

# PCB Hardware

## Contents

SMT Test Points	284
SMT Cable Clips	285
Coin Cell Holders	286
SMT Jumper Links	288
PCB Jumper Links	289
PCB Terminals, Turret Lugs	290
Spacers / Pillars / Standoff	
Clearance Spacers	293
Threaded Spacers	294

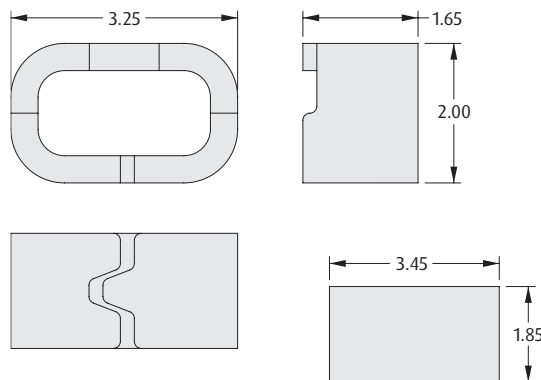
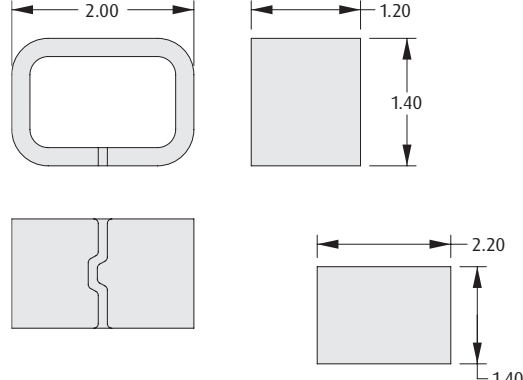
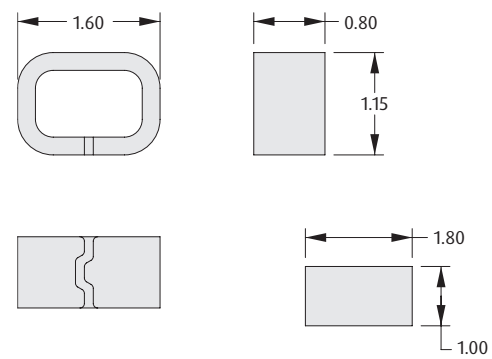


# SMT Hardware

## Test Points

- ❖ Ideal for use with standard probes, clips and hooks.
- ❖ Can be placed using industry standard equipment.
- ❖ Suitable for automatic or manual test.
- ❖ High speed placement.
- ❖ Industry standard tape and reel packaging.
- ❖ Strong and durable.



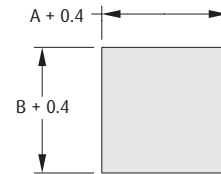
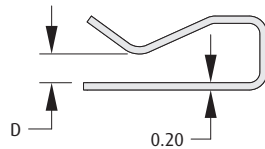
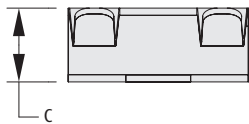
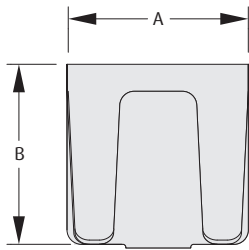
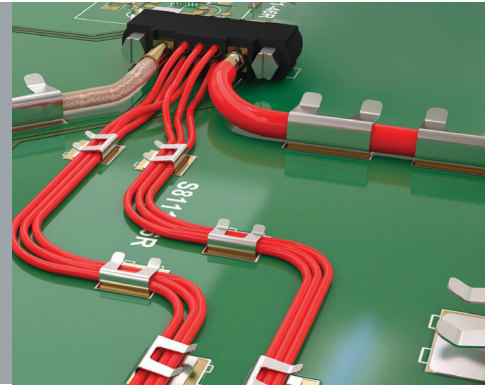
<p><b>❖ Materials</b></p> <p>Material: Copper Alloy Finish: Tin</p> <p><b>❖ Packaging</b></p> <p>Format: Tape &amp; Reel</p> <p>Reel quantity S1751-46R: 2,500 on a Ø330mm reel S2751-46R: 2,500 on a Ø178mm reel S2761-46R: 3,000 on a Ø178mm reel</p>	<p><b>2.00mm HIGH</b></p>  <p>Recommended PC Board Pattern</p> <p><b>ORDER CODE</b> S1751-46R</p>
<p><b>1.40mm HIGH</b></p>  <p>Recommended PC Board Pattern</p> <p><b>ORDER CODE</b> S2751-46R</p>	<p><b>1.15mm HIGH</b></p>  <p>Recommended PC Board Pattern</p> <p><b>ORDER CODE</b> S2761-46R</p>

All dimensions in mm.

