | 8 A |

Accessories

Accessories

Coding element

Coding profile - CP-MSTB - 1734634

Coding profile, is inserted into the slot on the plug or inverted header, red insulating material



Labeled terminal marker

Printed-circuit board connector - MCDNV 1,5/ 9-G1-3,5 P14THR - 1953075

Accessories

Marker card - SK 3,81/2,8:FORTL.ZAHLEN - 0804109



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: 3.81 mm, lettering field size: 3.81 x 2.8 mm

Additional products

Printed-circuit board connector - FMC 1,5/ 9-ST-3,5 - 1952335



PCB connector, nominal cross section: 1.5 mm², color: green, nominal current: 8 A, rated voltage (III/2): 160 V, contact surface: Tin, type of contact: Female connector, number of potentials: 9, Number of rows: 1, Number of positions per row: 9, number of connections: 9, product range: FMC 1,5/..-ST, pitch: 3.5 mm, connection method: Push-in spring connection, conductor/PCB connection direction: 0 °, plug-in system: MINI COMBICON, Locking: without, mounting: without, type of packaging: packed in cardboard

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