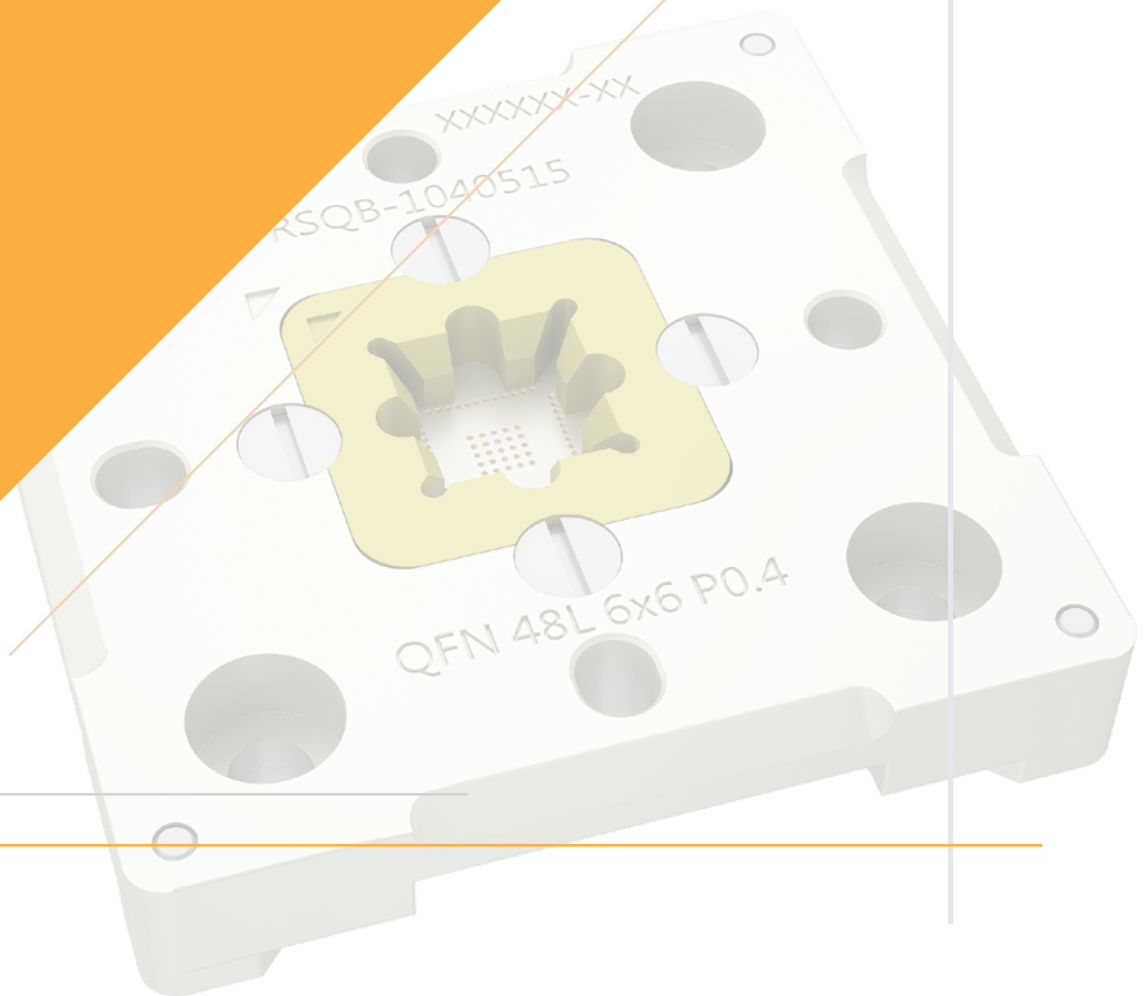


Semiconductor Testing Solutions

Testing Solutions
IC Testing Probes



C.C.P. CONTACT PROBES

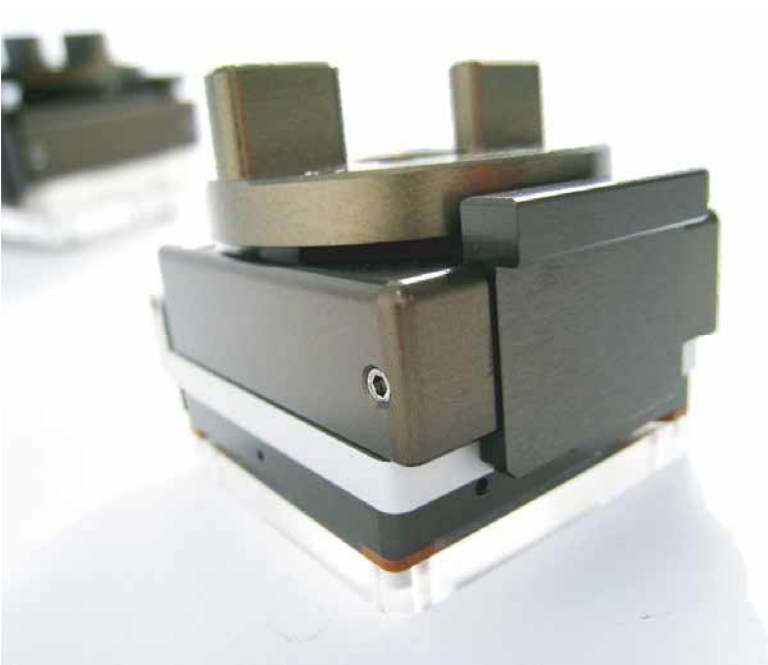
Content

- Company Profile..... 1
- C.C.P. Strengths 2
- Product Application
 - General Final Test Solutions 5
 - Wafer-Level CSP Test Solutions..... 27
 - High Current Solutions 30
 - High Frequency Solutions 34
 - Kelvin Contact Solutions 38
 - Memory Test Solutions..... 41
 - Burn In Test Solutions..... 44
 - Fine Pitch Conn./ FPC Test Solutions 47
 - Panel Test Solutions 49
 - ATE Connection Solutions..... 53
 - Probe Cleaning..... 54
- IC Test Probe Index..... 55
- Contact Us

C.C.P Contact Probes Co., Ltd. was founded in 1986 with the goal "to set new quality standards in the industry and put customer satisfaction at the core of the business." C.C.P. has started as a specialized provider of test probes and socket auxiliary solutions and has slowly expanded its product portfolio in related industries such as electronic component manufacturing. Our customized manufacturing equipment and strong research team enable us to stay at the forefront of the industry and develop products that reach the highest standards in terms of quality and availability.

After years of continuous growth, C.C.P. went public in 2001 and got listed on the Taiwan Stock Exchange in 2003. As of today, C.C.P. has subsidiaries in the U.S.A., China, Germany, India, Singapore, Japan and Korea, meeting demands from customers around the globe.

Apart from superior product quality, C.C.P. is committed to delivering excellent customer support, fast responses, and engaging customer interaction.

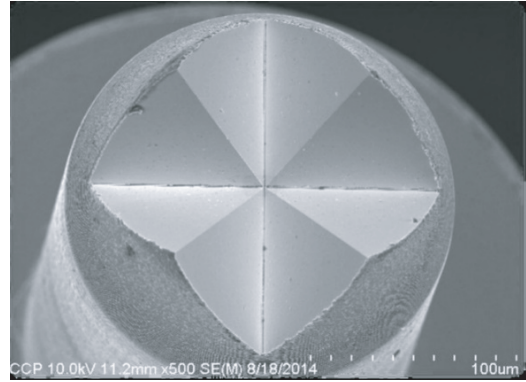


C.C.P. Strengths

Mirror process



Normal



Mirror process

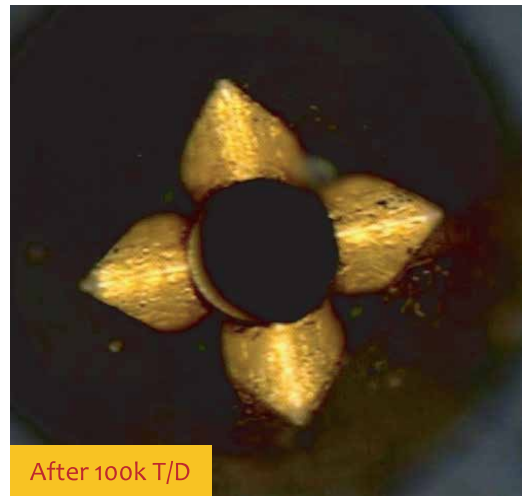
C.C.P. consistently delivers high-quality products by optimizing the production process. The results are extremely durable and reliable products that meet our client's expectations. One of these cutting-edge technologies is called “Mirror Process” which significantly improves the surface quality of the pin tip.

- Less chance for solder migrating
- Less probe cleaning necessary

Tip appearance comparison after 100,000 touchdowns



Normal



Mirror process

C.C.P. Strengths

Plating Line



C.C.P. has its own plating facility and technology. All materials we receive go through a strict quality control and materials used are certified by RoHS. Our plating technology is the result of more than 20 years of in-house research and delivers an industry leading performance for our products.

C.C.P. is specialized in thick-layer Au-plating (over 150u"), blind-hole plating (Aspect Ratio >6.5:1), precious metals processing (Pd alloy), etc.



Advanced Analysis Equipment



Optical Profiler

Surface roughness inspection and measurement.



Nanoindenter

Plating hardness measurement.



FE-SEM

Surface observation with EDS for material analysis.

Product Number Chart

PE 1-031 DF 21-01 F0

Plating and raw material

- DE BeCu/SK4, Au plated
- PE Pd alloy w/o plating
- WE BeCu, WJ3 plated

Manufacturing Procedure

- A0 Standard Manufacturing Process
- F0 Mirror Process

Structure Type

- 1 Double-active
- 2 Double-active with Ring
- 3 Single-active
- 4 Single-active with Ring

Serial Number

Barrel Outer Diameter

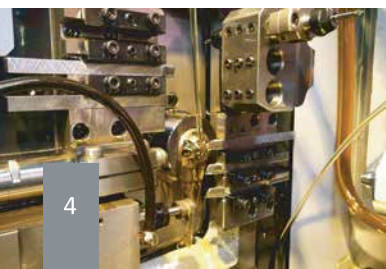
Ex 031 corresponds with barrel OD Φ 0.31mm

Barrel Length

Ex 21 corresponds with barrel length 2.1mm

Head Type

F		<p>Crown</p> <p>Easily penetrates into solder ball or pad for improved contact.</p>	B		<p>Conical 60°</p> <p>Sharper tip to strongly penetrate the oxide or particle on PCB.</p>
P		<p>Pyramid Crown</p> <p>Easily penetrates into solder ball or pad with stronger tips for improved contact.</p>	E		<p>Conical 90°, 120°</p> <p>Sharper tip to softly penetrate the oxide or particle on PCB.</p>
W		<p>Serrated 5 Tips</p> <p>Easily penetrates into solder ball or pad with more contact points than crown type.</p>	D		<p>Sphere</p> <p>For avoiding probe mark on PCB. It is usually used in bottom plunger.</p>
S		<p>Serrated 8 Tips</p> <p>Usually used for Kelvin Tests that have a very small pitch between the probe tips.</p>	G		<p>Flat</p> <p>Mostly used in bottom plunger to avoid scratching PCB gold pad and leaving no marks or indentations.</p>
H		<p>Serrated 9 Tips</p> <p>Easily penetrates into solder ball or pad with more contact points than crown type.</p>	L		<p>Half Moon</p> <p>Used for Kelvin type. Pointing to ball / pad, half moon tip perfectly aims the testing area.</p>
A		<p>Cup</p> <p>Commonly used for testing PGA package types of IC.</p>	L		<p>Blade</p> <p>Sharper than half moon tip, blade type is more commonly used in Kelvin pin as for standard types.</p>



General Final Test

C.C.P. has over 25 years of experience in the development and manufacturing of sockets and pins. Our research and development teams are constantly improving the materials and manufacturing process to offer our customers the best solutions. We have developed more than 300 customized pins and over 50 special pins that are designed to withstand high currents, high-temperature environments or can handle high frequency data transmission.

