

# PCB Sockets

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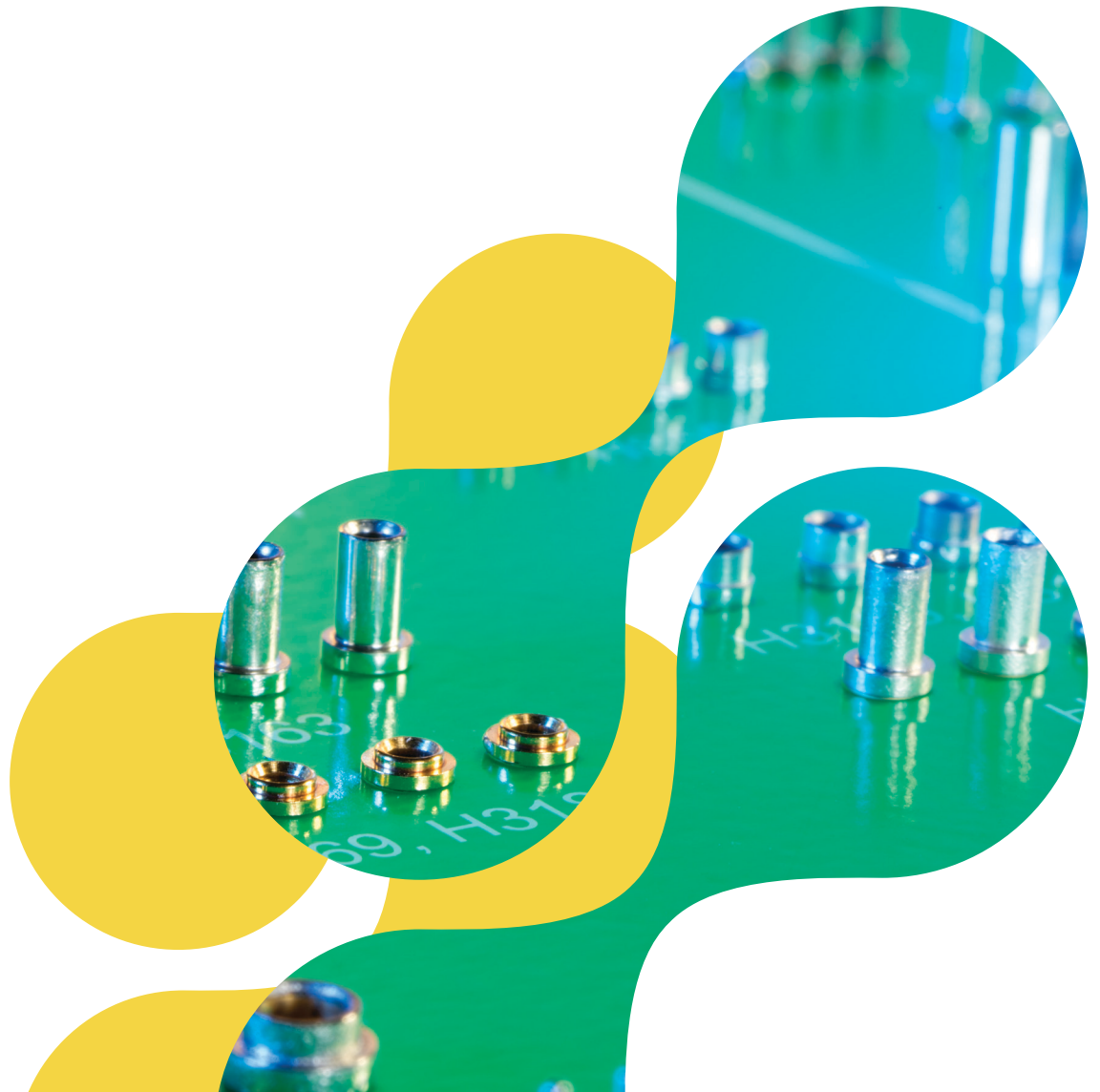
Sockets For  $\varnothing 1\text{mm}$  Pin

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Test Sockets

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Dual Row IC Socket



# PC Board Sockets

## ➤ Surface Mount, Single Piece construction

A choice of twin-beam or 3 contact beams, ultra low profile Surface Mount PCB Contacts, designed for automated assembly processes.

Single part construction, with flat upper surface for pick and place location to the PCB - supplied in Tape and Reel packaging.

Each contact type provides a wide range of mating pin sizes, for greater design flexibility.

- **Ultra-Low profile.**
- **Suitable for high volume applications with automated SMT systems.**
- **Reduces process costs with the elimination of secondary socket soldering operations.**

## ➤ Throughboard, Two Piece construction

A range of 4-beam and 6-beam (also known as fingers) sockets, designed for robustness and reliability, and based on the same design as the Datamate and M300 four finger Beryllium Copper contacts.

The socket design is a two-part construction comprising of a contact clip retained in a precision-turned outer shell.

Options for the shell include closed or open-ended, with or without a knurled section for added board retention.

- **High reliability contacts. Proven history in high end Industrial and Mil/Aero applications.**
- **Suited for use in environments where high vibration, shock and extremes of temperature are a consideration.**
- **Gives the added flexibility of custom board layouts.**

# Specifications

## ➤ Materials

Base material	
Twin Beam:	Phosphor Bronze
3-Beam:	Beryllium Copper
Finish:	See individual pages

## ➤ Electrical

Current	
Twin Beam Ø0.8-1.5mm:	5A max
Twin Beam Ø1.1-1.8mm:	9A max
3-Beam:	6A max
Contact resistance:	20mΩ max

## ➤ Mechanical

Durability	
Twin Beam Ø0.8-1.5mm:	25 operations
Twin Beam Ø1.1-1.8mm:	100 operations
3-Beam:	500 operations
Insertion force (max)	
Twin Beam Ø0.8-1.5mm:	8.0N (Ø1mm), 17.0N (Ø1.5mm)
Twin Beam Ø1.1-1.8mm:	2.8N (Ø1.1mm), 4.5N (Ø1.8mm)
3-Beam Ø1.5-1.9mm:	3.5N (Ø1.5mm), 17.0N (Ø1.9mm)
3-Beam Ø0.8-1.3mm:	3.0N (Ø0.8mm), 6.0N (Ø1.3mm)
Withdrawal force (min)	
Twin Beam Ø0.8-1.5mm:	0.5N (Ø1mm), 1.0N (Ø1.5mm)
Twin Beam Ø1.1-1.8mm:	0.3N (Ø1.1mm), 0.5N (Ø1.8mm)
3-Beam Ø1.5-1.9mm:	0.5N (Ø1.5mm), 1.5N (Ø1.9mm)
3-Beam Ø0.8-1.3mm:	1.0N (Ø0.8mm), 2.0N (Ø1.3mm)

