

## THE NEW VARIPIN™

Varipin™ the flexible press-fit contact used by AVX since the mid 1970s has after intensive research been heavily modified in recent years. This research concentrated upon the contact zone and in particular the mechanical aspects that guarantee an equal force on the complete contact length and to prevent 'eye of the needle' cracking, or the contact itself damaging the PCB.

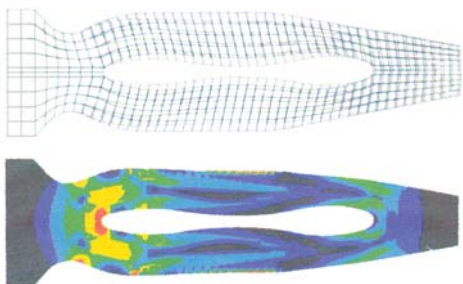
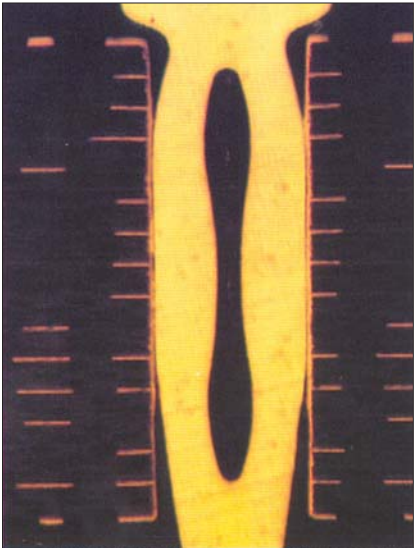
The new configuration was determined by a numeric solution algorithm for elastic and elastoplastic problems within structural mechanisms.

The objective was the numerical simulation of the press-in process of the VARIPIN with the aim of optimizing its form and appearance.

## VARIPIN™ SPECIFICATION

As a result an optimized style of the VARIPIN™ according to the required features of the DIN 41611 (DIN IEC 48 (Sec.) 334) and the PCB specification is now available with the following advantages:

- 100% flexible press-fit shank
- exchange of contacts up to 3 times
- applicable for pc board thickness  $\geq 1.6\text{mm}$
- vibration and corrosion safe connection
- optional plating materials
- low transition resistance



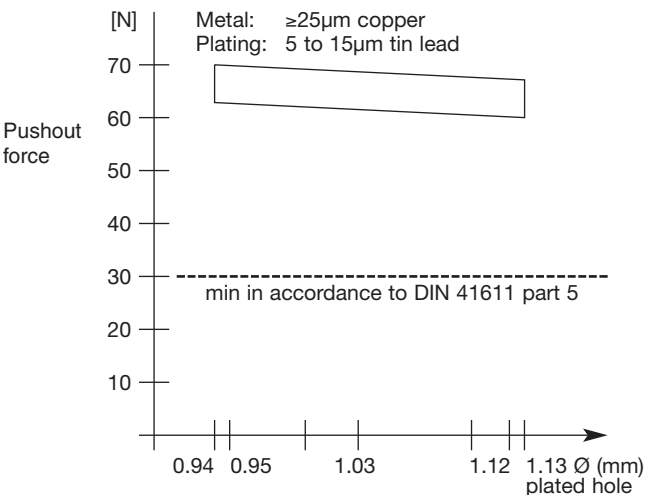
## HOLE SPECIFICATION

Drilled hole	1.15 mm
Met. hole	0.94 mm to 1.09 mm
Copper plating	25 to 55 micron
Tin plating	5 to 15 micron (max 40 micron available if finished hole is 0.94 mm)
Board thickness	1.6 to 3.2 mm or greater

## INSERTION FORCES

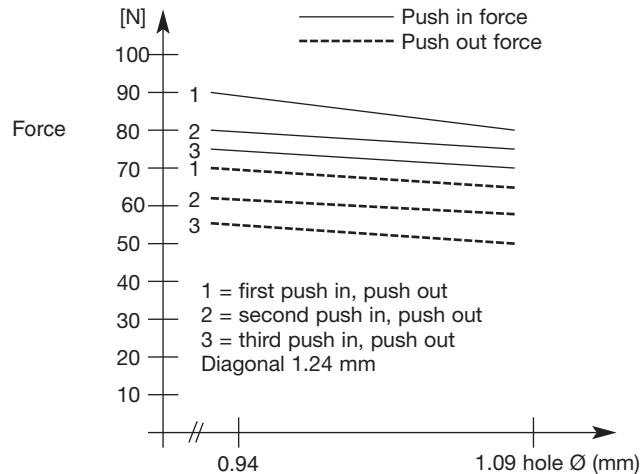
During the optimization of the press-in area a special core was created for compliance with the maximum press-in (250N) and minimum push-out (30N) forces specified in DIN 41611.