# SMT Hardware

## Cable Management & Grounding Clips

- ❖ Suitable for use with insulated cables with outer diameters  $\varnothing 0.9$  to  $\varnothing 3$ mm and grounding braided coax cables.
- ❖ Cable clip can be soldered at same time as rest of board, reducing additional operation time required for mounting plastic clip types.
- ❖ Low profile & small footprint saves PCB space.



Recommended PCB Board Pattern

### Materials

Material: Copper Alloy  
Finish: Tin

### Packaging

Format: Tape & Reel  
Reel quantity:  $\varnothing 330$ mm reel, see table

## HOW TO ORDER

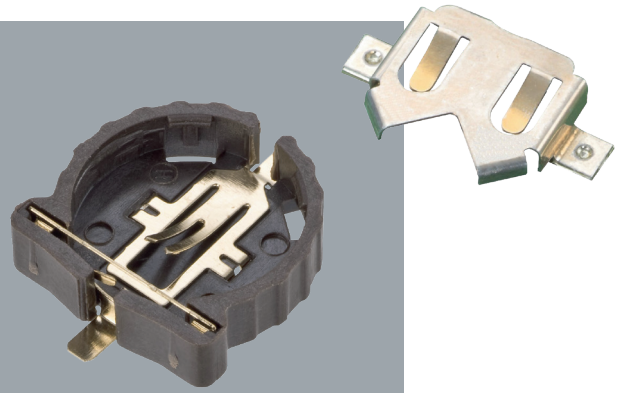
PART NO.	A	B	C	D	COAX GROUNDING	CABLE RETENTION	REEL QUANTITY
<b>S8091-46R</b>	5.00	4.00	1.35	0.70	$\varnothing 1.12$ mm	2 x $\varnothing 0.9$ mm	3,000
<b>S8101-46R</b>	5.00	4.00	1.50	0.80	RG178, RG179, RG316	2 x $\varnothing 1.0$ mm	3,000
<b>S8111-46R</b>	5.00	5.00	2.05	0.80	RG174, RG179, RG316	3 x $\varnothing 1.0$ mm, 2 x $\varnothing 1.5$ mm	1,500
<b>S8121-46R</b>	7.00	5.50	2.55	1.30	n/a	2 x $\varnothing 1.5$ mm, 1 x $\varnothing 2.0$ mm	1,300
<b>S8131-46R</b>	10.00	8.00	3.55	1.80	RG58	3 x $\varnothing 2.0$ mm, 1 x $\varnothing 3.0$ mm	800

All dimensions in mm.

# SMT Coin Cell Holder

## Battery Retainer for Ø12mm Coin Cell

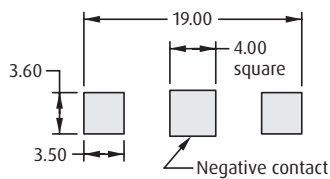
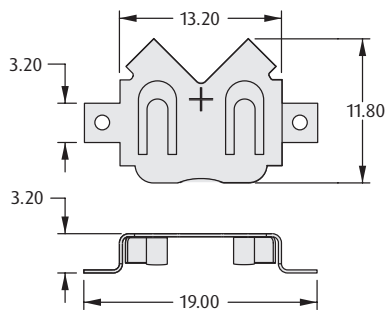
- ❖ Tape & reel packaged for auto-placement to PCB.
- ❖ Highly effective retention of coin cell batteries.
- ❖ Eliminates the need for soldered-in coin cells.
- ❖ Low profile design available with dual independent contact points for enhanced electrical reliability.
- ❖ Accommodates CR1220, CR1225 and similar coin cell batteries.



### LOW PROFILE

#### ❖ Packaging

Format: Tape & Reel  
 Reel quantity: 1,000 on a Ø330mm reel  
 Suitable for battery size: BR1225, CR1216, CR1220, CR1225

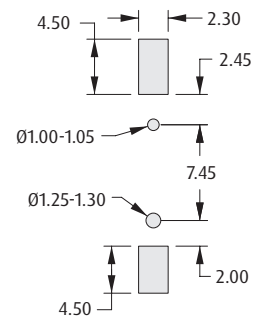
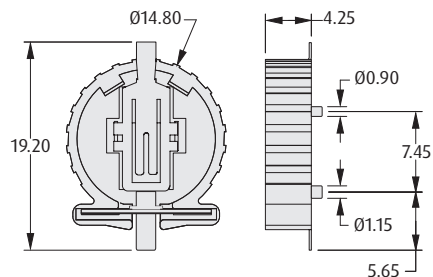


Recommended PC Board Pattern

### STANDARD

#### ❖ Packaging

Format: Tape & Reel  
 Reel quantity: 500 on a Ø330mm reel  
 Suitable for battery size: CR1220



Recommended PC Board Pattern

### HOW TO ORDER

**S8 XX1 - XX R**

**SERIES CODE**

TYPE	
201	Low Profile
411	Standard

PACKAGING	
R	Tape & Reeled

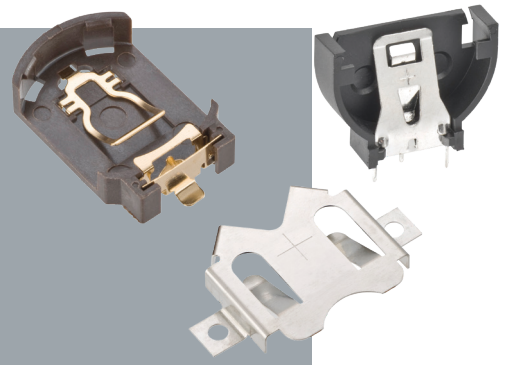
FINISH	
45	Gold (S8411)
46	Tin (S8201)

All dimensions in mm.