## ➤ Environmental

Operating temperature	
Twin Beam:	-40°C to +105°C
3-Beam:	-50°C to +125°C
Solderability:	235°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

## ➤ Materials

Outer shell:	Brass
Inner contact:	Beryllium Copper
Finish:	See individual pages

## ➤ Electrical

Current	
Ø0.50mm:	2A max
Ø0.80mm, Ø1.00mm:	10A max
Ø2.00mm:	20A max
Contact resistance:	25mΩ max

## ➤ Mechanical

Durability	
Ø0.50, Ø2.00mm:	500 operations
Ø0.80, Ø1.00mm:	1,000 operations
Insertion force (max)	
Ø0.50, Ø2.00mm:	6.0N
Ø0.80mm:	5.0N
Ø1.00mm:	9.0N
Withdrawal force (min)	
Ø0.50mm:	0.5N
Ø0.80, Ø1.00, Ø2.00mm:	1.0N
Vibration sensitivity:	10 – 2,000Hz, 0.75mm, 98m/s <sup>2</sup> (10G), 6 hours duration

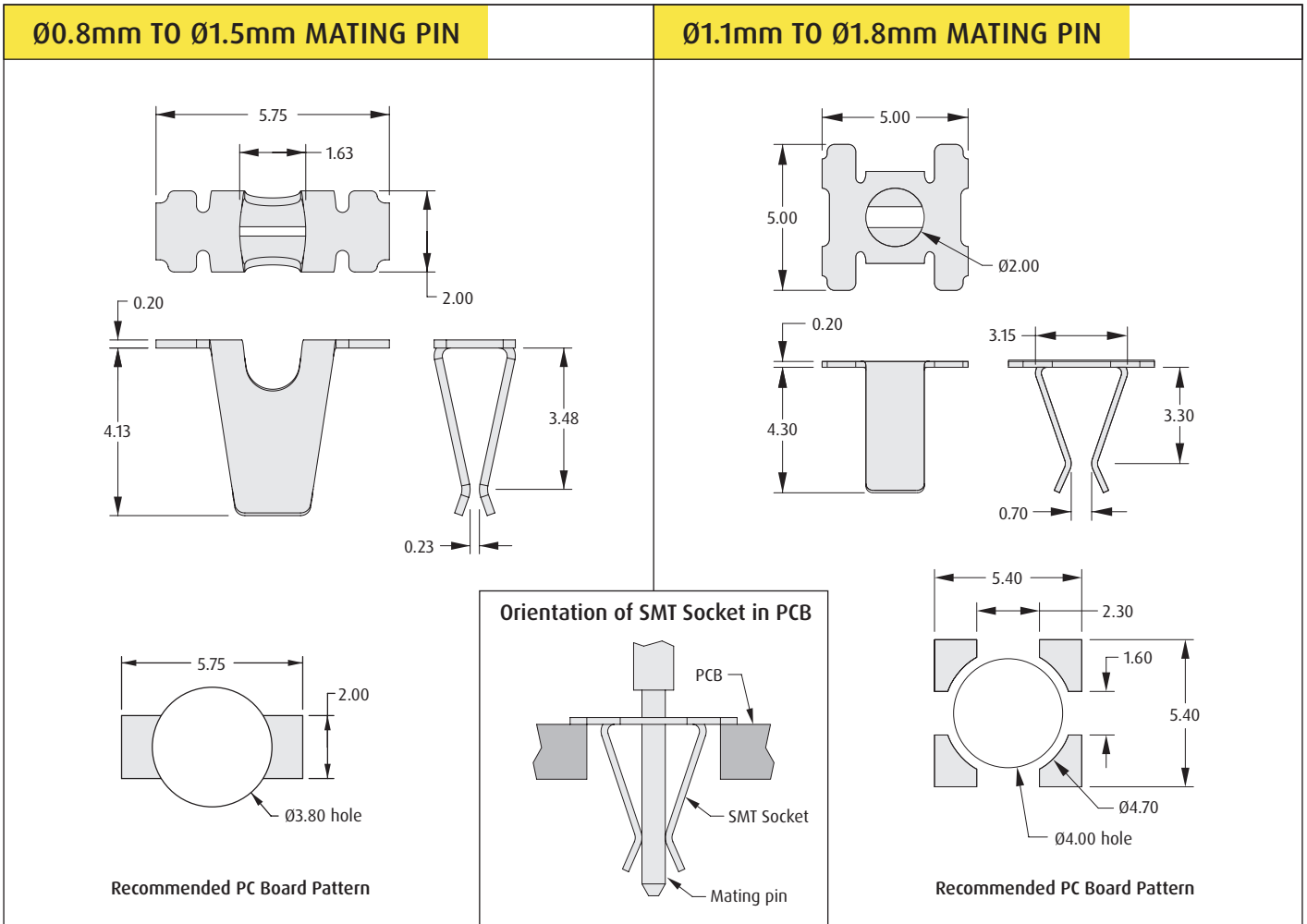
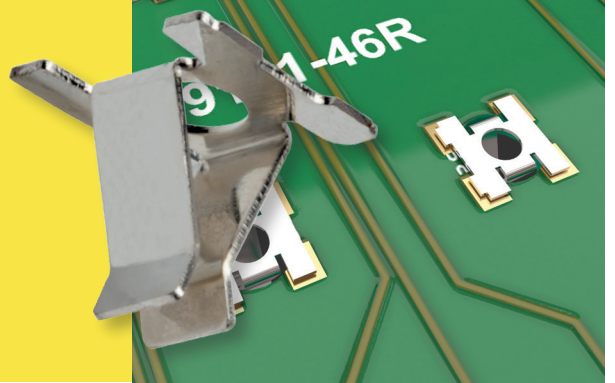
## ➤ Environmental

Operating temperature:	-55°C to +125°C
Solderability:	235°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

# PC Board Sockets

## Surface Mount, Low Profile

- Accepts pins between 0.8mm and 1.8mm diameter.
- SMT product is pick and place-able using standard assembly machines.
- Rated to 5 Amps and 9 Amps electrical current.
- Greatly reduces process costs by removing the need for secondary operations.
- Reduced component costs.