In the diagram to the right the behavior of the press-in- and push-out forces in relation to the diameter of the hole as well as the diagonal of the press-in pin (1.24 mm) are shown.



## INSERTION FORCE AFTER THE THIRD EXCHANGE OF A CONTACT

Due to the very low strain on the PCB hole an exchange of pins in one hole is possible up to 3 times without a significant loss of retaining force. Using the repair set contacts can be exchanged at any position within a press-in connection. This repair can be done within a very short time (eg. 5 min.) even in the “field”. Special repair insertions are available that allow exchanges to be made by hand.



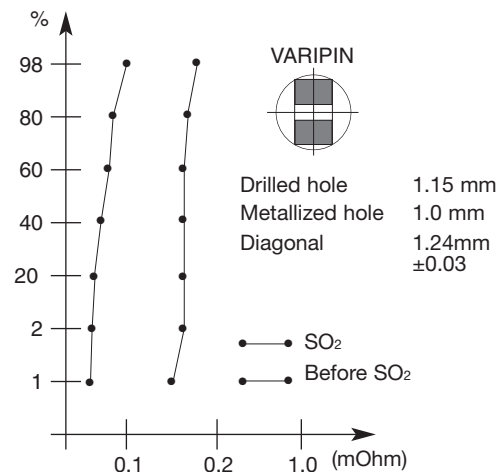
## TRANSITION RESISTANCE

A significant advantage of the high push-out force and the large contact area (contact length min 1.4 mm or 2 mm for a 3.2 mm PCB) is the very low transition resistance ( $\leq 0.2 \text{ m}\Omega$ ) as well as the vibration and corrosion free connection.

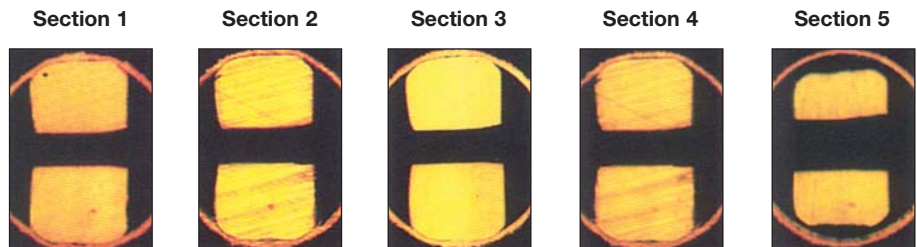
Given that the transition resistance between male and female connectors in accordance with DIN 41611 can be up to  $20 \text{ m}\Omega$ , the transition resistance of the press-in connection can be virtually neglected.

AVX can guarantee a secure connection within a frequency range of 10 - 2000 Hz at 20 G in accordance with IEC 48 (sec) 334.

Transition Resistance before and after SO<sub>2</sub> Test



In the right hand picture we show the contact length of the VARIPIN into an 3.2 mm PC board. These show a large connection surface from section 1 to section 4 which corresponds to a contact length of more than 2 mm.



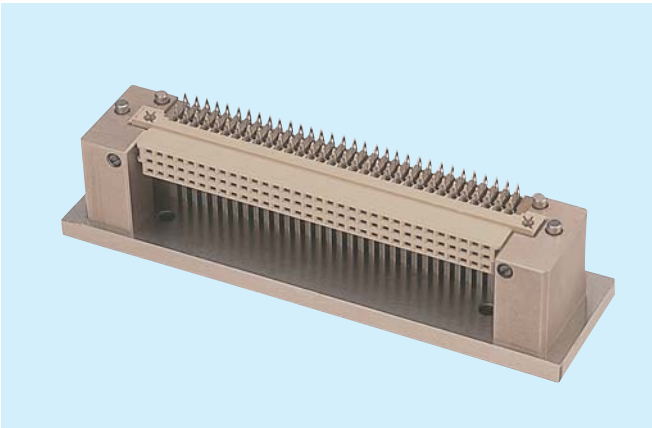
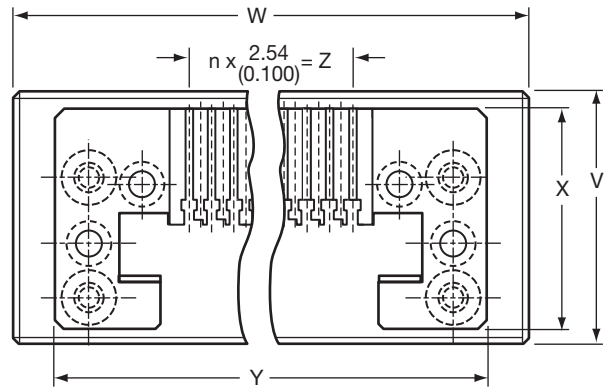
## PRESS-FIT INSTALLATION METHODS

Right angle headers and receptacle connectors require a press-in tool (see page 67).