# Coin Cell Holder

## Battery Retainer for Ø20mm Coin Cell

- Horizontal designs are tape & reel packaged for auto placement.
- Highly effective retention of coin cell batteries.
- Eliminates the need for soldered-in cells.
- Vertical mount minimises PCB real estate usage.
- Low profile design available with dual independent contact points for enhanced electrical reliability.
- Accommodates CR2032 and similar coin cell batteries.



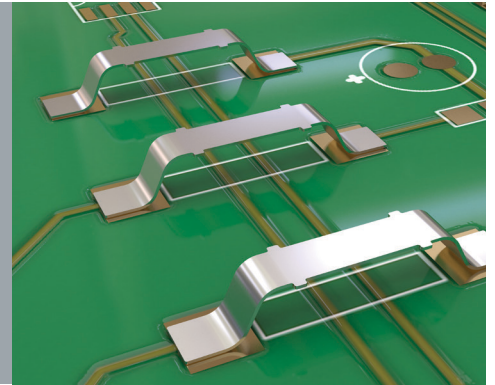
LOW PROFILE	STANDARD						
<b>⚡ Packaging</b>	<b>⚡ Packaging</b>						
Format: Tape & Reel Reel quantity: 550 on a Ø330mm reel Suitable for battery size: CR2016, CR2025, CR2032	Format: Tape & Reel Reel quantity: 500 on a Ø330mm reel Suitable for battery size: CR2032						
<p style="text-align: center;">Recommended PC Board Pattern</p>	<p style="text-align: center;">Recommended PC Board Pattern</p>						
VERTICAL							
<p style="text-align: center;">Recommended PC Board Pattern</p>	<b>⚡ Packaging</b>						
	Format: Reeled Tray Suitable for battery size: CR2032						
	<p style="text-align: center;">Recommended PC Board Pattern</p>						
HOW TO ORDER							
SERIES CODE	<b>S8 XX1 - XX R</b>						
TYPE	<table border="1"> <tr> <td style="background-color: #cccccc;">211</td> <td>Low Profile</td> </tr> <tr> <td style="background-color: #cccccc;">401</td> <td>Vertical</td> </tr> <tr> <td style="background-color: #cccccc;">421</td> <td>Standard</td> </tr> </table>	211	Low Profile	401	Vertical	421	Standard
211	Low Profile						
401	Vertical						
421	Standard						
PACKAGING	<table border="1"> <tr> <td style="background-color: #cccccc;">R</td> <td>Tape &amp; Reeled</td> </tr> <tr> <td style="background-color: #cccccc;">Blank</td> <td>Reeled Tray (S8401)</td> </tr> </table>	R	Tape & Reeled	Blank	Reeled Tray (S8401)		
R	Tape & Reeled						
Blank	Reeled Tray (S8401)						
FINISH	<table border="1"> <tr> <td style="background-color: #cccccc;">45</td> <td>Gold (S8421)</td> </tr> <tr> <td style="background-color: #cccccc;">46</td> <td>Tin (S8201, S8401)</td> </tr> </table>	45	Gold (S8421)	46	Tin (S8201, S8401)		
45	Gold (S8421)						
46	Tin (S8201, S8401)						

All dimensions in mm.

# SMT Hardware

## SMT Fixed Jumper Link

- Designed to link PCB tracks where through hole links are not possible.
- Typical applications include use on aluminium backplanes in power applications.
- High current.
- Small footprint.
- Low profile options available for space saving design.



### Materials

**Material:** Copper Alloy (S1621, S1911)  
Copper (S1731)

**Finish:** Tin

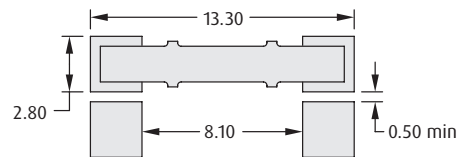
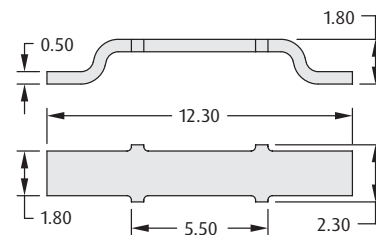
### Packaging