### HOW TO ORDER

**S9XX1 - 46 R**

SERIES CODE	
S9091	Ø0.8 to Ø1.5mm Mating pin
S9101	Ø1.1 to Ø1.8mm Mating pin

PACKAGING	
R	Tape & Reeled

FINISH	
46	Tin

All dimensions in mm.

# PC Board Sockets

## Surface Mount, Low Profile

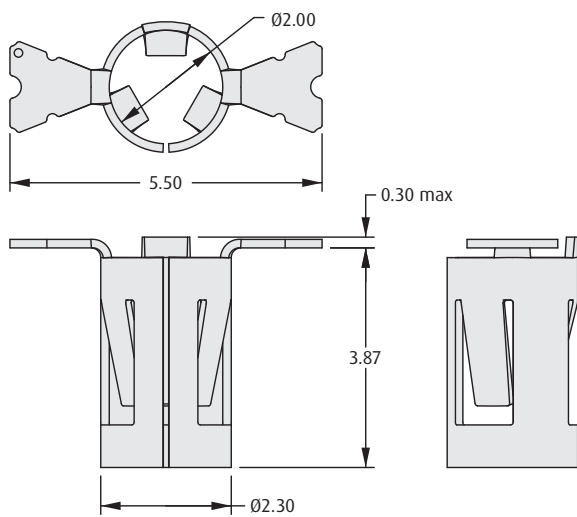
The SYCAMORE Contact is a low-profile single-piece open-ended socket design.

- 3 points of contact for enhanced reliability.
- SMT product is pick and place-able using standard assembly machines.
- Beryllium Copper base material for enhanced temperature range of -50°C to +125°C.
- Gold plating for improved durability and decreased wear.

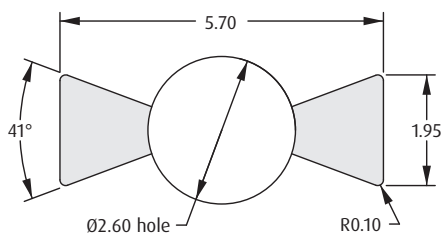
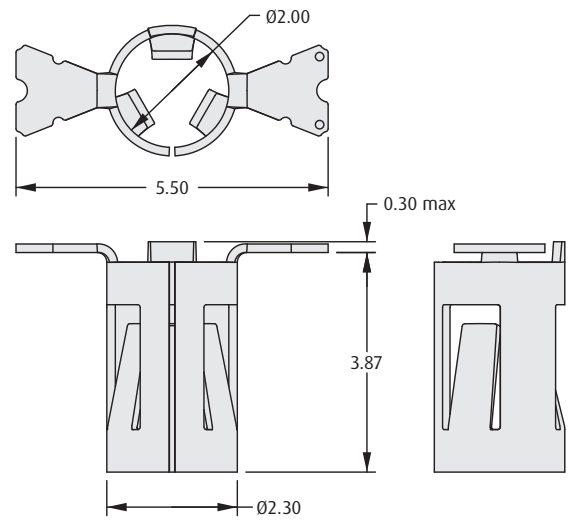


SOCKETS

### TOP ENTRY

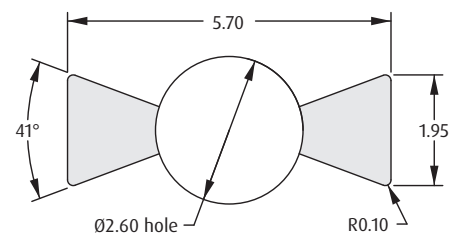
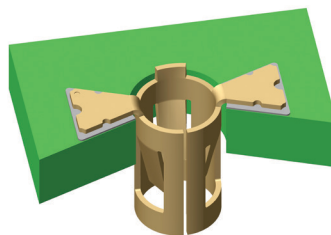


### BOTTOM ENTRY



Recommended PC Board Pattern

### Orientation of SMT Socket in PCB



Recommended PC Board Pattern

### HOW TO ORDER

**S91X1 - 45 R**

SERIES CODE	
<b>S9111</b>	Top Entry, Ø1.5 to Ø1.9mm Mating pin
<b>S9121</b>	Bottom Entry, Ø1.5 to Ø1.9mm Mating pin
<b>S9131</b>	Top Entry, Ø0.8 to Ø1.3mm Mating pin
<b>S9141</b>	Bottom Entry, Ø0.8 to Ø1.3mm Mating pin

### PACKAGING

**R** Tape & Reeled

### FINISH

**45** Gold

All dimensions in mm.

# PC Board Sockets

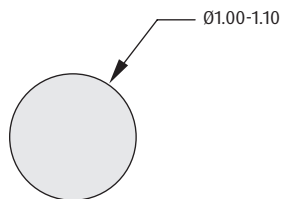
## Sub-Miniature - Ø0.50mm Mating Pin

- ❖ Compatible with Ø0.50mm mating pins.
- ❖ Suitable for a variety of mating pin lengths.
- ❖ Utilises the Datamate four finger Beryllium Copper contact clip.



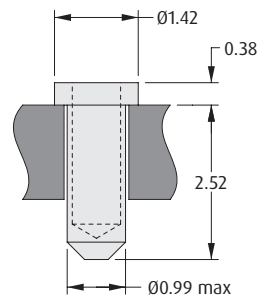
### Specifications

Mating pin size: Ø0.46 - 0.51mm  
 Contact depth: 2.30mm max  
 Pin length: See individual sockets



Recommended PC Board Pattern

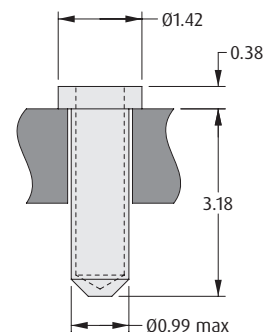
### 2.52mm BODY LENGTH



ORDER CODE	FINISH
H3190-01	Gold contact, Tin shell
H3190-05	Gold contact, Gold shell

Maximum Pin Length = 2.40mm

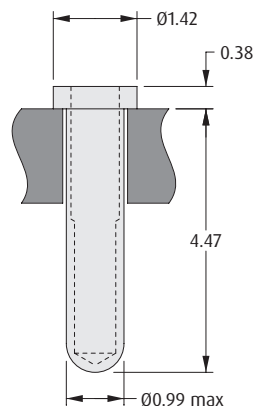
### 3.18mm BODY LENGTH



ORDER CODE	FINISH
H3153-01	Gold contact, Tin shell
H3153-05	Gold contact, Gold shell