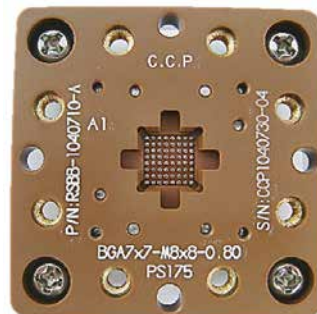
Design Concept

Applied IC package
BGA, QFN, QFP, LGA, CSP

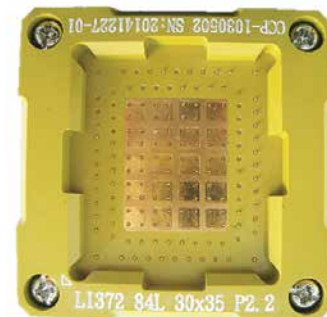
Pitch
0.2~2.2mm



QFN Socket
Pitch 0.3mm



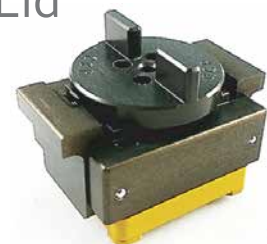
BGA Socket
Pitch 0.8mm



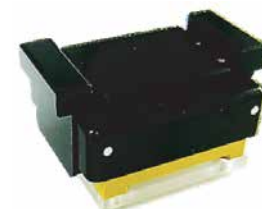
LGA Socket
Pitch:2.2mm

General IC Test Socket	Specification
IC Package Size	1.5X1.5~38X38 mm ²
Min. Pitch	0.2mm
Material	Torlon 4203, Torlon 5530, PEEK, PEEK ceramic, SCP 5000
Data Rate	6 Gpbs/ 8 Gpbs/ 12 Gpbs <small>Performance will be different according to testing condition</small>
Life Time (Pin)	>200K

Lid



Knob



Block

Probe Specifications

Unit:mm; []in

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

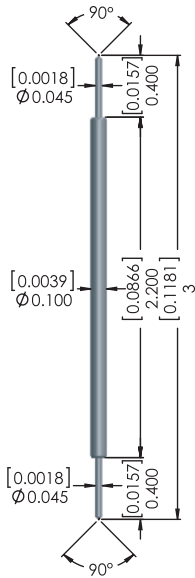
Pitch 0.65

Pitch 0.8

Pitch 1.0

Pitch 1.27

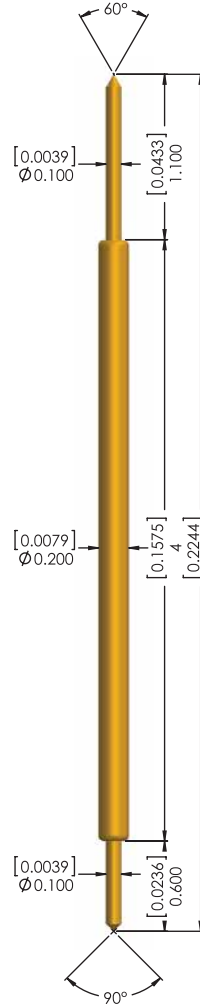
PE1-010EE22-01A0



Material
 Top Plunger
 Pd alloy
 Barrel
 Ni alloy
 Spring
 SWP, Au plated
 Bottom Plunger
 Pd alloy

Mechanical Spec.
 Recommended Travel
 0.35mm
 Full Travel
 0.50mm
 Spring Force
 79±20%@0.35mm
 Operating Temp.
 -15°C~125°C

DE1-020BE40-01A0



Material
 Top Plunger
 SK4, Au plated
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 SK4, Au plated

Mechanical Spec.
 Recommended Travel
 0.60mm
 Full Travel
 0.90mm
 Spring Force
 129±20%@0.60mm
 Operating Temp.
 -15°C~125°C

Electrical Spec. **G S G**

Pitch: 0.2mm Socket Material: Peek 1000

Current Rating 0.6A continuous
 Contact Resistance <300mΩ(AVG)
 Characteristic Impedance 80.8Ω
 Insertion Loss -1dB@9.9GHz
 Return Loss -20dB@2.48GHz
 Time Delay 13.74 psec
 Loop Inductance 1.11 nH
 Capacitance 0.17 pF

Electrical Spec. **G S G**

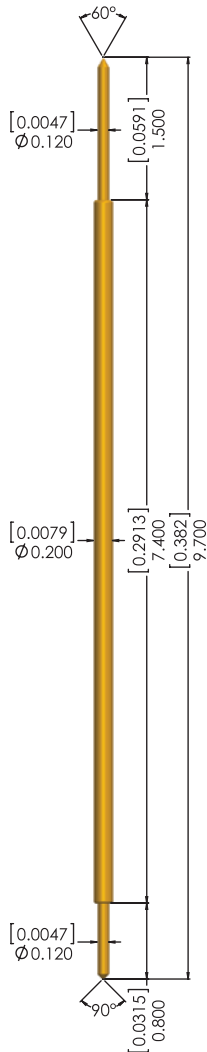
Pitch: 0.3mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <200mΩ(AVG)
 Characteristic Impedance 55.9Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@12.88GHz
 Time Delay 26.83 psec
 Loop Inductance 1.5 nH
 Capacitance 0.48 pF

Probe Specifications

Unit:mm; []in

DE1-020BE74-01A0

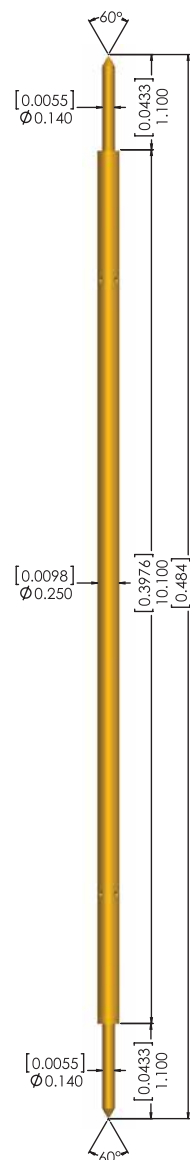


Material
 Top Plunger
 BeCu, Au plated
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 BeCu, Au plated

Mechanical Spec.
 Recommended Travel
 0.80mm
 Full Travel
 1.30mm
 Spring Force
 6g±20%@0.80mm
 Operating Temp.
 -15°C~125°C

Electrical Spec. **GS**
 Pitch: 0.3mm Socket Material: Peek 1000
 Current Rating 0.5A continuous
 Contact Resistance <200mΩ(AVG)
 Characteristic Impedance 53.07Ω
 Insertion Loss -1dB >20GHz
 Return Loss -20dB@8.14GHz
 Time Delay 46.17psec
 Loop Inductance 2.45 nH
 Capacitance 0.87 pF

DE1-025BB10-02A0



Material
 Top Plunger
 SK4, Au plated
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 SK4, Au plated

Mechanical Spec.
 Recommended Travel
 1.45mm
 Full Travel
 2.20mm
 Spring Force
 30g±20%@1.45mm
 Operating Temp.
 -15°C~125°C

Electrical Spec. **GS**
 Pitch: 0.4mm Socket Material: Peek 1000
 Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 51.31Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@7.63GHz
 Time Delay 55.93 psec
 Loop Inductance 2.87 nH
 Capacitance 1.09 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []:in

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

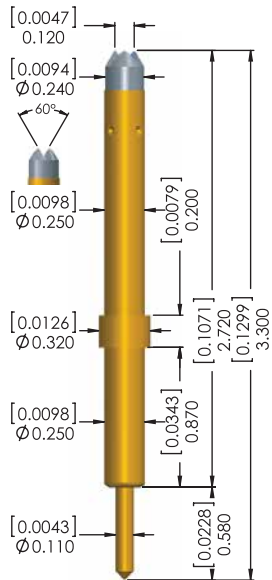
Pitch 0.65

Pitch 0.8

Pitch 1.0

Pitch 1.27

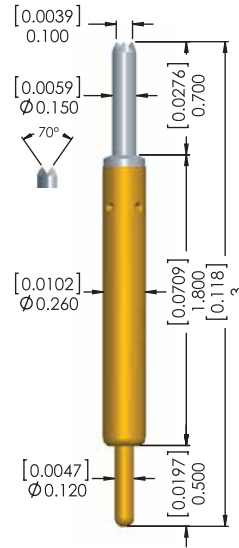
PE4-025EF24-01A0



Material
 Top Plunger
Pd alloy
 Barrel
PhBz, Au plated
 Spring
SWP, Au plated
 Bottom Plunger
BeCu, Au plated

Mechanical Spec.
 Recommended Travel
0.40mm
 Full Travel
0.51mm
 Spring Force
23g±20%@0.40mm
 Operating Temp.
-15°C~125°C

PE3-026DF17-01F0



Material
 Top Plunger
Pd alloy
 Barrel
PhBz, Au plated
 Spring
SWP, Au plated
 Bottom Plunger
BeCu, Au plated

Mechanical Spec.
 Recommended Travel
0.35mm
 Full Travel
0.50mm
 Spring Force
20g±20%@0.35mm
 Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000



Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 50.15 Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB>20GHz
 Time Delay 16.55 psec
 Loop Inductance 0.83 nH
 Capacitance 0.33 pF

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

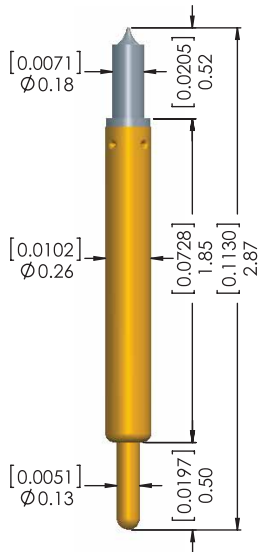


Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 57.68Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@9.16GHz
 Time Delay 13.31 psec
 Loop Inductance 0.77 nH
 Capacitance 0.23 pF

Probe Specifications

Unit:mm; []in

PE3-026BD18-01A0



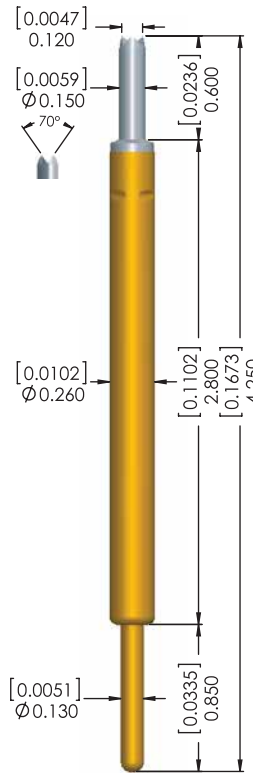
Material

Top Plunger
Pd alloy
Barrel
PhBz, Au plated
Spring
SWP, Au plated
Bottom Plunger
BeCu, Au plated

Mechanical Spec.