**Format:** Tape & Reel

**Reel quantity**

S1621-46R:	5,000 on a Ø330mm reel
S1731-46R:	2,500 on a Ø330mm reel
S1911-46R:	4,000 on a Ø330mm reel

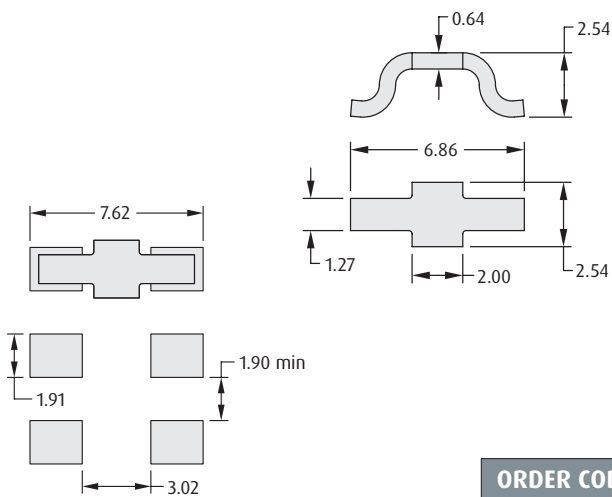
### 12.3mm LONG



Recommended PC Board Pattern

**ORDER CODE**  
**S1621-46R**

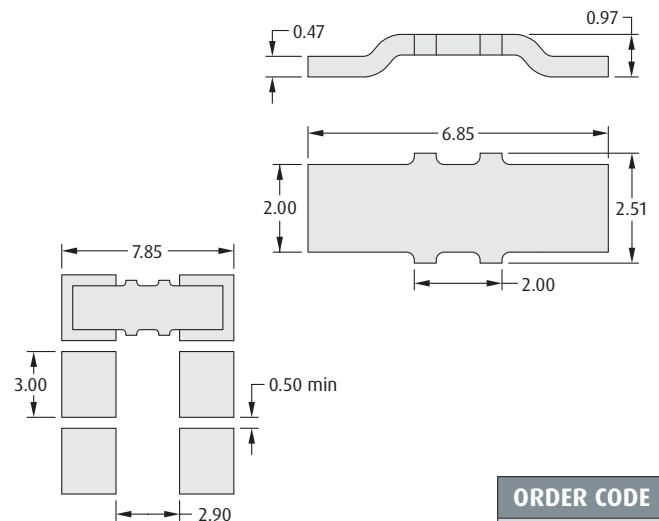
### 6.86mm LONG, 2.54mm HIGH



Recommended PC Board Pattern

**ORDER CODE**  
**S1731-46R**

### 6.85mm LONG, 0.97mm HIGH



Recommended PC Board Pattern

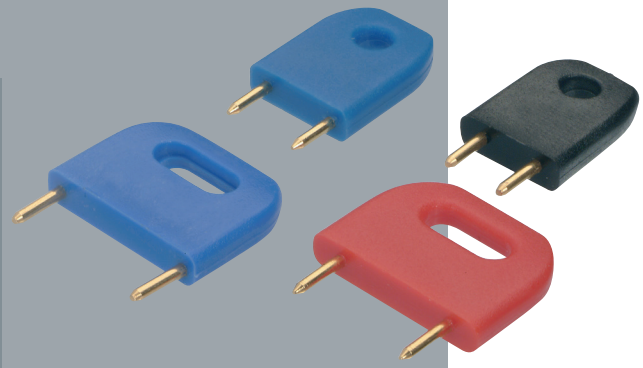
**ORDER CODE**  
**S1911-46R**

All dimensions in mm.

# PCB Hardware

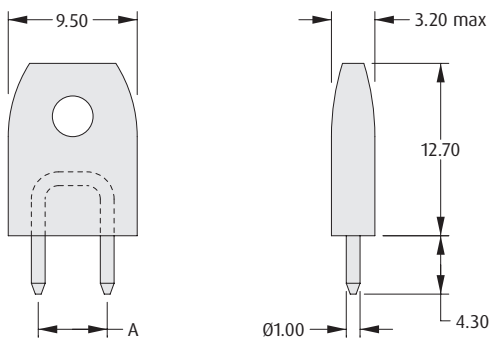
## Ø1mm Shorting Link Plugs

- Choice of insulated or un-insulated links.
- Insulated links supplied in a variety of colors, with a high-performance gold finish.
- Un-insulated links can be soldered directly into the PCB for permanent linking.
- Can be used with individual PCB sockets for hardware programming applications.