Maximum Pin Length = 3.15mm

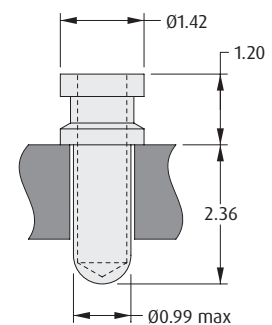
### 4.47mm BODY LENGTH



ORDER CODE	FINISH
H3191-01	Gold contact, Tin shell
H3191-05	Gold contact, Gold shell

Maximum Pin Length = 4.50mm

### RAISED SHOULDER



ORDER CODE	FINISH
H3155-01	Gold contact, Tin shell
H3155-05	Gold contact, Gold shell

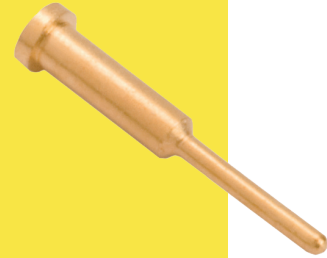
Maximum Pin Length = 3.15mm

All dimensions in mm.

# PC Board Sockets

## Ø0.50mm Mating Pin - Extended Tails

- Compatible with Ø0.50mm mating pins.
- Utilises the Datamate four finger Beryllium Copper contact clip.
- Extended tail sizes for stacked mating or wire wrap functions.

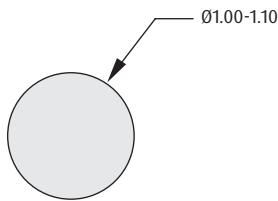


### Specifications

Mating pin size:  
 H3192-XX      Ø0.46 - 0.51mm  
 H3175-XX      Ø0.41 - 0.53mm

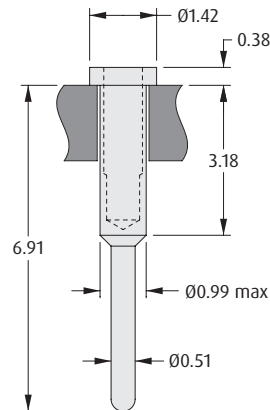
Contact depth:  
 H3192-XX      2.30mm max  
 H3175-XX      2.16mm max

Pin length:      3.15mm max



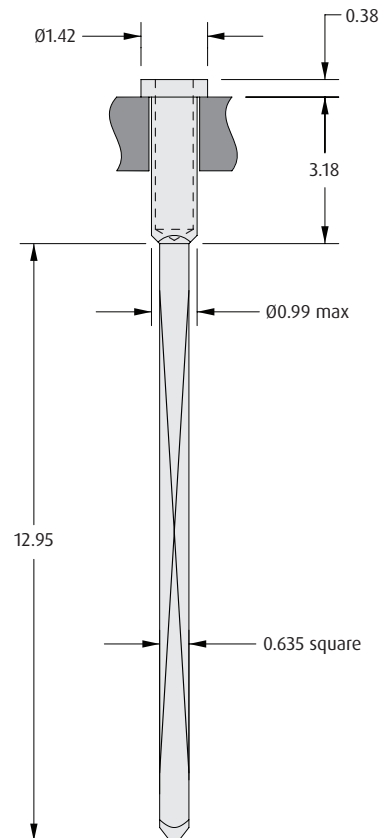
Recommended PC Board Pattern

### EXTENDED PC TAIL



ORDER CODE	FINISH
H3192-01	Gold contact, Tin shell
H3192-05	Gold contact, Gold shell

### WIRE WRAP TAIL



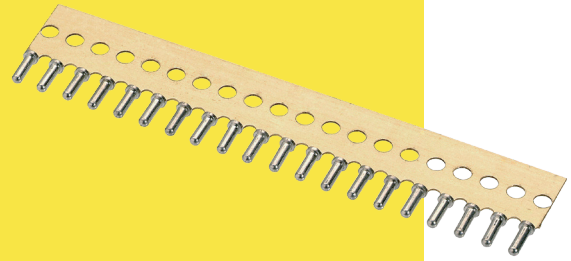
ORDER CODE	FINISH
H3175-01	Gold contact, Tin shell
H3175-05	Gold contact, Gold shell

All dimensions in mm.

# PC Board Sockets

## Strips of Sub-Miniature Sockets

- Sub-miniature sockets using the four finger Beryllium Copper contact, mounted on carrier strips for ease of production use.
- See previous page for information on the individual sockets.

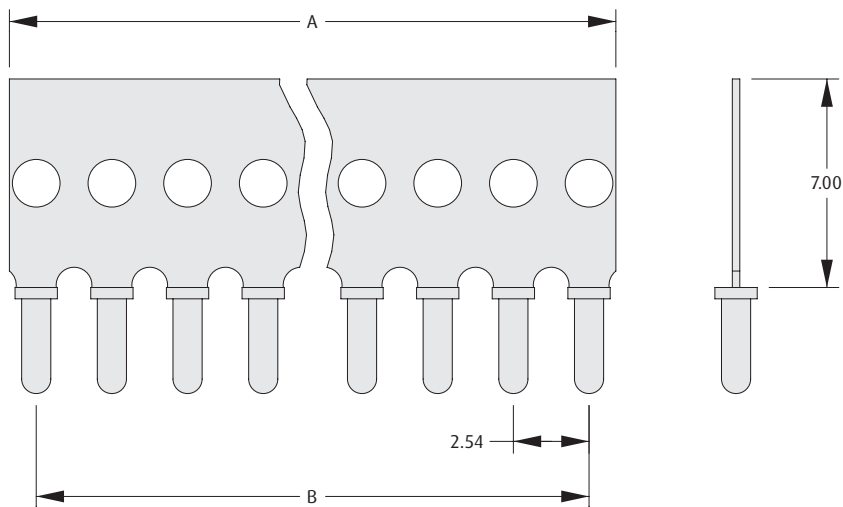


### SINGLE-IN-LINE SOCKET CARRIERS

#### CALCULATION

<b>A</b>	$B + 1.8$
<b>B</b>	$2.54 \times (\text{No. of sockets} - 1)$

- Brass carriers are supplied fitted with the sub-miniature socket shown in the tables below.
- Supplied in standard lengths.