Recommended Travel
0.30mm
Full Travel
0.40mm
Spring Force
24g±20%@0.30mm
Operating Temp.
-15°C~125°C

PE3-026DF27-01F0



Material

Top Plunger
Pd alloy
Barrel
PhBz, Au plated
Spring
SWP, Au plated
Bottom Plunger
BeCu, Au plated

Mechanical Spec.

Recommended Travel
0.40mm
Full Travel
0.55mm
Spring Force
22g±20%@0.40mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000



Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 54.77 Ω
Insertion Loss -1dB@>20GHz
Return Loss -20dB@16GHz
Time Delay 12.6 psec
Loop Inductance 0.69 nH
Capacitance 0.23 pF

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000



Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 54Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@18.9GHz
Time Delay 21.7 psec
Loop Inductance 1.18 nH
Capacitance 0.40 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

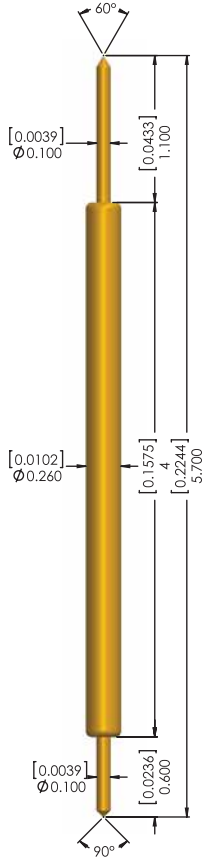
Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []:in

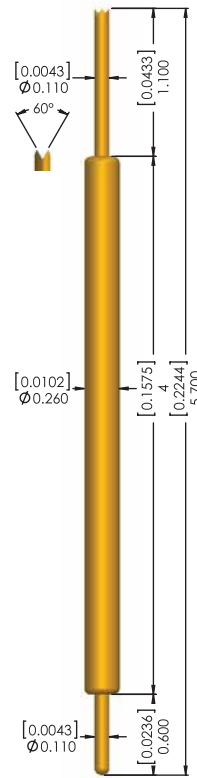
DE1-026BE40-01A0



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 PhBz , Au plated
 Spring
 SUS , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.65mm
 Full Travel
 1.00mm
 Spring Force
 14g±20%@0.65mm
 Operating Temp.
 -55°C~150°C

DE1-026DF40-02A0



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 PhBz , Au plated
 Spring
 SUS , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.65mm
 Full Travel
 0.85mm
 Spring Force
 18g±20%@0.65mm
 Operating Temp.
 -55°C~150°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 49.46Ω
 Insertion Loss -1dB@16.7GHz
 Return Loss -20dB@8.23GHz
 Time Delay 27.7 psec
 Loop Inductance 1.37 nH
 Capacitance 0.56 pF

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 47.71Ω
 Insertion Loss -1dB@17.81GHz
 Return Loss -20dB@6.45GHz
 Time Delay 27.67psec
 Loop Inductance 1.32 nH
 Capacitance 0.58 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

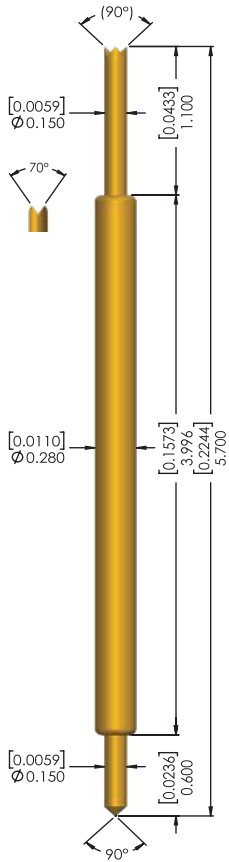
Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []in

DE1-028EF40-05A0



Material

- Top Plunger: SK4, Au plated
- Barrel: PhBz, Au plated
- Spring: SWP, Au plated
- Bottom Plunger: SK4, Au plated

Mechanical Spec.

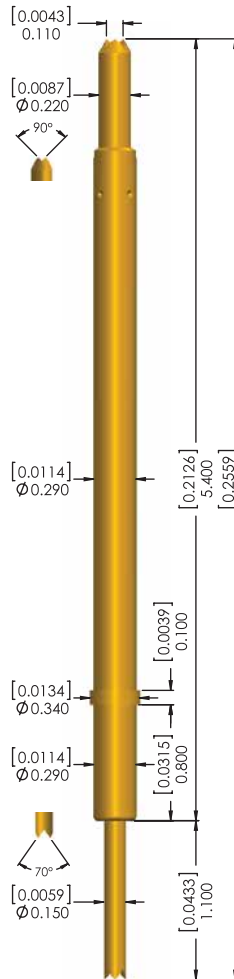
- Recommended Travel: 0.65mm
- Full Travel: 1.10mm
- Spring Force: 28g±20% @ 0.65mm
- Operating Temp.: -15°C ~ 125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

- Current Rating: 1A continuous
- Contact Resistance: <175mΩ(AVG)
- Characteristic Impedance: 49.6Ω
- Insertion Loss: -1dB @ 17.49GHz
- Return Loss: -20dB @ 7.92GHz
- Time Delay: 27.7 psec
- Loop Inductance: 1.38nH
- Capacitance: 0.56 pF

DE4-029FF45-01A0



Material

- Top Plunger: SK4, Au plated
- Barrel: PhBz, Au plated
- Spring: SWP, Au plated
- Bottom Plunger: BeCu, Au plated

Mechanical Spec.

- Recommended Travel: 0.70mm
- Full Travel: 1.10mm
- Spring Force: 30g±20% @ 0.70mm
- Operating Temp.: -15°C ~ 125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

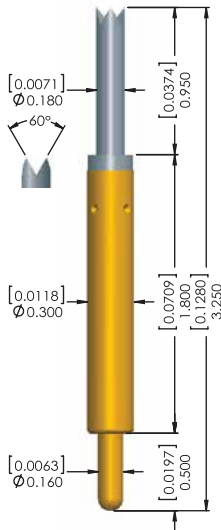
- Current Rating: 1A continuous
- Contact Resistance: <75mΩ(AVG)
- Characteristic Impedance: 44.38Ω
- Insertion Loss: -1dB > 20GHz
- Return Loss: -20dB @ 3.77GHz
- Time Delay: 28.84 psec
- Loop Inductance: 1.28 nH
- Capacitance: 0.65 pF

- Pitch 0.2
- Pitch 0.3
- Pitch 0.4
- Pitch 0.5
- Pitch 0.6
- Pitch 0.65
- Pitch 0.8
- Pitch 1.0
- Pitch 1.27

Probe Specifications

Unit:mm; []:in

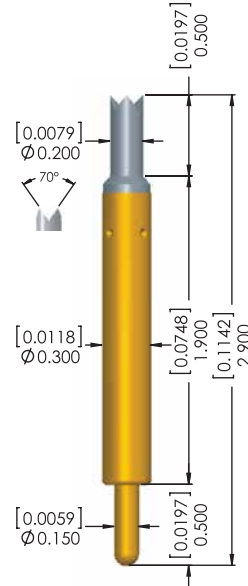
PE3-030DF17-03A0



Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 BeCu, Au plated

Mechanical Spec.
 Recommended Travel
 0.35mm
 Full Travel
 0.45mm
 Spring Force
 27g±20%@0.35mm
 Operating Temp.
 -15°C~125°C

PE3-030DF18-01A0



Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 BeCu, Au plated

Mechanical Spec.
 Recommended Travel
 0.40mm
 Full Travel
 0.50mm
 Spring Force
 35g±20%@0.40mm
 Operating Temp.
 -15°C~125°C

Electrical Spec. **GS**

Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 48.19 Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@8.59GHz
 Time Delay 14.94 psec
 Loop Inductance 0.72 nH
 Capacitance 0.31 pF

Electrical Spec. **GS**

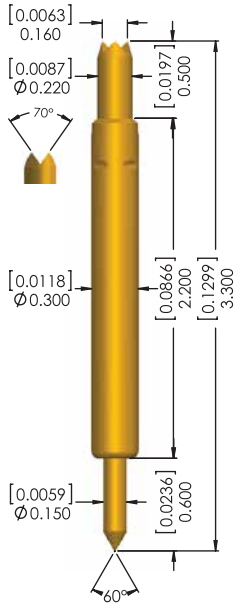
Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 42.36Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@6.47GHz
 Time Delay 14.4 psec
 Loop Inductance 0.61 nH
 Capacitance 0.34 pF

Probe Specifications

Unit:mm; []in

DE3-030BF21-03F0



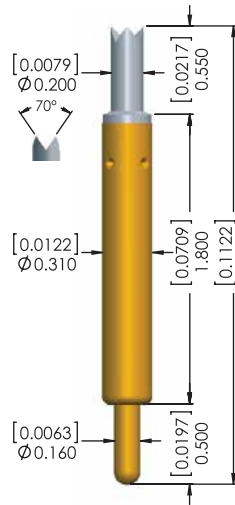
Material

- Top Plunger: BeCu, Au plated
- Barrel: PhBz, Au plated
- Spring: SWP, Au plated
- Bottom Plunger: BeCu, Au plated

Mechanical Spec.

- Recommended Travel: 0.40mm
- Full Travel: 0.55mm
- Spring Force: 30g±20%@0.40mm
- Operating Temp.: -15°C~125°C

PE3-031DF17-03F0



Material

- Top Plunger: Pd alloy
- Barrel: PhBz, Au plated
- Spring: SWP, Au plated
- Bottom Plunger: BeCu, Au plated

Mechanical Spec.