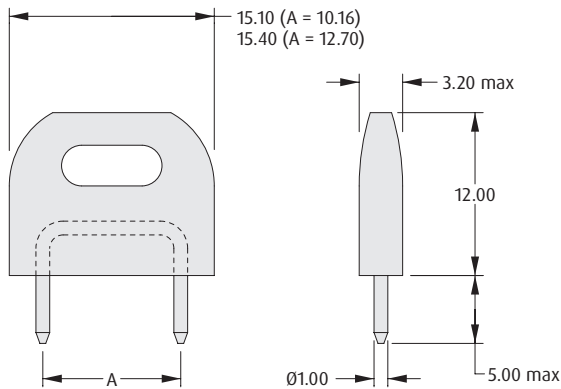


### INSULATED

#### Style 1



#### Style 2



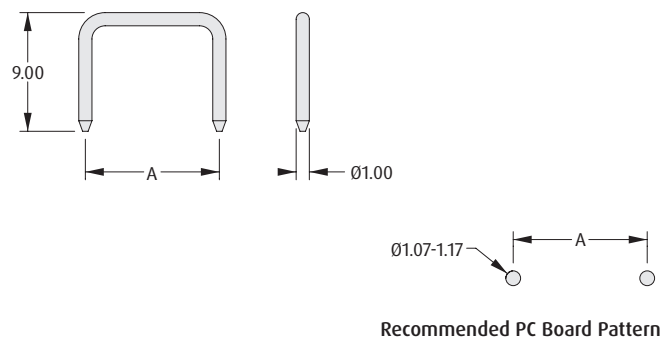
### Materials

Housing: PBT UL94V-0  
 Contact: Brass  
 Finish  
 Insulated: Gold  
 Un-insulated: See order code

### Electrical

Current rating: 10A at 20°C

### UN-INSULATED



### HOW TO ORDER

**D308 X - XX**

SERIES CODE

PITCH (A)	STYLE
6	5.08mm 1
7	6.35mm 1
8	10.16mm 2
9	12.70mm 2

COLOR

97	Blue
98	Black
99	Red

### HOW TO ORDER

**D308 X - XX**

SERIES CODE

PITCH (A)	
0	5.08mm
1	6.35mm
2	10.16mm

FINISH

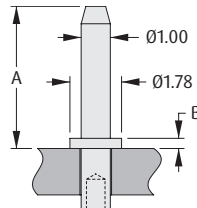
05	Gold
46	Tin

All dimensions in mm.

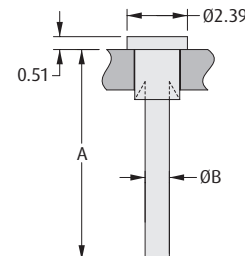
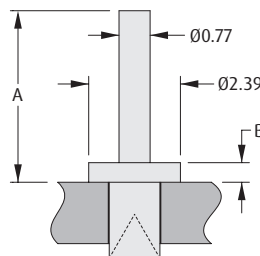
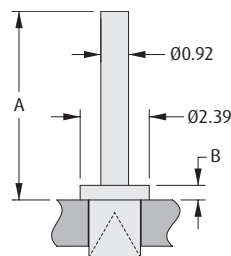
# PCB Hardware

## Turned Terminals

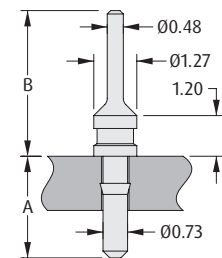
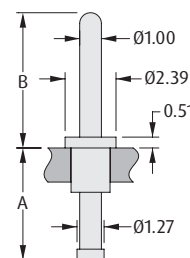
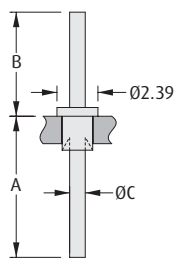
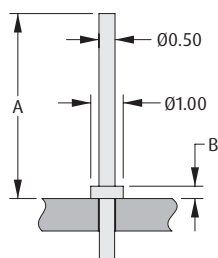
- Material: Brass with tin plating - also available in gold plating for the 1mm chamfered terminal pins (H217x series).
- Retention by swaging feature available.
- For swaging tool, change order code prefix to Z, and suffix to 00 (example Z2174-00).
- Suitable for a variety of PCB thicknesses from 1mm to 3.2mm.



ORDER CODE (TIN)	H2174-01	H2175-01	H2173-01	H2176-01	H2170-01	H2171-01
ORDER CODE (GOLD)	H2174-05	H2175-05	H2173-05	H2176-05	H2170-05	H2171-05
A	4.32mm	4.90mm	8.13mm	9.53mm	13.21mm	19.56mm
B	0.51mm	0.35mm	0.51mm	0.51mm	0.51mm	0.51mm
PANEL THICKNESS	1.60mm	1.60mm	1.60mm	1.60mm	1.60mm	1.60mm
MOUNTING HOLE	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm	Ø1.04 - 1.14mm



ORDER CODE	H2101A01	H2103A01	H2105A01	H2106A01	H2101B01	H2105B01
A	6.53mm	6.53mm	4.47mm	4.47mm	8.39mm	6.37mm
B	0.51mm	0.51mm	0.51mm	0.51mm	Ø0.93mm	Ø0.77mm
PANEL THICKNESS	1.60mm	3.20mm	1.60mm	2.40mm	1.60mm	1.60mm
MOUNTING HOLE	Ø1.79 - 1.87mm	Ø1.79 - 1.87mm	Ø1.33 - 1.41mm	Ø1.33 - 1.41mm	Ø1.79 - 1.87mm	Ø1.33 - 1.41mm



