



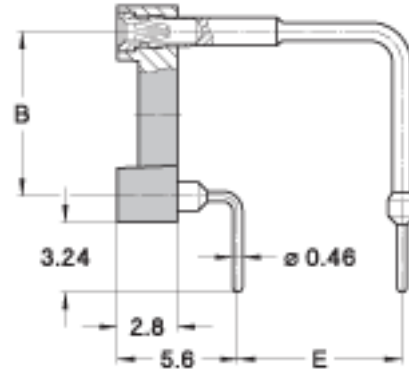
preci-dip

# DIL SOCKETS

**SERIES**  
**299**

**299-PP-320-XX-001101**  
2.54 mm, Right angle, Solder tail

Right angle DIL Sockets for components to be mounted perpendicularly to the PCB such as displays



## TECHNICAL SPECS.:

|  |   |
|--|---|
| <b>Insulator</b>                             | Black glass filled polyester PCT-GF30-FR              |
| <b>Flammability</b>                          | UL 94V-O  |
| <b>Sleeve</b>                                | Brass CuZn36Pb3 (C36000)                              |
| <b>Contact</b>                               | Clip (4 finger): Beryllium copper (C17200)            |
| <b>Accepted pin <math>\varnothing</math></b> | 0.40 to 0.56 mm                                       |
| <b>Insertion force</b>                       | 2 N typ.  |
| <b>Withdrawal force</b>                      | 1 N typ. (polished steel gauge $\varnothing$ 0.43 mm) |
| <b>Mechanical life</b>                       | Min. 100 cycles                                       |
| <b>Rated current</b>                         | 1 A   |
| <b>Contact resistance</b>                    | Max. 10 m   |
| <b>Dielectric strength</b>                   | Min. 1000 V RMS                                       |

## ORDERING INFORMATION:

|                 |        |                   |
|-----------------|--------|-------------------|
| PP Plating code | Sleeve | Clip              |
| 87              | Tin    | Gold flash        |
| 83              | Tin    | Gold 0.75 $\mu$ m |

For complete part number replace XX with the code given below left

## ADVANCED INFORMATION:

| Order Codes          | Poles | A    | B    | C   | D | E | See    |
|----------------------|-------|------|------|-----|---|---|--------|
| 299-PP-210-10-001101 | 10    | 12.6 | 5.08 | 7.6 |   |   | Fig. 1 |

|                      |    |      |       |      |        |
|----------------------|----|------|-------|------|--------|
| 299-PP-608-10-002101 | 8  | 10.1 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-610-10-002101 | 10 | 12.6 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-612-10-002101 | 12 | 15.2 | 15.24 | 10.1 | Fig. 3 |
| 299-PP-614-10-002101 | 14 | 17.7 | 15.24 | 10.1 | Fig. 3 |
| 299-PP-616-10-002101 | 16 | 20.1 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-618-10-002101 | 18 | 22.8 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-620-10-002101 | 20 | 25.3 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-622-10-002101 | 22 | 27.8 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-624-10-002101 | 24 | 30.4 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-626-10-002101 | 26 | 33.0 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-628-10-002101 | 28 | 35.5 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-630-10-002101 | 30 | 38.0 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-632-10-002101 | 32 | 40.6 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-636-10-002101 | 36 | 45.7 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-640-10-002101 | 40 | 50.6 | 15.24 | 17.7 | Fig. 3 |
| 299-PP-648-10-002101 | 48 | 61.0 | 15.24 | 17.7 | Fig. 3 |

# TECHNICAL ASSISTANCE

## GENERAL SPECIFICATIONS:

The values listed below are general specs applying for PRECI-DIP DIL sockets. 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 |

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 | Min. 0.6 mm (Min. 0.2 mm FOR SHRINK-DIP SOCKETS) |

## 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<sub>2</sub>) test IEC 60068-2-42 Kc: 96 h at 25 ppm SO<sub>2</sub>, 25 °C, 75 %rH
  - 3) Hydrogen sulfide (H<sub>2</sub>S) test IEC 60068-2-43 Kd: 96 h at 12 ppm H<sub>2</sub>S, 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

- 2.54 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  $\mu\text{m}$  tin over min. 25  $\mu\text{m}$  copper
- Copper: min. 25  $\mu\text{m}$  copper
- Gold over nickel: 0.05-0.2  $\mu\text{m}$  gold over 2.5-5  $\mu\text{m}$  nickel over min. 25  $\mu\text{m}$  copper