### HOW TO ORDER

**D01 - 9XX XX 01**

**SERIES CODE**

**TYPE**

<b>979</b>	Single-in-line Socket Carrier with H3192-01
<b>982</b>	Single-in-line Socket Carrier with H3191-01
<b>984</b>	Single-in-line Socket Carrier with H3155-01
<b>990</b>	Single-in-line Socket Carrier with H3153-01

**FINISH**

**01** Gold contact, Tin shell

**NO. OF CONTACTS PER STRIP**

**04, 06 to 10, 12, 14, 16, 20, 32**

All dimensions in mm.

# PC Board Sockets

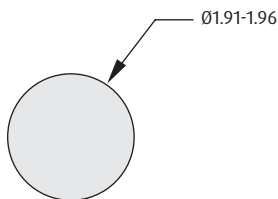
## Ø0.80mm Mating Pin

- Compatible with Ø0.80mm mating pins – see table below.
- Knurled option available for added board retention.
- Ident groove in shoulder, to differentiate from Ø1mm mating pin sockets as shown on the next page.
- Construction uses four finger Beryllium Copper contact from M300 range.

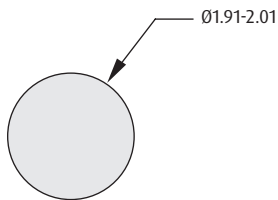


### Specifications

Mating pin size: Ø0.60 - 0.85mm  
 Contact depth: 3.30mm max  
 Pin length: See individual sockets

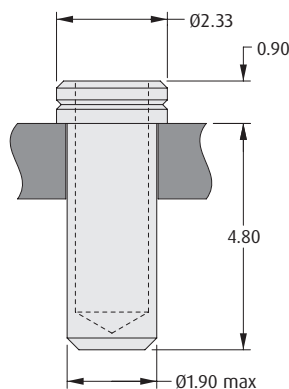


Recommended PC Board Pattern with Retention Knurl



Recommended PC Board Pattern without Retention Knurl

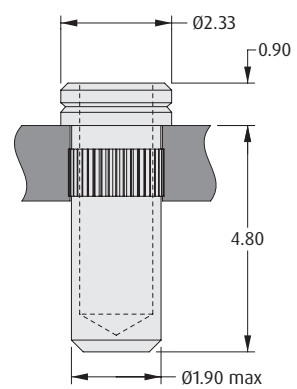
### 4.8mm BODY LENGTH



ORDER CODE	FINISH
H8504-01	Gold contact, Tin shell
H8504-05	Gold contact, Gold shell

Maximum Pin Length = 4.65mm

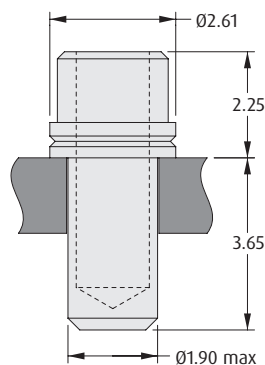
### 4.8mm BODY, KNURL



ORDER CODE	FINISH
H8501-01	Gold contact, Tin shell
H8501-05	Gold contact, Gold shell

Maximum Pin Length = 4.65mm

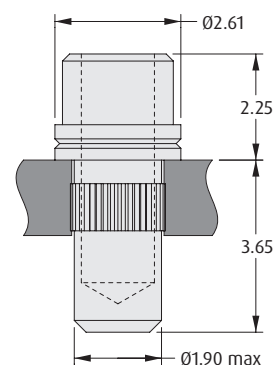
### 3.65mm BODY LENGTH



ORDER CODE	FINISH
H8505-01	Gold contact, Tin shell
H8505-05	Gold contact, Gold shell

Maximum Pin Length = 4.85mm

### 3.65mm BODY, KNURL



ORDER CODE	FINISH
H8502-01	Gold contact, Tin shell
H8502-05	Gold contact, Gold shell

Maximum Pin Length = 4.85mm

All dimensions in mm.



# PC Board Sockets

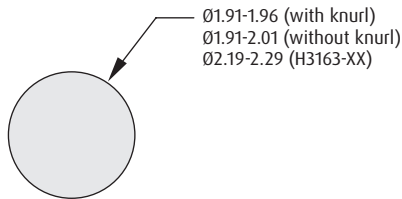
## Ø1.00mm Mating Pin

- Compatible with Ø1.00mm mating pins – see table below.
- Knurled option available for added pin retention.
- Construction uses four finger Beryllium Copper contact from M300 range.



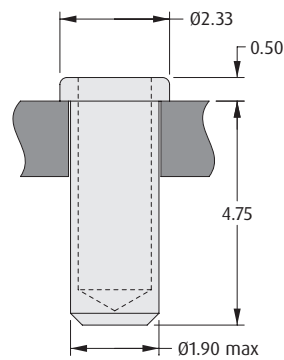
### Specifications

Mating pin size: Ø0.90 - 1.05mm  
 Contact depth: 3.55mm max  
 Pin length: See individual sockets



Recommended PC Board Pattern

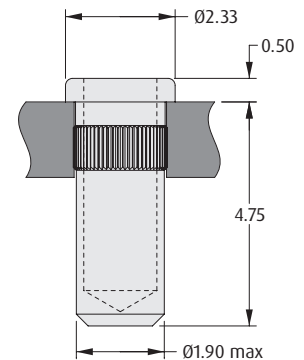
### 4.75mm BODY LENGTH



ORDER CODE	FINISH
H3183-01	Gold contact, Tin shell
H3183-05	Gold contact, Gold shell

Maximum Pin Length = 4.60mm

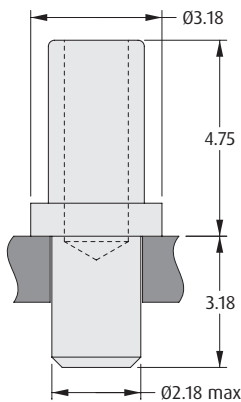
### 4.75mm BODY, KNURL



ORDER CODE	FINISH
H3161-01	Gold contact, Tin shell
H3161-05	Gold contact, Gold shell

Maximum Pin Length = 4.60mm

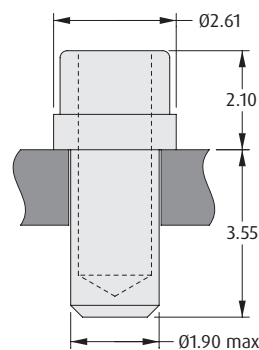
### RAISED SHOULDER



ORDER CODE	FINISH
H3163-01	Gold contact, Tin shell
H3163-05	Gold contact, Gold shell