ORDER CODE	H3108-01	H2101-01	H2105-01	H9051-01	H2475-01
A	5.70mm	8.23mm	5.05mm	5.26mm	3.00mm
B	0.38mm	6.07mm	4.48mm	6.35mm	4.30mm
C	-	Ø0.87mm	Ø0.77mm	-	-
PANEL THICKNESS	1.00mm	1.60mm	1.60mm	1.60mm	1.60mm
MOUNTING HOLE	Ø0.50 - 0.55mm	Ø1.79 - 1.87mm	Ø1.33 - 1.41mm	Ø1.83 - 1.88mm	Ø0.77 - 0.85mm

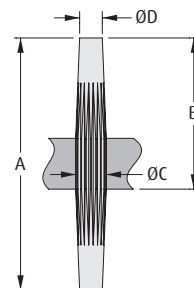
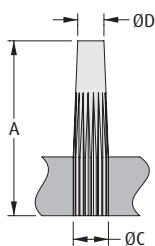
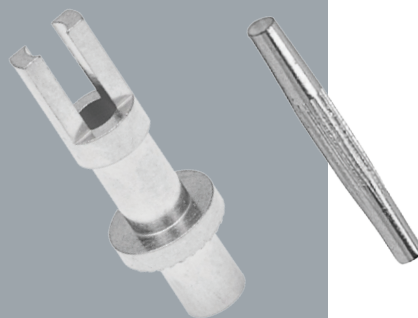
All dimensions in mm.



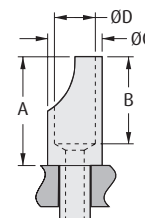
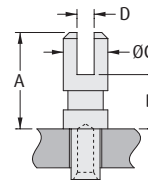
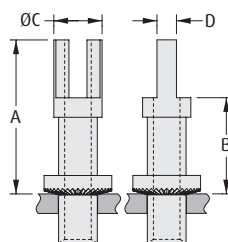
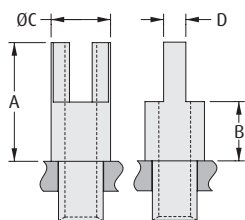
# PCB Hardware

## Turned Terminals

- Material: Brass with tin plating.
- Retention by swaging feature available.
- For swaging tool, change order code prefix to Z, and suffix to 00 (example Z2051-00).
- Suitable for a variety of PCB thicknesses from 1.6mm to 3.2mm.



ORDER CODE	H2088-01	H2085-01	H2081-01	H2089-01	H2087-01	H2083-01
A	7.14mm	7.14mm	9.53mm	11.91mm	11.91mm	15.88mm
B	-	-	-	7.14mm	7.14mm	9.52mm
C	Ø1.13mm	Ø1.43mm	Ø1.68mm	Ø1.13mm	Ø1.43mm	Ø1.68mm
D	Ø0.76mm	Ø1.12mm	Ø1.22mm	Ø0.76mm	Ø1.12mm	Ø1.22mm
PANEL THICKNESS	2.40mm	2.40mm	2.40mm	2.40mm	2.40mm	2.40mm
MOUNTING HOLE	Ø1.00 - 1.05mm	Ø1.30 - 1.35mm	Ø1.55 - 1.60mm	Ø1.00 - 1.05mm	Ø1.30 - 1.35mm	Ø1.55 - 1.60mm



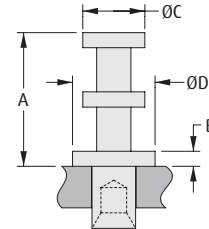
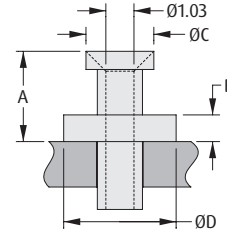
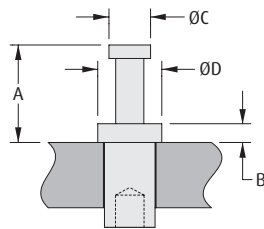
ORDER CODE	H2051-01	H2055-01	H2039-01	H9023-01	H9026-01
A	4.78mm	6.35mm	12.65mm	3.96mm	6.35mm
B	2.39mm	3.17mm	7.90mm	2.23mm	5.08mm
C	Ø3.18mm	Ø3.18mm	Ø3.90mm	Ø1.83mm	Ø3.18mm
D	0.73mm	1.13mm	1.54mm	0.71mm	Ø2.39mm
THROUGH HOLE	Ø1.06mm	Ø1.74mm	Ø2.22mm	-	Ø1.13mm
PANEL THICKNESS	1.60mm	2.40mm	3.20mm	1.60mm	2.40mm
MOUNTING HOLE	Ø1.60 - 1.68mm	Ø2.40 - 2.48mm	Ø3.19 - 3.27mm	Ø1.28 - 1.38mm	Ø1.84 - 1.92mm

All dimensions in mm.