- Recommended Travel: 0.35mm
- Full Travel: 0.45mm
- Spring Force: 35g±20%@0.35mm
- Operating Temp.: -15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000



- Current Rating: 1A continuous
- Contact Resistance: <75mΩ(AVG)
- Characteristic Impedance: 42Ω
- Insertion Loss: -1dB>20GHz
- Return Loss: -20dB@7.15GHz
- Time Delay: 16.4psec
- Loop Inductance: 0.69nH
- Capacitance: 0.39pF

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

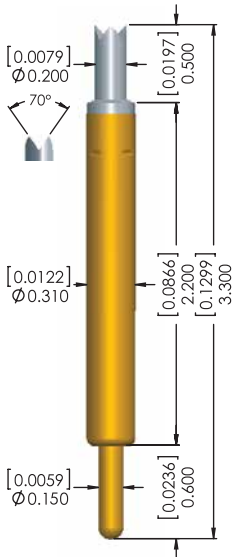


- Current Rating: 1A continuous
- Contact Resistance: <75mΩ(AVG)
- Characteristic Impedance: 39.9Ω
- Insertion Loss: -1dB>20GHz
- Return Loss: -20dB@4.5GHz
- Time Delay: 14.7psec
- Loop Inductance: 0.59nH
- Capacitance: 0.37pF

Probe Specifications

Unit:mm; []:in

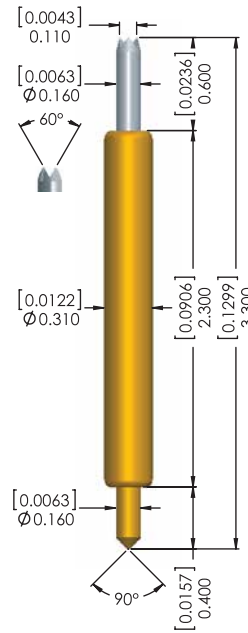
PE3-031DF21-03F0



Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.35mm
 Full Travel
 0.60mm
 Spring Force
 35g±20%@0.35mm
 Operating Temp.
 -15°C~125°C

PE1-031EF23-02F0



Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.40mm
 Full Travel
 0.65mm
 Spring Force
 30g±20%@0.40mm
 Operating Temp.
 -15°C~125°C

Electrical Spec. **G S G**
 Pitch: 0.4mm Socket Material: Peek 1000
 Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 42.67Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@5.08GHz
 Time Delay 16.64psec
 Loop Inductance 0.71nH
 Capacitance 0.39pF

Electrical Spec. **G S G**
 Pitch: 0.4mm Socket Material: Peek 1000
 Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 40.14Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@4.15GHz
 Time Delay 14.45psec
 Loop Inductance 0.58nH
 Capacitance 0.36pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

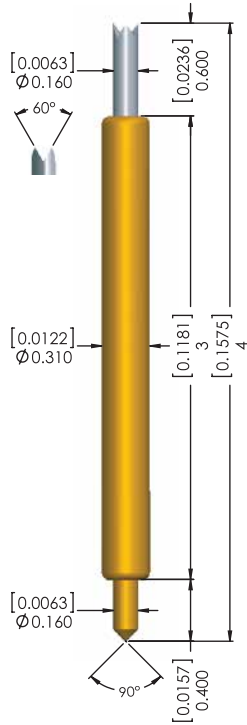
Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []in

PE1-031EF30-02F0



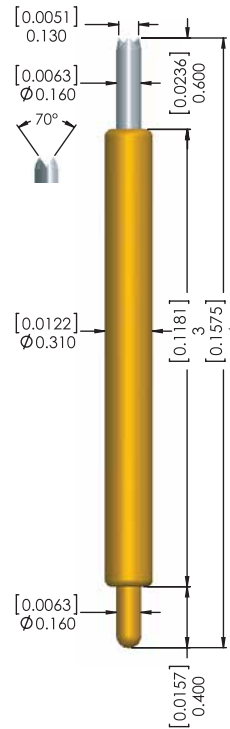
Material

Top Plunger
Pd alloy
Barrel
PhBz , Au plated
Spring
SWP , Au plated
Bottom Plunger
BeCu , Au plated

Mechanical Spec.

Recommended Travel
0.60mm
Full Travel
0.80mm
Spring Force
31g±20%@0.60mm
Operating Temp.
-15°C~125°C

PE1-031DF30-01F0



Material

Top Plunger
Pd alloy
Barrel
PhBz , Au plated
Spring
SWP , Au plated
Bottom Plunger
BeCu , Au plated

Mechanical Spec.

Recommended Travel
0.60mm
Full Travel
0.80mm
Spring Force
31g±20%@0.60mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000



Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 39.53Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@3.63GHz
Time Delay 18.97 psec
Loop Inductance 0.75nH
Capacitance 0.48pF

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000



Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 40 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@3.9GHz
Time Delay 19.7 psec
Loop Inductance 0.8 nH
Capacitance 0.49 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

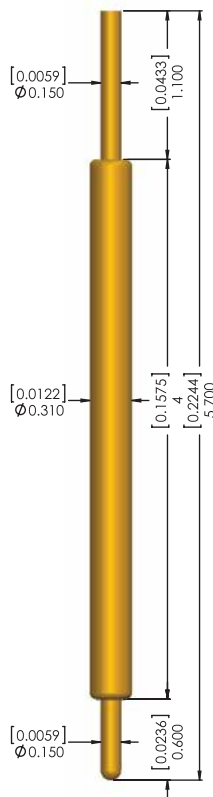
Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []in

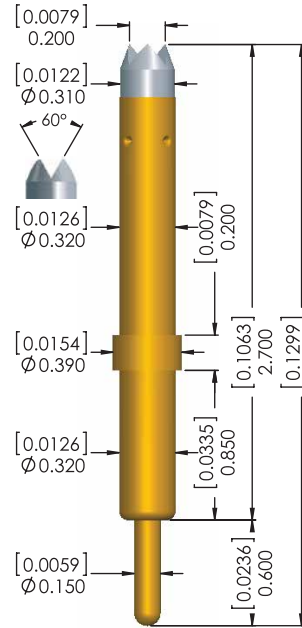
DE1-031DG40-01A0



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.65mm
 Full Travel
 1.10mm
 Spring Force
 37g±20%@0.65mm
 Operating Temp.
 -15°C~125°C

PE4-032DF24-03F0



Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.40mm
 Full Travel
 0.60mm
 Spring Force
 30g±20%@0.40mm
 Operating Temp.
 -15°C~125°C

Electrical Spec. **G S G**

Pitch: 0.4mm Socket Material: Peek 1000
 Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 42.8Ω
 Insertion Loss -1dB@17.68GHz
 Return Loss -20dB@4.05 GHz
 Time Delay 27.97 psec
 Loop Inductance 1.2 nH
 Capacitance 0.65 pF

Electrical Spec. **G S G**

Pitch: 0.5mm Socket Material: Peek 1000
 Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 43.3 Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@5.44GHz
 Time Delay 18.2 psec
 Loop Inductance 0.79 nH
 Capacitance 0.42 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

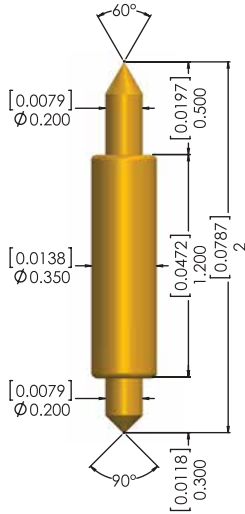
Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []in

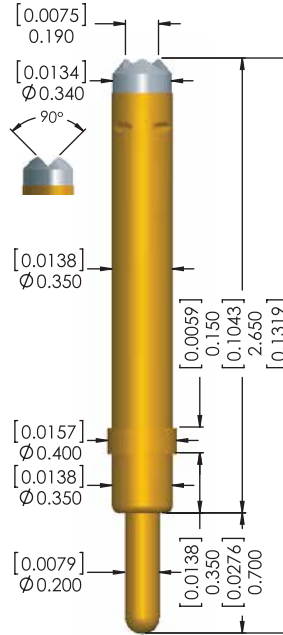
DE1-035BE12-01A0



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.30mm
 Full Travel
 0.40mm
 Spring Force
 18g±20%@0.30mm
 Operating Temp.
 -15°C~125°C

PE4-035DF24-01F0



Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz , Au plated
 Spring
 SUS , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.45mm
 Full Travel
 0.70mm
 Spring Force
 32g±20%@0.45mm
 Operating Temp.
 -55°C~150°C

Electrical Spec. **G S G**

Pitch: 0.5mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 34.74Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@4.08GHz
 Time Delay 10.07 psec
 Loop Inductance 0.35nH
 Capacitance 0.29pF

Electrical Spec. **G S G**

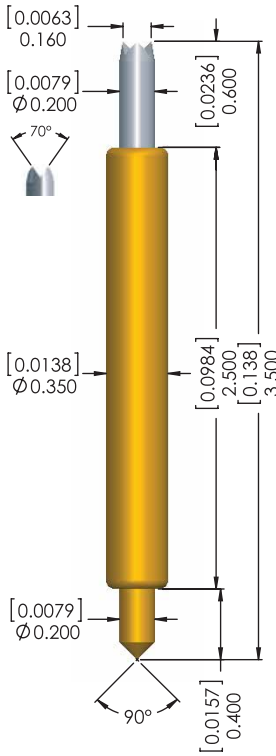
Pitch: 0.5mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 39.8 Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@3.94 GHz
 Time Delay 17.5 psec
 Loop Inductance 0.70 nH
 Capacitance 0.44 pF

Probe Specifications

Unit:mm; []:in

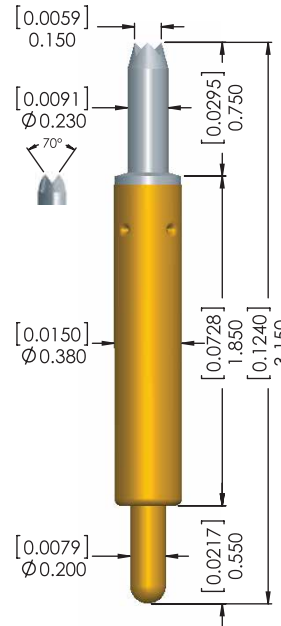
PE1-035EF25-01F0



Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.60mm
 Full Travel
 0.80mm
 Spring Force
 32g±20%@0.60mm
 Operating Temp.
 -15°C~125°C

PE3-038DF17-03F0



Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.38mm
 Full Travel
 0.55mm
 Spring Force
 38g±20%@0.38mm
 Operating Temp.
 -15°C~125°C

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 44Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@ 8.48GHz
 Time Delay 18.5psec
 Loop Inductance 0.82nH
 Capacitance 0.42pF

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 45.08Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@5.69GHz
 Time Delay 13.97 psec
 Loop Inductance 0.63 nH
 Capacitance 0.31 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []in

