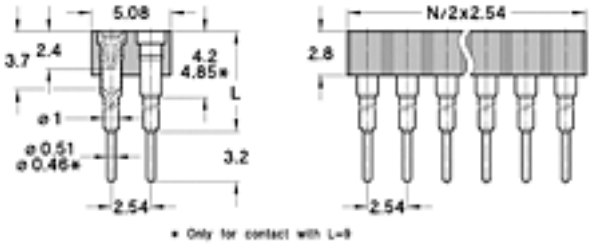
preci-dip

# PCB CONNECTORS

**SERIES 416**

**416-PP-2NN-41-XXX101**
Double row
2.54 mm, Straight solder tail, Mating pin Ø 0.47 mm

Interconnect socket strips, solder tail




## TECHNICAL SPECS.:

| | |
|---|---|
| **Insulator** | Black glass filled polyester PCT-GF30-FR |
| **Flammability** | UL 94V-O |
| **Sleeve** | Brass CuZn36Pb3 (C36000) |
| **Contact** | Clip (4 finger): Beryllium copper (C17200) |
| **Mating pin Ø** | 0.40 to 0.56 mm |
| **Insertion force** | 2 N typ. |
| **Withdrawal force** | 1 N typ. (polished steel gauge Ø 0.43 mm) |
| **Mechanical life** | Min. 500 cycles |
| **Rated current** | 3 A |
| **Contact resistance** | Max. 10 m |
| **Dielectric strength** | Min. 1000 V RMS |

## ORDERING INFORMATION:

| PP Plating code | Sleeve | Clip |
|---|---|---|
| 87 | Tin | Gold flash |
| 83 | Tin | Gold 0.75 µm |

NN number of poles. Replace NN with the requested number of poles, e.g. 416-83-2NN-41-007101 for a double row version with 16 pins becomes 416-83-216-41-007101

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# TECHNICAL ASSISTANCE

## GENERAL SPECIFICATIONS:

The values listed below are general specs applying for PRECI-DIP socket and pin connectors. Please see individual catalog page for additional and product specific technical data.

| | |
|---|---|
| Operating temperature range | -55 ... +125 °C |
| Climatic category (IEC) | 55/125/21 |
| Operating humidity range | annual mean 75 % |
| Max working voltage | 100 VRMS/150 VDC (2.54 mm grid) |

PRECI-DIP sockets are recognized by Underwriters Laboratories Inc. and listed under "Connectors for Use in Data, Signal, Control and Power Applications", File Nr. E174442

## MECHANICAL CHARACTERISTICS:

| | |
|---|---|
| Clip retention | Min. 40 N (no displacement under axial force applied) |
| Contact (sleeve / clip) retention | Min. 3.3 N acc. to MIL-DTL-83734, pt 4.6.4.2 |

## ELECTRICAL CHARACTERISTICS:

| | |
|---|---|
| Insulation resistance between any two adjacent contacts | Min. 10'000 M at 500 V AC |
| Capacitance between any two adjacent contacts | Max. 1 pF |

**Air and creepage distances between any two adjacent contacts :**

| **SERIES** | 3xx/4xx/7xx | 80x | 83x | 85x | 86x |
|---|---|---|---|---|---|
| **mm** | 0.7 | 0.85 / 0.7 | 0.5 | 0.4 / 0.5 | 0.5 |

## ENVIRONMENTAL CHARACTERISTICS:

The sockets withstand the following environmental tests without mechanical and electrical defects:

- Dry heat steady state IEC 60512-11-9.11i / 60068-2-2.Bb: 125 °C, 16h
- Damp heat cyclic IEC 60512-11-12.11m / 60068-2-30.Db: 25/55 °C, 90 – 100 %rH, 1 cycle of 24 h
- Cold steady state IEC 60512-11-10.11j / 60068-2-1.A: -55 °C, 2 h
- Thermal shock IEC 60512-11-4.11d / 60068-2-14.Na: -55/125 °C, 5 cycles 30 min
- Sinusoidal vibrations IEC 60512-6-4.6d / 60068-2-6.Fc: 10 to 500 Hz, 10 g, 1 octave/min, 10 cycles for each axis
- Shock IEC 60512-6-3.6c / 60068-2-27.Ea: 50 g, 11 ms, 3 shocks in three axis

During the above two tests no contact interruption >50 ns does appear.

- Solderability J-STD-002A, Test A, 245°C, 5 s solder alloy SnAg3.8Cu0.7
- Resistance to soldering heat J-STD-0020C, 260°C, 20 s
- Moisture sensitivity J-STD-020C level 1
- Resistance to corrosion :
  1) Salt spray test IEC 60068-2-11.Ka: 48 h
  2) Sulfur dioxide ($SO_2$) test IEC 60068-2-42 Kc: 96 h at 25 ppm $SO_2$, 25 °C, 75 %rH
  3) Hydrogen sulfide ($H_2S$) test IEC 60068-2-43 Kd: 96 h at 12 ppm $H_2S$, 25 °C, 75 %rH

## SOLDERLESS COMPLIANT PRESS-FIT CHARACTERISTICS:

**PRESS-FIT CHARACTERISTICS MEASURED ACC. TO IEC 60352-5**

- Press-in force: 90 N max. (at min. hole dia.) / 65 N typ.
- Push-out force: 30 N min. (at max. hole dia.) / 50 N typ.
- Push-out 3rd cycle: 20 N min. (at max. hole dia.)

**PCB HOLE DIMENSIONS**

- 2 mm grid: Finished hole Ø: 0.7 + 0.09/-0.06 mm | Drilled hole Ø: 0.8 ± 0.02 mm
- 2.54 mm grid: Finished hole Ø: 1 + 0.09/-0.06 mm | Drilled hole Ø: 1.15 ± 0.02 mm

**PCB HOLE PLATING**

- PCB surface finish: Hole plating
- Tin: 5-15 µm tin over min. 25 µm copper
- Copper: min. 25 µm copper
- Gold over nickel: 0.05-0.2 µm gold over 2.5-5 µm nickel over min. 25 µm copper