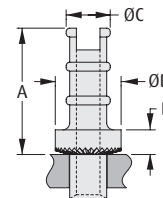
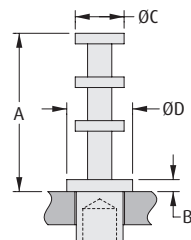
# PCB Hardware

## Turned Terminals

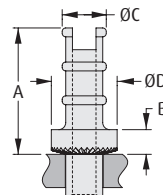
- Material: Brass with tin plating.
- Retention by swaging feature available.
- For swaging tool, change order code prefix to Z, and suffix to 00 (example Z9001-00).
- Suitable for a variety of PCB thicknesses from 1.6mm to 3.2mm.



ORDER CODE	H9001-01	H9004-01	H2061-01	H2121-01
A	2.39mm	4.74mm	3.18mm	5.15mm
B	0.46mm	1.19mm	0.94mm	0.58mm
C	Ø1.02mm	Ø1.91mm	Ø2.33mm	Ø2.39mm
D	Ø1.57mm	Ø3.18mm	Ø4.03mm	Ø3.18mm
PANEL THICKNESS	1.60mm	1.60mm	1.60mm	1.60mm
MOUNTING HOLE	Ø1.25 - 1.33mm	Ø2.01 - 2.09mm	Ø1.60 - 1.68mm	Ø1.69 - 1.74mm



ORDER CODE	H9020-01	H9021-01	H2072-01	H2072Z01	H2072ZL1
A	7.65mm	7.65mm	6.29mm	6.52mm	6.52mm
B	0.58mm	0.58mm	1.01mm	1.24mm	1.24mm
C	Ø2.36mm	Ø2.36mm	Ø3.25mm	Ø2.54mm	Ø2.54mm
D	Ø3.18mm	Ø3.18mm	Ø3.96mm	Ø3.96mm	Ø3.96mm
PANEL THICKNESS	1.60mm	2.40mm	1.60mm	1.60mm	2.40mm
MOUNTING HOLE	Ø2.35 - 2.45mm	Ø2.35 - 2.45mm	Ø2.17 - 2.27mm	Ø2.01 - 2.11mm	Ø2.01 - 2.11mm



ORDER CODE	H2074Z01	H2071ZS1	H2071Z01	H2073Z01
A	8.74mm	9.12mm	9.12mm	9.12mm
B	1.60mm	1.78mm	1.78mm	1.78mm
C	Ø4.57mm	Ø3.18mm	Ø3.18mm	Ø3.18mm
D	Ø6.35mm	Ø4.75mm	Ø4.75mm	Ø4.75mm
PANEL THICKNESS	3.20mm	1.60mm	2.40mm	3.20mm
MOUNTING HOLE	Ø3.93 - 4.03mm	Ø2.68 - 2.78mm	Ø2.68 - 2.78mm	Ø2.68 - 2.78mm

All dimensions in mm.

# Metric Spacers

## Clearance Spacers

- Standard lengths available from 3 to 30mm.
- Brass spacers: base material is free-machining brass, with nickel plating.
- Aluminium spacers: supplied with a clear passivation finish to prevent oxidation.
- Plastic material: Nylon 66 UL94V-2.