Maximum Pin Length = 5.00mm

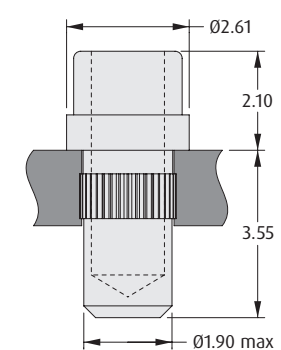
### 3.55mm BODY LENGTH



ORDER CODE	FINISH
H3182-01	Gold contact, Tin shell
H3182-05	Gold contact, Gold shell

Maximum Pin Length = 4.85mm

### 3.55mm BODY, KNURL



ORDER CODE	FINISH
H3165-01	Gold contact, Tin shell
H3165-05	Gold contact, Gold shell

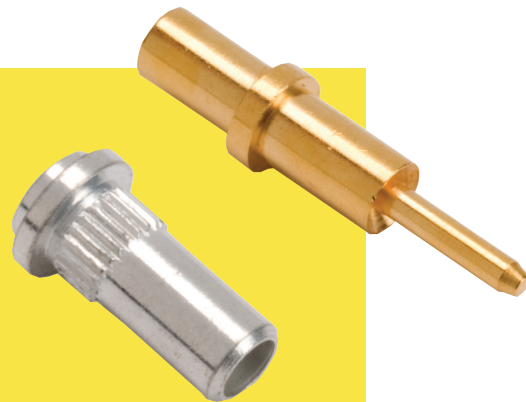
Maximum Pin Length = 4.85mm

All dimensions in mm.

# PC Board Sockets

## Ø1.00mm Mating Pin

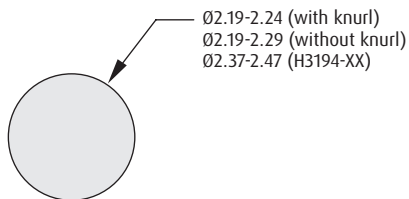
- Compatible with Ø1.00mm mating pins – see table below.
- Knurled option available for added pin retention.
- Construction uses four finger Beryllium Copper contact from M300 range.



SOCKETS

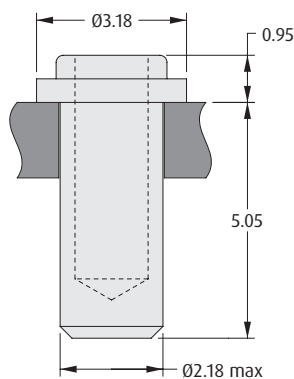
### Specifications

Mating pin size: Ø0.90 - 1.05mm  
 Contact depth: 3.55mm max  
 Pin length: See individual sockets



Recommended PC Board Pattern

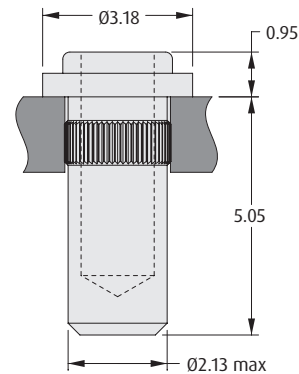
### 5.05mm BODY LENGTH



ORDER CODE	FINISH
H3184-01	Gold contact, Tin shell
H3184-05	Gold contact, Gold shell

Maximum Pin Length = 4.75mm

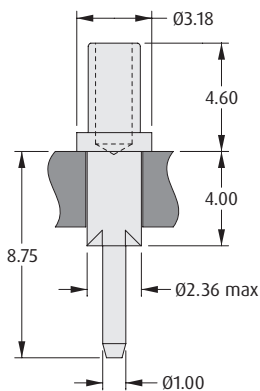
### 5.05mm BODY, KNURL



ORDER CODE	FINISH
H3167-01	Gold contact, Tin shell
H3167-05	Gold contact, Gold shell

Maximum Pin Length = 4.75mm

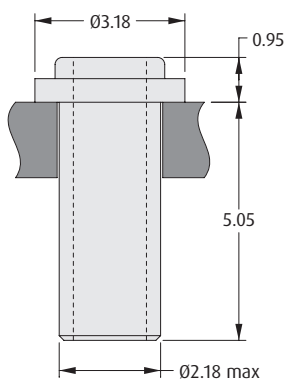
### RAISED SHOULDER, TAIL



ORDER CODE	FINISH
H3194-01	Gold contact, Tin shell
H3194-05	Gold contact, Gold shell

Maximum Pin Length = 4.30mm

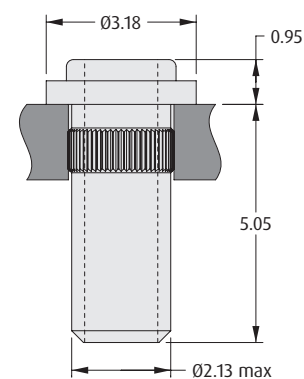
### 5.05mm BODY, OPEN END



ORDER CODE	FINISH
H3185-01	Gold contact, Tin shell
H3185-05	Gold contact, Gold shell

Open End - No Maximum Pin Length

### 5.05mm OPEN END, KNURL



ORDER CODE	FINISH
H3169-01	Gold contact, Tin shell
H3169-05	Gold contact, Gold shell

Open End - No Maximum Pin Length

All dimensions in mm.

# PC Board Sockets

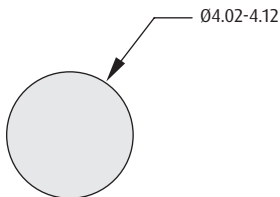
## Ø2.00mm Mating Pin

- Compatible with Ø2.00mm mating pins.
- Uses six finger Beryllium Copper contact for high-reliability performance.