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

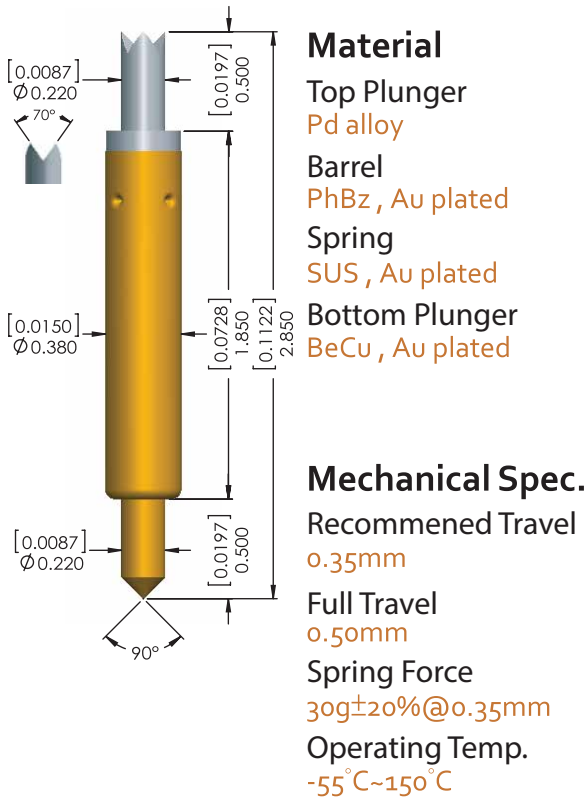
Pitch 0.65

Pitch 0.8

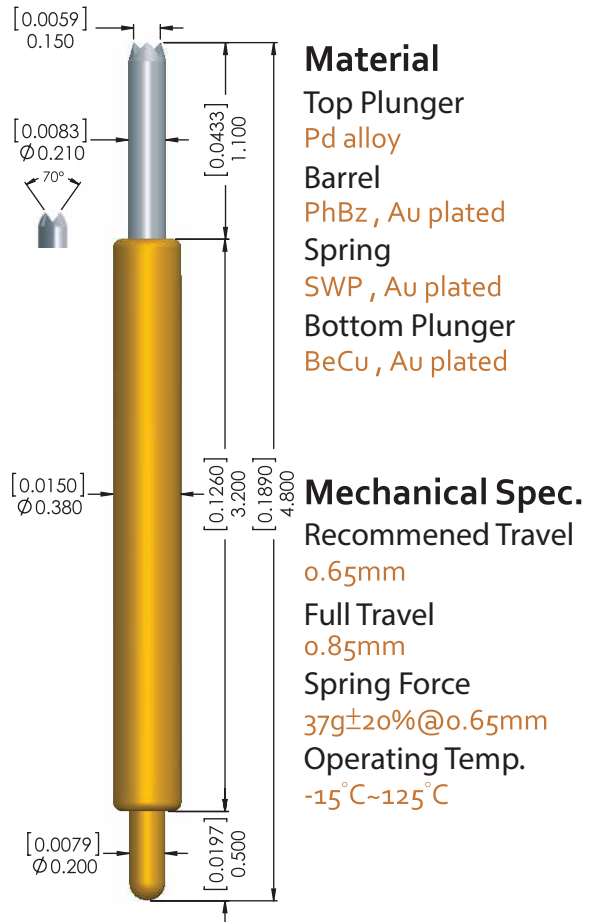
Pitch 1.0

Pitch 1.27

PE3-038EF17-04A0



PE1-038DF32-02F0



Electrical Spec. **G S G**

Pitch: 0.5mm Socket Material: Peek 1000

- Current Rating 1A continuous
- Contact Resistance <75mΩ(AVG)
- Characteristic Impedance 39.8 Ω
- Insertion Loss -1dB>20GHz
- Return Loss -20dB@4.5GHz
- Time Delay 15.5 psec
- Loop Inductance 0.62 nH
- Capacitance 0.39 pF

Electrical Spec. **G S G**

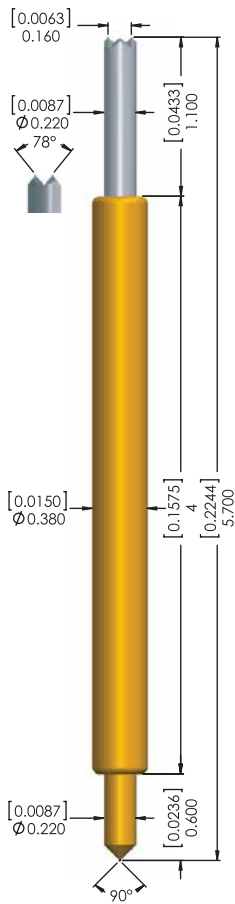
Pitch: 0.5mm Socket Material: Peek 1000

- Current Rating 1A continuous
- Contact Resistance <175mΩ(AVG)
- Characteristic Impedance 39.5 Ω
- Insertion Loss -1dB>20GHz
- Return Loss -20dB@3 GHz
- Time Delay 25.2 psec
- Loop Inductance 1 nH
- Capacitance 0.64 pF

Probe Specifications

Unit:mm; []:in

PE1-038EP40-01A0



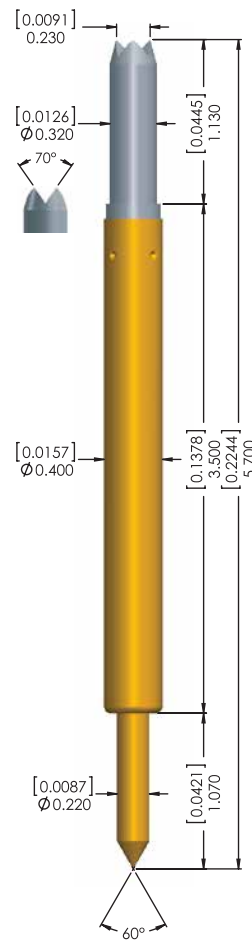
Material

Top Plunger
Pd alloy
Barrel
PhBz, Au plated
Spring
SUS, Au plated
Bottom Plunger
BeCu, Au plated

Mechanical Spec.

Recommended Travel
0.65mm
Full Travel
1.10mm
Spring Force
40g±20%@0.65mm
Operating Temp.
-55°C~150°C

PE3-040BF34-01A0



Material

Top Plunger
Pd alloy
Barrel
PhBz, Au plated
Spring
SWP, Au plated
Bottom Plunger
BeCu, Au plated

Mechanical Spec.

Recommended Travel
0.70mm
Full Travel
1.00mm
Spring Force
30g±20%@0.70mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000



Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 42 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@3.82GHz
Time Delay 29.9 psec
Loop Inductance 1.26 nH
Capacitance 0.71pF

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000



Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 38.29 Ω
Insertion Loss 1dB>20GHz
Return Loss -20dB@2.16GHz
Time Delay 27.95 psec
Loop Inductance 1.07 nH
Capacitance 0.73 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []in

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

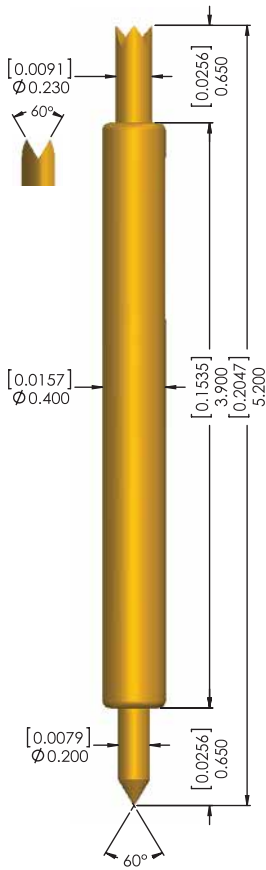
Pitch 0.65

Pitch 0.8

Pitch 1.0

Pitch 1.27

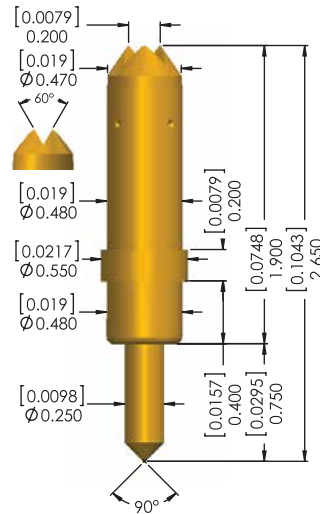
DE1-040BF39-030



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.65mm
 Full Travel
 1.30mm
 Spring Force
 25g±20%@0.65mm
 Operating Temp.
 -15°C~125°C

DE4-048EF17-01F0



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 Brass , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.50mm
 Full Travel
 0.60mm
 Spring Force
 27.5g±20%@0.50mm
 Operating Temp.
 -15°C~125°C

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 36.58Ω
 Insertion Loss -1dB@15.1GHz
 Return Loss -20dB@1.99GHz
 Time Delay 25.97psec
 Loop Inductance 0.95nH
 Capacitance 0.71pF

Electrical Spec.

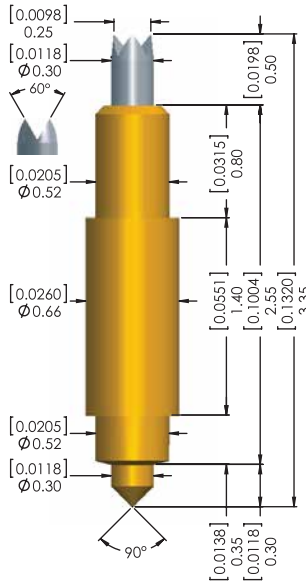
Pitch: 0.65mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 36.5Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@3.54GHz
 Time Delay 14.2psec
 Loop Inductance 0.52nH
 Capacitance 0.39pF

Probe Specifications

Unit:mm; []:in

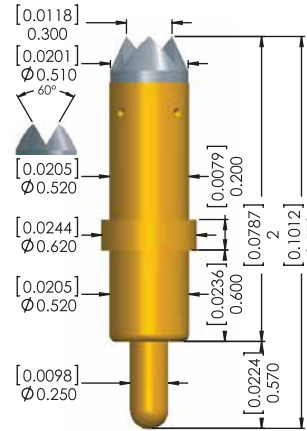
PE2-050EF25-01F0



Material
 Top Plunger Pd alloy
 Barrel PhBz , Au plated
 Spring SUS , Au plated
 Bottom Plunger BeCu , Au plated

Mechanical Spec.
 Recommended Travel 0.45mm
 Full Travel 0.60mm
 Spring Force 30g±20%@0.45mm
 Operating Temp. -55°C~150°C

PE4-052DF17-01A0



Material
 Top Plunger Pd alloy
 Barrel PhBz , Au plated
 Spring SWP , Au plated
 Bottom Plunger BeCu , Au plated

Mechanical Spec.
 Recommended Travel 0.40mm
 Full Travel 0.60mm
 Spring Force 35g±20%@0.40mm
 Operating Temp. -15°C~125°C

Electrical Spec.

Pitch: 0.8mm Socket Material: Peek 1000



Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 34.8Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@2.25GHz
 Time Delay 19.8psec
 Loop Inductance 0.69nH
 Capacitance 0.57pF

Electrical Spec.

Pitch: 0.8mm Socket Material: Peek 1000



Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 38.7Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@4.45GHz
 Time Delay 15.4psec
 Loop Inductance 0.6nH
 Capacitance 0.4pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

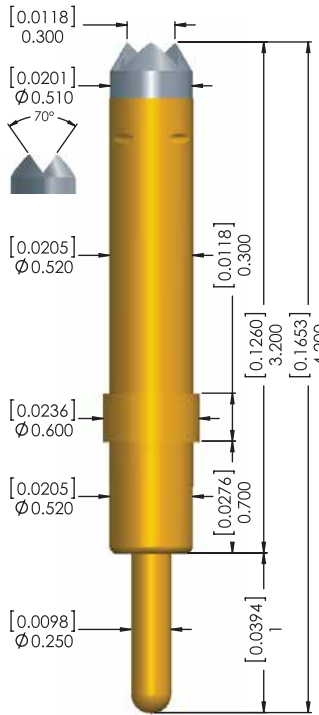
Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []in

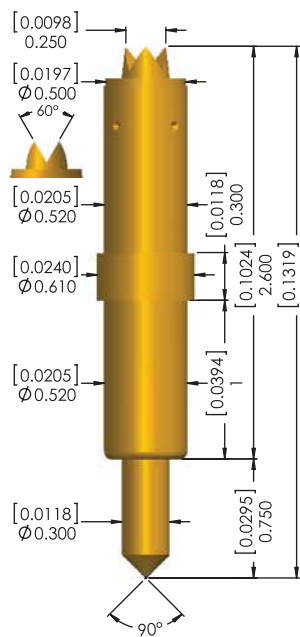
PE4-052DF28-01F0



Material
 Top Plunger
Pd alloy
 Barrel
PhBz, Au plated
 Spring
SWP, Au plated
 Bottom Plunger
BeCu, Au plated

Mechanical Spec.
 Recommended Travel
0.60mm
 Full Travel
0.80mm
 Spring Force
40g±20%@0.60mm
 Operating Temp.
-15°C~125°C

DE4-052EF23-02F0



Material
 Top Plunger
BeCu, Au plated
 Barrel
PhBz, Au plated
 Spring
SWP, Au plated
 Bottom Plunger
BeCu, Au plated

Mechanical Spec.
 Recommended Travel
0.45mm
 Full Travel
0.65mm
 Spring Force
35g±20%@0.45mm
 Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.8mm Socket Material: Peek 1000



Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 41.8Ω
 Insertion Loss -1dB@15.08GHz
 Return Loss -20dB@3.29GHz
 Time Delay 23.8psec
 Loop Inductance 1nH
 Capacitance 0.57pF

Electrical Spec.