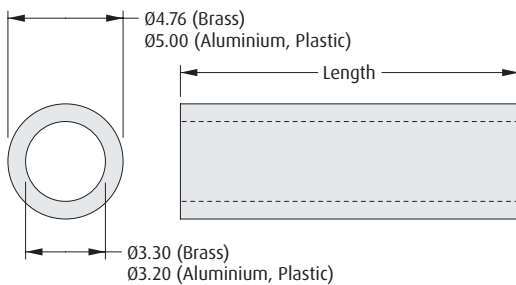
### CLEARANCE FOR M3 THREAD

#### Materials

Base material: Brass, Aluminium or Plastic

#### Finish

Brass: Nickel  
Aluminium: Clear Passivate



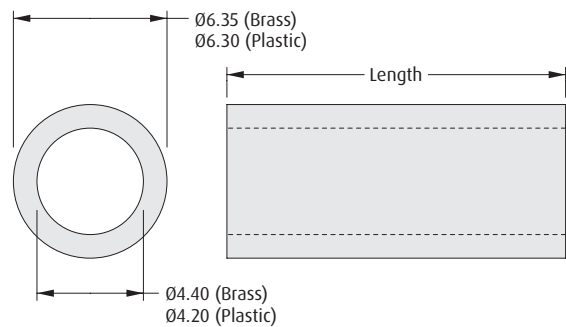
### CLEARANCE FOR M4 THREAD

#### Materials

Base material: Brass or Plastic

#### Finish

Brass: Nickel



### HOW TO ORDER

**R30 - 6 XX XX XX**

#### SERIES CODE

#### MATERIAL

01	Brass
20	Aluminium
70	Plastic

#### LENGTH (mm)

03 to 16, 18, 20, 25, 30	Brass, Aluminium
03 to 16, 18, 20, 25	Plastic

#### FINISH

02	Nickel (Brass only)
14	Passivation (Aluminium only)
94	White (Plastic only)

### HOW TO ORDER

**R40 - 6 XX XX XX**

#### SERIES CODE

#### MATERIAL

00	Brass
71	Plastic

#### LENGTH (mm)

03 to 16, 18, 20, 25, 30	Brass
03, 05 to 08, 10 to 12, 15, 18	Plastic

#### FINISH

02	Nickel (Brass only)
94	White (Plastic only)

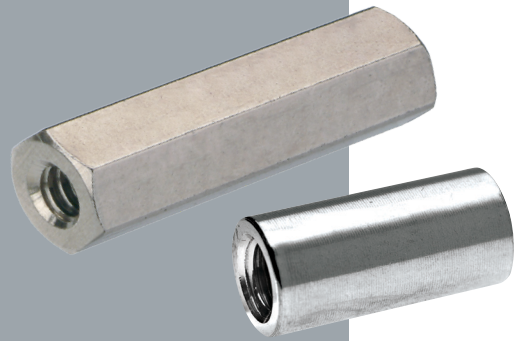
All dimensions in mm.

# Metric Spacers

SPACERS

## Threaded Female Spacers

- Available in a variety of standard body lengths.
- Brass spacers: base material is free-machining brass, with nickel plating.
- Plastic material: Nylon 66 UL94V-2.
- Longer thread lengths may not be threaded through the complete length, but have female threads at both ends.



HEXAGONAL	CIRCULAR
<p><b>Materials</b></p> <p>Base material: Brass or Plastic                      Finish: Brass: Nickel</p>	<p><b>Materials</b></p> <p>Base material: Brass                      Finish: Brass: Nickel</p>

### HOW TO ORDER

**RXX - XXX XX XX**

SERIES CODE	
<b>R25-100</b>	Hexagonal, Brass, M2.5 Thread
<b>R30-100</b>	Hexagonal, Brass, M3 Thread
<b>R30-101</b>	Hexagonal, Brass, M3 Thread
<b>R30-161</b>	Hexagonal, Plastic, M3 Thread
<b>R30-500</b>	Circular, Brass, M3 Thread
<b>R40-100</b>	Hexagonal, Brass, M4 Thread

FINISH	
<b>00</b>	White (Plastic only)
<b>02</b>	Nickel (Brass only)

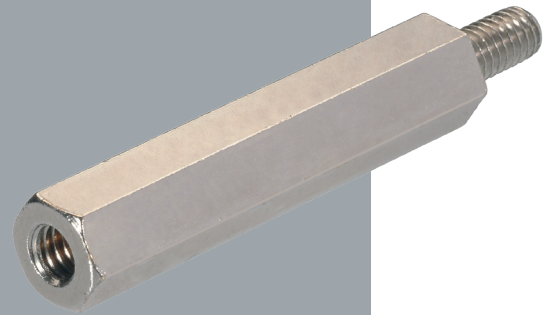
LENGTH (mm)	
<b>06 to 16, 18, 20, 25</b>	R30-161, R40-100
<b>04 to 16, 18, 20, 25</b>	Other

All dimensions in mm.

# Metric Spacers

## Threaded Male Pillars

- Available in a choice of thread sizes, with a variety of standard body lengths.
- Base material is free-machining Brass, with nickel plating.



MALE/MALE		MALE/FEMALE																				
<b>HOW TO ORDER</b>																						
<b>R30 - 400 XX 02</b>																						
<b>SERIES CODE</b> R30 - 400		<b>FINISH</b> 02 Nickel																				
<b>LENGTH (mm)</b> 04 to 16, 18, 20, 25, 30, 35, 40																						
<b>HOW TO ORDER</b>																						
<b>RXX - 30X XX 02</b>																						
<b>SERIES CODE</b> R25-300 M2.5 Thread R30-300 M3 Thread, 6mm Stud R30-301 M3 Thread, 8mm Stud R40-300 M4 Thread		<b>FINISH</b> 02 Nickel																				
<b>LENGTH (mm)</b>																						
	03	04	05	06	07	08	09	10	11	12	13	14	15	16	18	20	25	30	35	40		
<b>THREAD LENGTH</b>	X	1.9	2.5	2.5	3.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	X	X	X	X	R25-300	
	X	X	2.0	2.5	3.0	4.5	5.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	R30-300
	X	X	2.5	3.0	4.0	5.0	5.0	5.0	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	X	X	X	X	R30-301
	X	X	X	2.5	3.5	4.5	5.5	6.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	X	R40-300

All dimensions in mm.