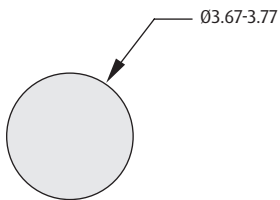


### Specifications

Mating pin size: Ø2.00 - 2.30mm  
 Contact depth: 4.10mm max  
 Pin length: See individual sockets

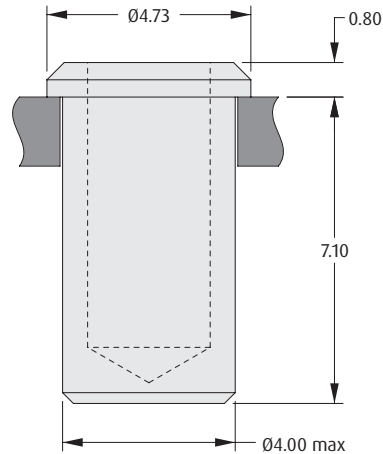


Recommended PC Board Pattern for 7.1mm Body Length (H3492-XX)



Recommended PC Board Pattern for 8mm Body Length (H3490-XX)

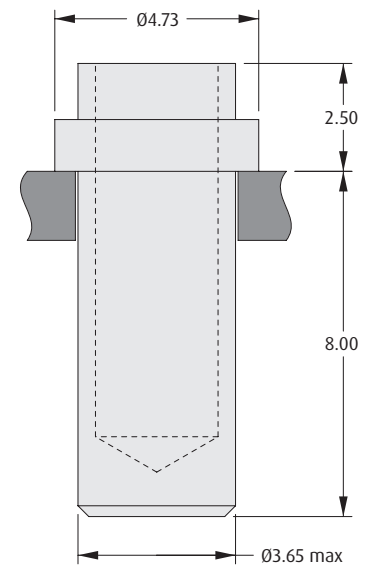
### 7.1mm BODY LENGTH



ORDER CODE	FINISH
H3492-01	Gold contact, Tin shell

Maximum Pin Length = 6.30mm

### 8mm BODY LENGTH



ORDER CODE	FINISH
H3490-01	Gold contact, Tin shell

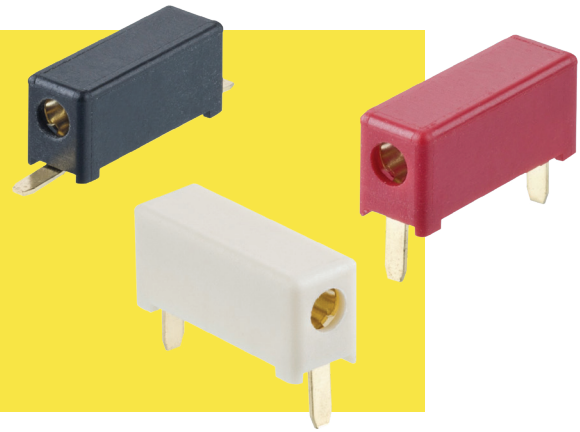
Maximum Pin Length = 8.50mm

All dimensions in mm.

# Test Sockets

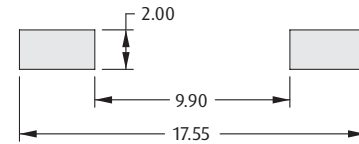
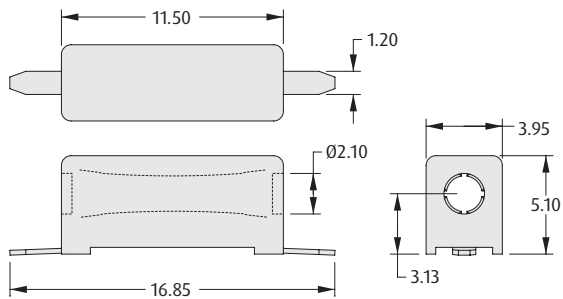
## Ø2.03mm Mating Probe

- ❖ Dual entry horizontal sockets with gold plated contacts.
- ❖ Colour coded options available.
- ❖ Surface Mount product features a flat top area, and is available in tape and reel packaging for automated assembly, using standard pick and place machines.
- ❖ 5A current rating and 1,500V voltage rating.
- ❖ Please consult Technical Drawings online for further specifications.



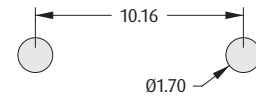
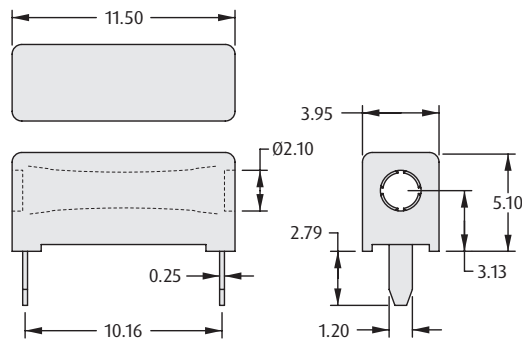
IC SOCKETS

### SURFACE MOUNT



Recommended PC Board Pattern

### PC TAIL / THROUGHBOARD



Recommended PC Board Pattern

### HOW TO ORDER

**M349 X - XX X**

**SERIES CODE**

**TYPE**

<b>7</b>	Surface Mount
<b>8</b>	PC Tail / Throughboard

**PACKAGING**

<b>Blank</b>	Loose
<b>R</b>	Tape & Reeled (M3497 only)

**TYPE**

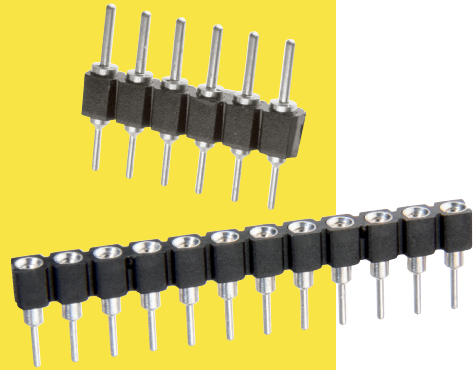
<b>94</b>	White (M3498 only)
<b>98</b>	Black
<b>99</b>	Red (M3498 only)

All dimensions in mm.