Pitch: 0.8mm Socket Material: Peek 1000



Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 41.5Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@3.45GHz
 Time Delay 19.9 psec
 Loop Inductance 0.83 nH
 Capacitance 0.48 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

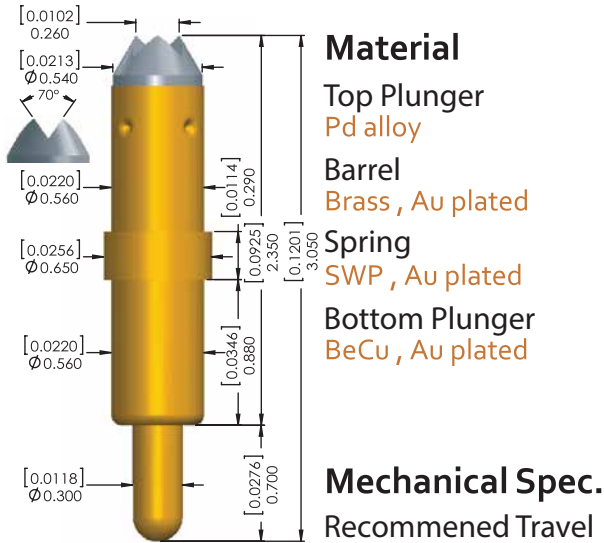
Pitch 1.0

Pitch 1.27

Probe Specifications

Unit:mm; []:in

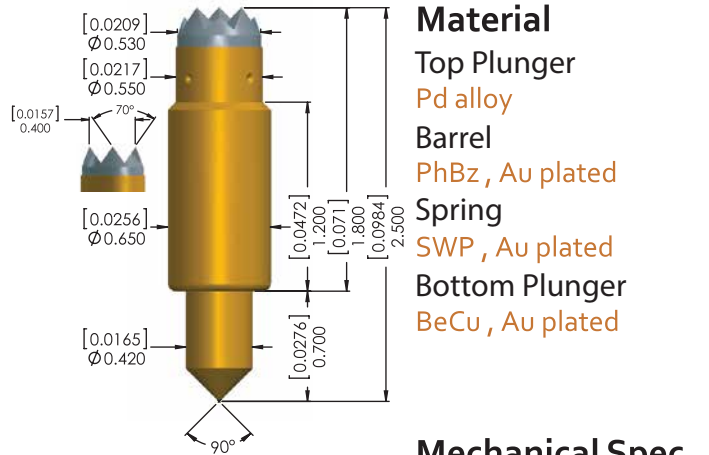
PE4-056DF20-02F0



Material
 Top Plunger
Pd alloy
 Barrel
Brass , Au plated
 Spring
SWP , Au plated
 Bottom Plunger
BeCu , Au plated

Mechanical Spec.
 Recommended Travel
0.50mm
 Full Travel
0.70mm
 Spring Force
35g±20%@0.50mm
 Operating Temp.
-15°C~125°C

PE4-065EW15-01A0



Material
 Top Plunger
Pd alloy
 Barrel
PhBz , Au plated
 Spring
SWP , Au plated
 Bottom Plunger
BeCu , Au plated

Mechanical Spec.
 Recommended Travel
0.50mm
 Full Travel
0.70mm
 Spring Force
32g±20%@0.50mm
 Operating Temp.
-15°C~125°C

Electrical Spec. **G S G**

Pitch: 0.8mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 32.68Ω
 Insertion Loss -1dB@17.48GHz
 Return Loss -20dB@1.93GHz
 Time Delay 19.28psec
 Loop Inductance 0.63nH
 Capacitance 0.59pF

Electrical Spec. **G S G**

Pitch: 0.8mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 29Ω
 Insertion Loss -1dB@10.3GHz
 Return Loss -20dB@1.79GHz
 Time Delay 16psec
 Loop Inductance 0.47nH
 Capacitance 0.55pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

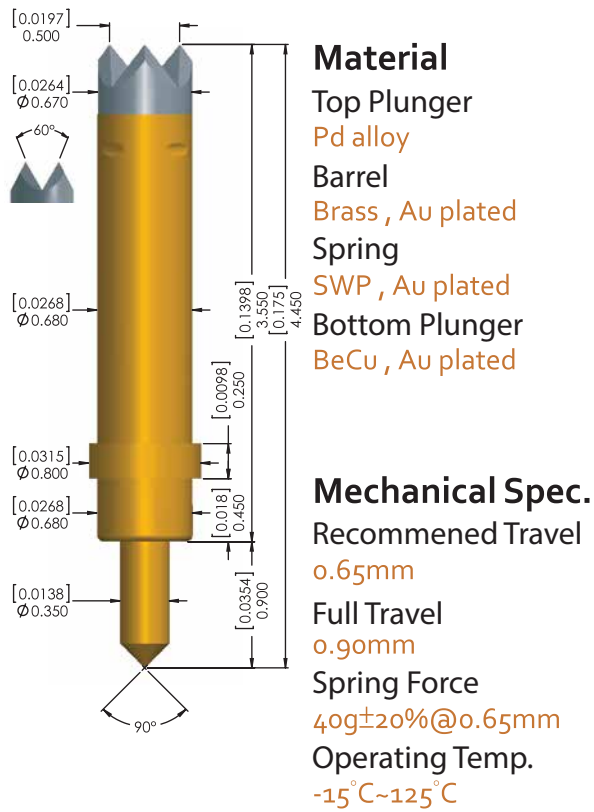
Pitch 1.0

Pitch 1.27

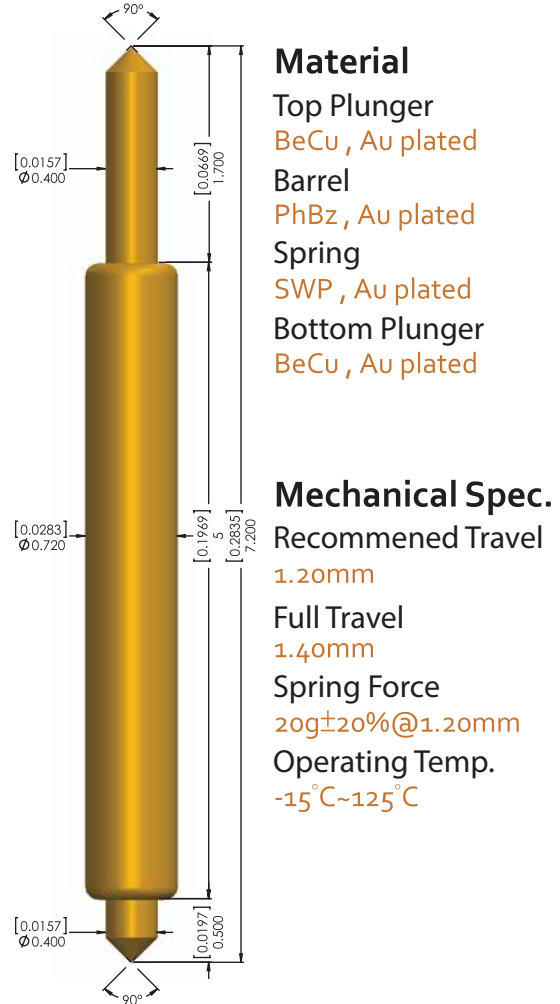
Probe Specifications

Unit:mm; []in

PE4-068EP35-01F0



DE1-072EE50-01A0



Electrical Spec. **GS**

Pitch: 1.0mm Socket Material: Peek 1000

- Current Rating 2A continuous
- Contact Resistance <math><75m\Omega(AVG)</math>
- Characteristic Impedance 37.53 Ω
- Insertion Loss -1dB@11.91GHz
- Return Loss -20dB@2.19GHz
- Time Delay 26.65 psec
- Loop Inductance 1 nH
- Capacitance 0.71 pF

Electrical Spec. **GS**

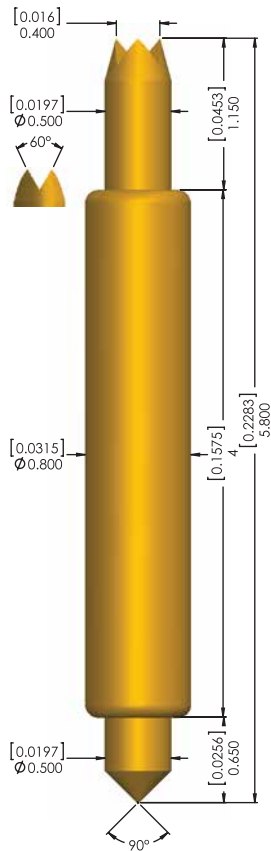
Pitch: 1.0mm Socket Material: Peek 1000

- Current Rating 1A continuous
- Contact Resistance <math><175m\Omega(AVG)</math>
- Characteristic Impedance 40.7 Ω
- Insertion Loss -1dB@13.9GHz
- Return Loss -20dB@2.37GHz
- Time Delay 38.7 psec
- Loop Inductance 1.58 nH
- Capacitance 0.95 pF

Probe Specifications

Unit:mm; []:in

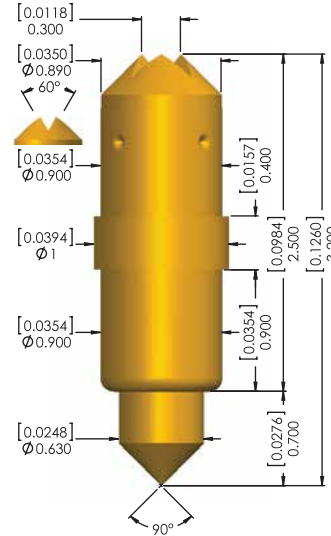
DE1-080BF40-010



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.70mm
 Full Travel
 1.05mm
 Spring Force
 30g±20%@0.70mm
 Operating Temp.
 -15°C~125°C

DE4-090EF25-02F0



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 Brass , Au plated
 Spring
 SUS , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 0.50mm
 Full Travel
 0.70mm
 Spring Force
 30g±20%@0.50mm
 Operating Temp.
 -55°C~150°C

Electrical Spec.