Vertical headers and receptacles do not require a special tool. They are installed using the “Flat Rock” method. Flat Rock

termination involves the use of a flat metal plate, slightly larger than the length and width of the connector. Installed in a press, the plate pushes down on the connector in a uniform manner until the connector is properly seated.

## FEMALE: RIGHT ANGLED



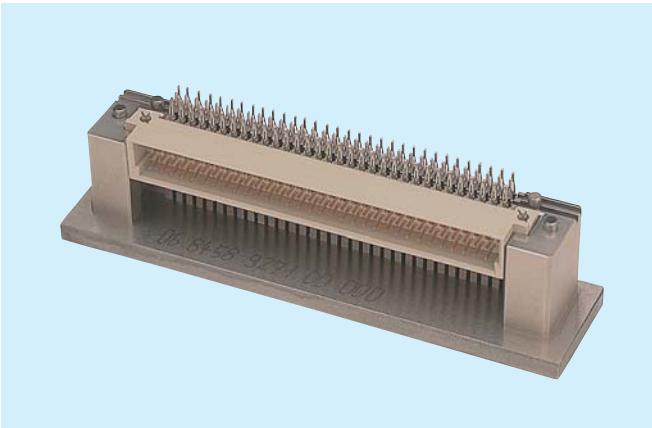
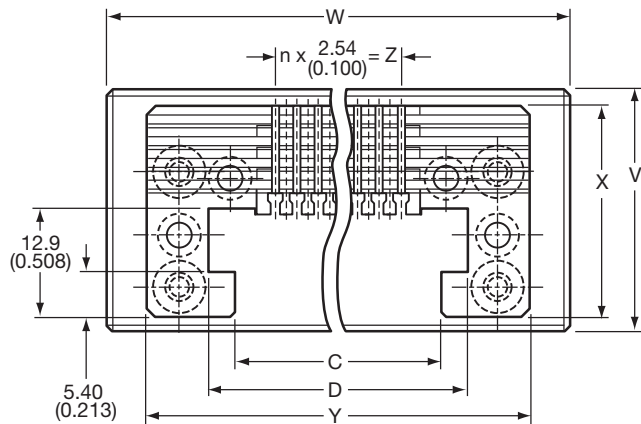
With connector inserted

Dimensions (mm)

Style	No. of Positions	Part Number
1/2 Q	32 (2 x 16)	06 8478 8421 00 000
1/2 R	48 (3 x 16)	06 8478 8431 00 000
Q	64 (2 x 32)	06 8478 8461 00 000
R	96 (3 x 32)	06 8478 8471 00 000
Expanded R	128 (4 x 32)	06 8478 8481 00 000
Expanded R	150 (3 x 50)	06 8478 8401 00 000
Expanded R	160 (5 x 32)	06 8478 8491 00 000

V	W	X	Y	Z	n
28.0	80.0	20.0	70.0	38.10	15
28.0	80.0	20.0	70.0	38.10	15
28.0	119.0	23.60	109.0	78.74	31
28.0	119.0	23.60	109.0	78.74	31
28.0	119.0	21.50	109.0	78.74	31
28.0	119.0	24.40	109.0	78.74	31
28.0	164.7	23.60	154.7	124.46	49

## MALE: RIGHT ANGLED



With connector inserted

Dimensions (mm)

Style	No. of Positions	Part Number
1/2 B	32 (2 x 16)	06 8458 9221 00 000
1/2 C	48 (3 x 16)	06 8458 9231 00 000
1/3 C	30 (3 x 10)	06 8458 9241 00 000
B	64 (2 x 32)	06 8458 9261 00 000
C	96 (3 x 32)	06 8458 9271 00 000
Expanded C	128 (4 x 32)	06 8458 9281 00 000
Expanded C	160 (5 x 32)	06 8458 9291 00 000

C	D	V	W	X	Y	Z	n
47.56	53.66	28.0	80.0	19.44	70.0	38.10	15
47.56	54.16	28.0	80.0	19.44	70.0	38.10	15
32.50	38.50	28.0	64.0	19.44	54.0	22.86	9
88.20	94.30	28.0	119.0	19.44	109.0	78.74	31
88.20	94.30	28.0	119.0	19.44	109.0	78.74	31
88.20	94.30	28.0	119.0	21.98	109.0	78.74	31
88.20	94.30	28.0	119.0	24.52	109.0	78.74	31

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