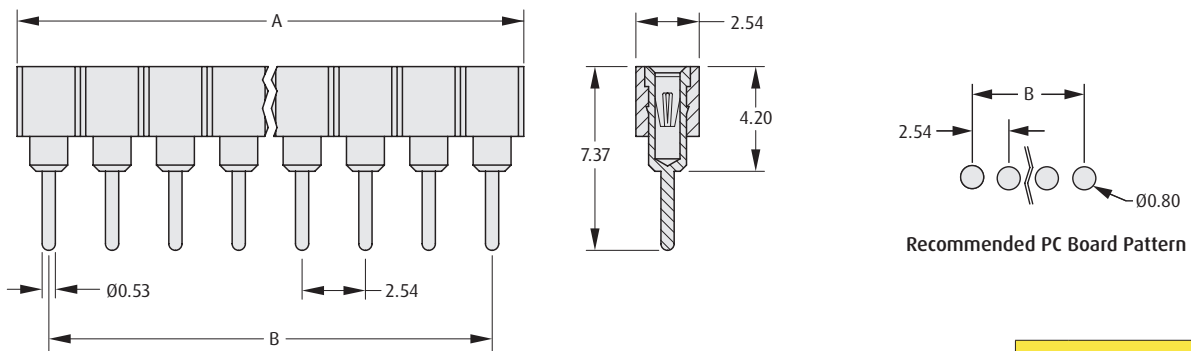
# IC Sockets

## Modular Single Row

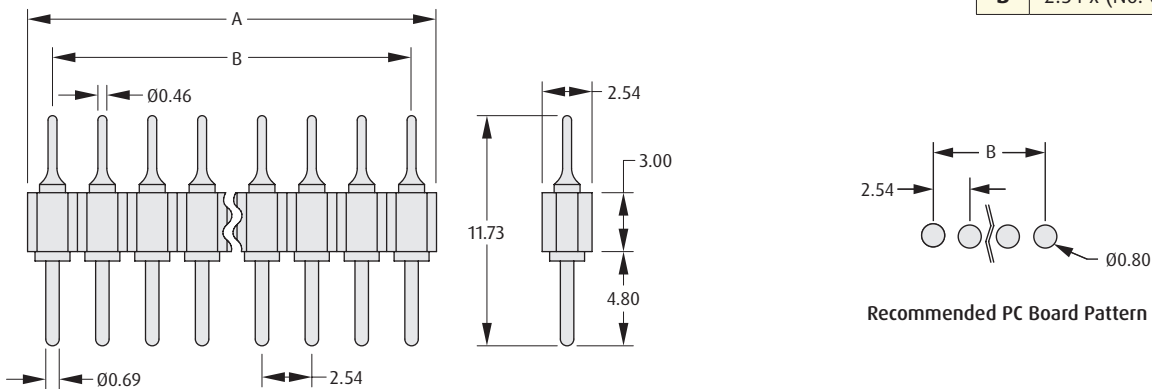
- Connectors can be cut to smaller sizes.
- Socket accepts mating pin  $\varnothing 0.40$  to  $0.56\text{mm}$ , using four finger Beryllium Copper contact technology.
- Please consult Technical Drawings online for further specifications.



### FEMALE



### MALE



#### CALCULATION

<b>A</b>	$2.54 \times \text{No. of contacts}$
<b>B</b>	$2.54 \times (\text{No. of contacts} - 1)$

### HOW TO ORDER

**D01 - 99 X XX XX**

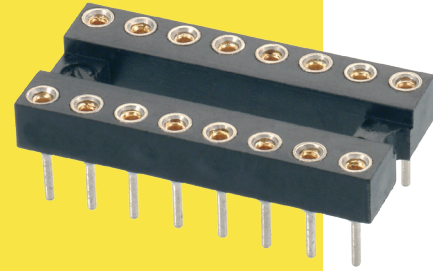
<b>SERIES CODE</b>	D01 - 99	<b>FINISH</b>	42 Gold + Tin (Female)
<b>TYPE</b>	7 Female	46 Tin (Male)	
	2 Male	<b>NO. OF CONTACTS</b>	20, 32

All dimensions in mm.

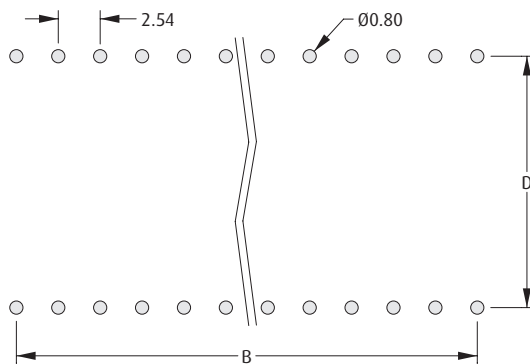
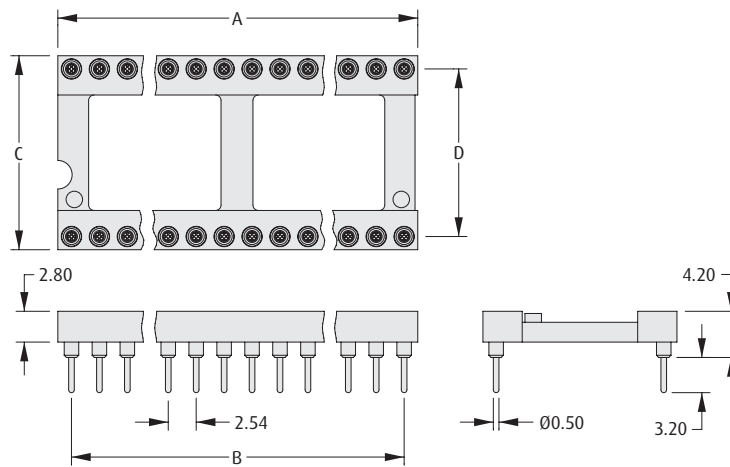
# IC Sockets

## Dual Row IC Socket

- ❖ Socket accepts IC leads  $\varnothing 0.41$  to  $0.56\text{mm}$ .
- ❖ End and side stackable.
- ❖ Utilises four finger Beryllium Copper contact technology.
- ❖ Gold finish on contact, with Tin finish on shells/termination.
- ❖ Please consult Technical Drawings online for further specifications.



### IC SOCKET



Recommended PC Board Pattern

ORDER CODE	NO. OF CONTACTS	A	B	C	D
D2806-42	6	7.60	5.08	10.02	7.62 (0.3")
D2808-42	8	10.10	7.62	10.02	7.62 (0.3")
D2814-42	14	17.70	15.24	10.02	7.62 (0.3")
D2816-42	16	20.30	17.78	10.02	7.62 (0.3")
D2818-42	18	22.80	20.32	10.02	7.62 (0.3")
D2820-42	20	25.30	22.86	10.02	7.62 (0.3")
D2922-42	22	27.80	25.40	10.02	7.62 (0.3")
D2822-42	22	27.80	25.40	12.60	10.16 (0.4")
D2924-42	24	30.40	27.94	10.02	7.62 (0.3")
D2724-42	24	30.40	27.94	12.60	10.16 (0.4")
D2824-42	24	30.40	27.94	17.64	15.24 (0.6")
D2928-42	28	35.50	33.02	10.02	7.62 (0.3")
D2828-42	28	35.50	33.02	17.64	15.24 (0.6")
D2832-42	32	40.60	38.10	17.64	15.24 (0.6")
D2840-42	40	50.80	48.26	17.64	15.24 (0.6")
D2948-42	48	60.90	58.42	17.64	15.24 (0.6")
D2864-42	64	81.20	78.74	25.40	22.86 (0.9")

All dimensions in mm.