Pitch: 1.0mm Socket Material: Peek 1000

Current Rating 3A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 33.9Ω
 Insertion Loss -1dB@12GHz
 Return Loss -20dB@1.22GHz
 Time Delay 33.6 psec
 Loop Inductance 1.14nH
 Capacitance 0.99pF

Electrical Spec.

Pitch: 1.27mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 34.6Ω
 Insertion Loss -1dB@17.27GHz
 Return Loss -20dB@2.16GHz
 Time Delay 20.4 psec
 Loop Inductance 0.71 nH
 Capacitance 0.59 pF

Pitch 0.2

Pitch 0.3

Pitch 0.4

Pitch 0.5

Pitch 0.6

Pitch 0.65

Pitch 0.8

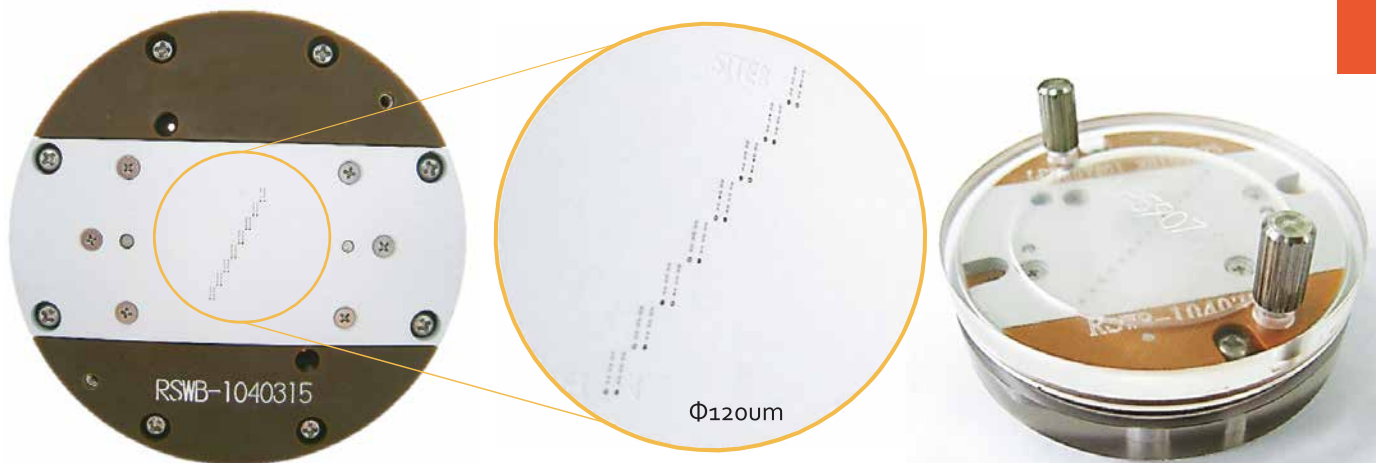
Pitch 1.0

Pitch 1.27

Wafer-Level CSP Test

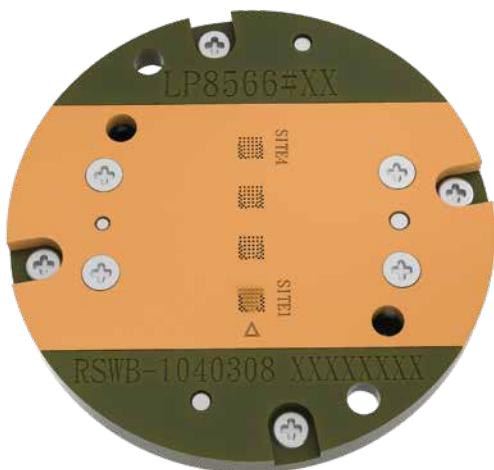
With the massive growth of WLCSP in the semiconductor market, C.C.P. has designed over 30 different kinds of probe heads to meet the demand of the market. A pogo pin design improves the durability of the probe head. Additionally, coplanarity errors induced by differently sized solder balls can be avoided by our pogo pins which have a working travel designed for 250um. We offer a wide variety of head types to meet our client's needs.

Design Concept



8 balls, pitch 0.5mm

C.C.P. employs a combination of industry-leading high precision machines from renowned manufacturers as well as custom made equipment. This allows us to drill holes smaller than $\Phi 60\mu\text{m}$.



36 balls, pitch 0.4mm

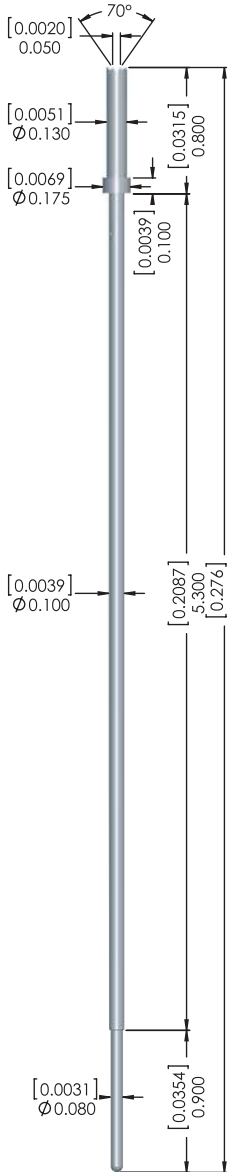
Probe Head	Specification
Min. Pitch	0.15mm
Max. Site Counts	32 sites
Top Housing Material	Photoveel® /VESPEL®SCP5000
Mounting Plate Material	Torlon® 5530
Bottom Housing Material	VESPEL®SCP5000
Life Time (Pin)	>300,000

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; []:in

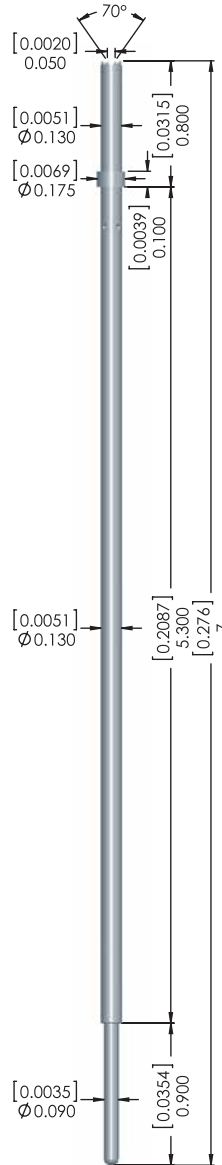
PE3-010DS53-02A0



Material
 Top Plunger
Pd alloy
 Barrel
Ni alloy
 Spring
SWP, Au plated
 Bottom Plunger
Pd alloy

Mechanical Spec.
 Recommended Travel
0.55mm
 Full Travel
0.85mm
 Spring Force
6g±20%@0.55mm
 Operating Temp.
-15°C~125°C

PE3-013DS53-01F0



Material
 Top Plunger
Pd alloy
 Barrel
Ni alloy
 Spring
SWP, Au plated
 Bottom Plunger
Pd alloy

Mechanical Spec.
 Recommended Travel
0.55mm
 Full Travel
0.85mm
 Spring Force
7g±20%@0.55mm
 Operating Temp.
-15°C~125°C

Electrical Spec. **GS**

Pitch: 0.3mm Socket Material: Peek 1000

Current Rating 0.2A continuous
 Contact Resistance <500mΩ(AVG)
 Characteristic Impedance 91.77 Ω
 Insertion Loss -1dB@3.76GHz
 Return Loss -20dB@0.72GHz
 Time Delay 34.87 psec
 Loop Inductance 3.2 nH
 Capacitance 0.38 pF

Electrical Spec. **GS**

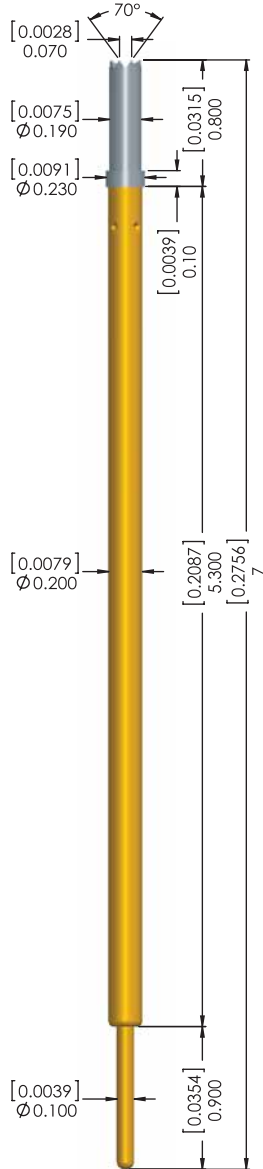
Pitch: 0.3mm Socket Material: Peek 1000

Current Rating 0.4A continuous
 Contact Resistance <500mΩ(AVG)
 Characteristic Impedance 91.3 Ω
 Insertion Loss -1dB@1.47GHz
 Return Loss -20dB@0.43GHz
 Time Delay 42.9 psec
 Loop Inductance 3.92 nH
 Capacitance 0.47pF

Probe Specifications

Unit:mm; []:in

PE3-020DS53-01A0



Material
 Top Plunger
Pd alloy
 Barrel
PhBz, Au plated
 Spring
SWP, Au plated
 Bottom Plunger
BeCu, Au plated

Mechanical Spec.
 Recommended Travel
0.55mm
 Full Travel
0.90mm
 Spring Force
25g±20%@0.55mm
 Operating Temp.
-15°C~125°C

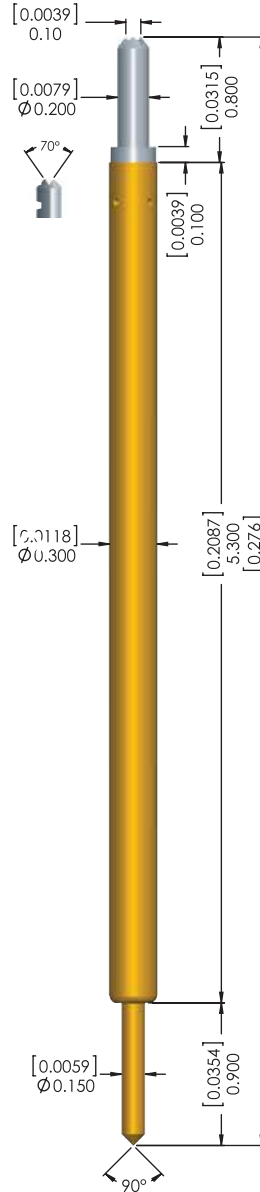
Electrical Spec.



Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 0.6A continuous
 Contact Resistance <300mΩ(AVG)
 Characteristic Impedance 66.62 Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@1.84GHz
 Time Delay 37.97 psec
 Loop Inductance 2.32 nH
 Capacitance 0.57 pF

PE3-030EF53-01A0



Material
 Top Plunger
Pd alloy
 Barrel
PhBz, Au plated
 Spring
SWP, Au plated
 Bottom Plunger
BeCu, Au plated

Mechanical Spec.
 Recommended Travel
0.55mm
 Full Travel
0.90mm
 Spring Force
25g±20%@0.55mm
 Operating Temp.
-15°C~125°C

Electrical Spec.



Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 42.3 Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@3GHz
 Time Delay 34.7 psec
 Loop Inductance 1.47nH
 Capacitance 0.82pF

High Current Solutions

C.C.P. offers a patented solution for high current pogo pin testers that can be used in a variety of applications such as EV Battery testing or other industrial applications. The design is customizable and can be fitted to your specific requirements. The design offers a much more reliable current flow and reduces the wear on the tester significantly.

Design Concept

Double-Ended High Current Probe for IC Testing



Current Path of...

Normal pin: Blue line

High current pin: Red line

Taiwan Patent No. M453149

Generally, the current runs from the bottom plunger through the barrel wall to the top plunger. Due to that, the contact resistance between the wall and plunger will increase gradually. This can cause the spring to burn and lead to a failure at higher currents. The straight plunger in the center of the high current pin allows the current to take a direct route, to the top plunger and in consequences avoids flowing through the spring during testing.

Single High Current Pin for Lithium Battery Testing



CCP developed a special design which is different from standard testing pins to improve the current carrying capabilities of our high current pin.

Coaxial High Current Pin for Lithium Battery Testing

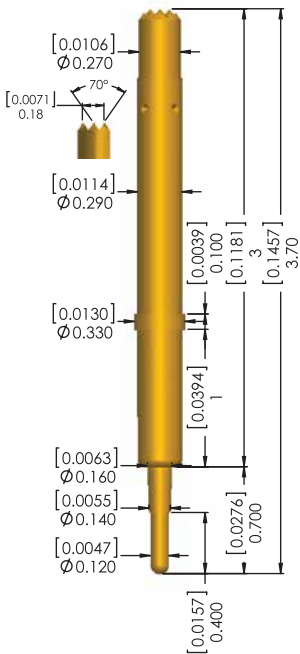


This coaxial high current pin combines a sensor pin with a current test pin in one probe design. The one-piece design of the current test pin improves the electrical resistance significantly.

Probe Specifications (IC Testing Probe)

Unit:mm; []in

DE4-029DW25-01A0



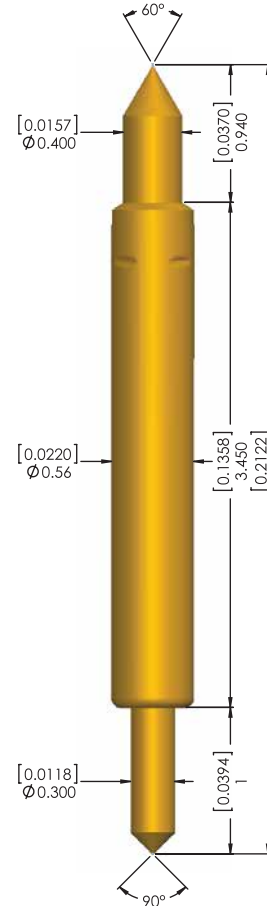
Material

Top Plunger
BeCu , Au plated
Barrel
PhBz , Au plated
Spring
SUS , Au plated
Bottom Plunger
BeCu , Au plated

Mechanical Spec.

Recommended Travel
0.40mm
Full Travel
0.70mm
Spring Force
25g±20%@0.40mm
Operating Temp.
-55°C~150°C

DE3-056BE34-01A0



Material

Top Plunger
BeCu , Au plated
Barrel
Brass , Au plated
Spring
SUS , Au plated
Bottom Plunger
BeCu , Au plated

Mechanical Spec.

Recommended Travel
0.67mm
Full Travel
0.95mm
Spring Force
35g±20%@0.67mm
Operating Temp.
-55°C~150°C

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000



Current Rating 3A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 52.7 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@10GHz
Time Delay 18.97 psec
Loop Inductance 1.00 nH
Capacitance 0.36 pF

Electrical Spec.

Pitch: 0.8mm Socket Material: Peek 1000

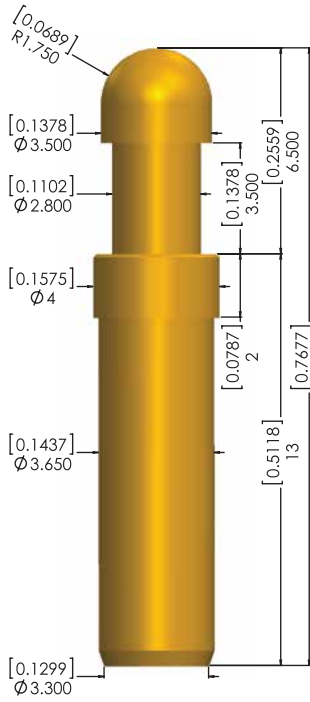


Current Rating 5A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 32.1Ω
Insertion Loss -1dB@6.27GHz
Return Loss -20dB@1.2GHz
Time Delay 29.5 psec
Loop Inductance 0.95 nH
Capacitance 0.92 pF

Probe Specifications (Battery Testing Probe)

Unit:mm; []:in

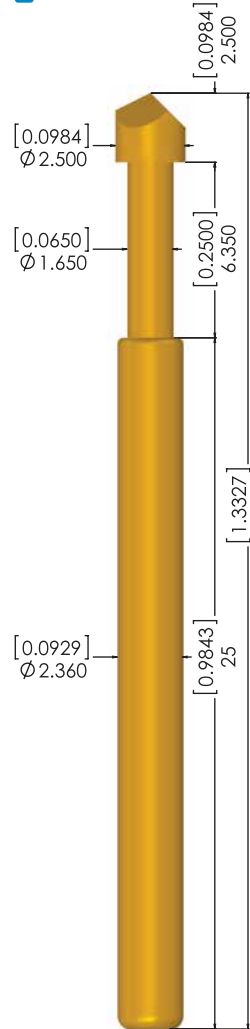
H101001M1



Material
 Plunger
 BeCu , Au plated
 Barrel
 Brass , Au plated
 Spring
 SUS , Au plated

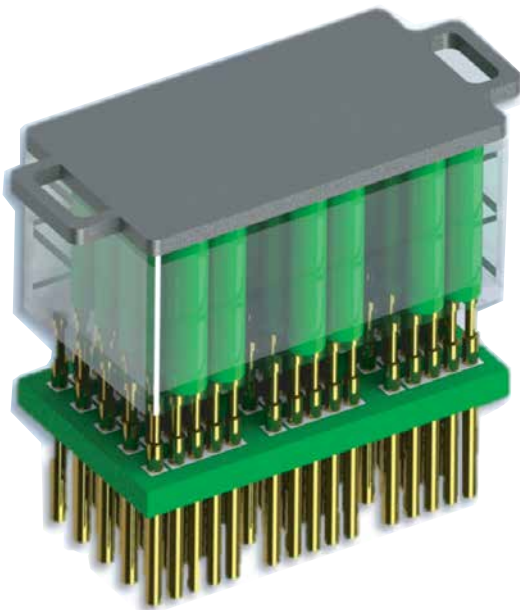
Mechanical Spec.
 Recommended Travel
 2.30mm
 Full Travel
 3.5mm
 Spring Force
 250g±20%@2.3mm
 Operating Temp.
 -55°C~150°C
Current Rating
 10 A

S-11T1-2545G



Material
 Plunger
 BeCu , Au plated
 Barrel
 Brass , Au plated
 Spring
 SUS , Au plated

Mechanical Spec.
 Recommended Travel
 4.20mm
 Full Travel
 6.35mm
 Spring Force
 450g±20%@4.20mm
 Operating Temp.
 -55°C~150°C
Current Rating
 6 A

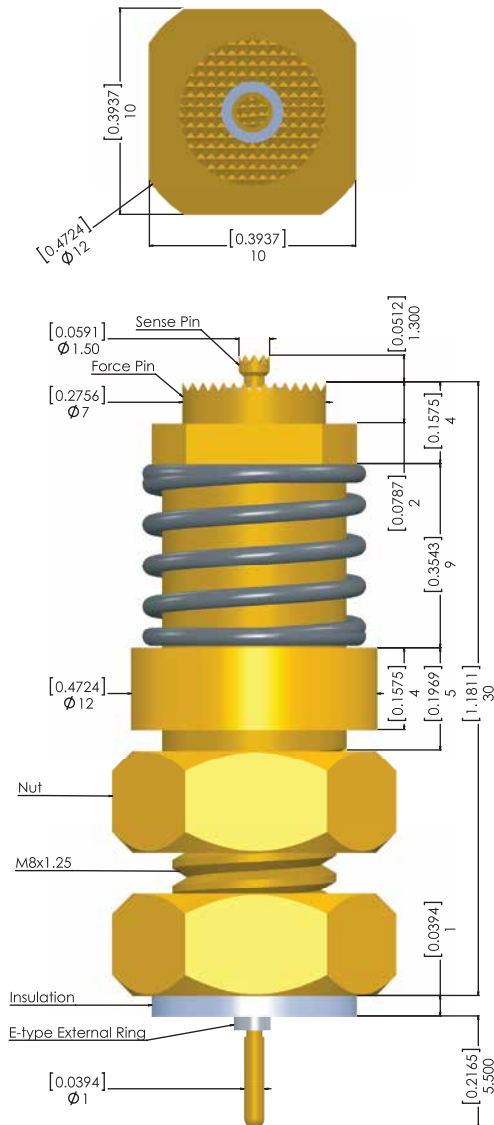


Application Demonstration

Probes touch the PCB to close the circuits and activate the lithium battery.

Probe Specifications (Battery Testing Probe)

Unit:mm; []:in



H050002M0

Material

- Sense Pin
- Plunger
BeCu , Au plated
- Barrel
PhBz , Au plated
- Spring
SUS , Au plated
- Force Pin
- Plunger
BeCu , Au plated
- Barrel
Brass , Au plated
- Spring
SUS , Au plated

Mechanical Spec.

- Sense Pin
- Recommended Travel
1.00mm
- Full Travel
1.50mm
- Spring Force
90g±20%@1.00mm
- Force Pin
- Recommended Travel
4.00mm
- Full Travel
6.00mm
- Spring Force
700g±20%@4.00mm

- Nut
BeCu , Au plated
- Insulation
Teflon

Current Rating
50 A



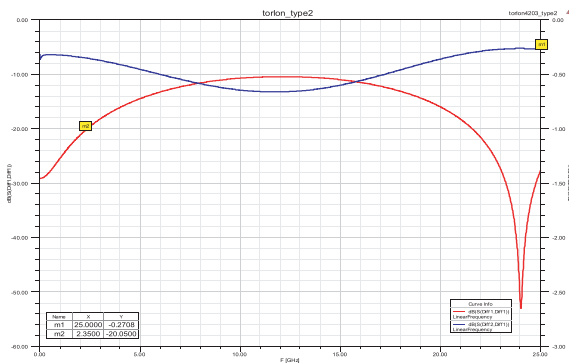
Application Demonstration

We are able to customize our probes to meet your current carrying requirements. Several patented designs and proprietary, industry leading plating technologies will offer you the right solution for your application.

High Frequency Solutions

High frequency testing is mostly used for radio-frequency channels and wide-band transaction applications. The signal pin can be customized according to the electrical characteristics and testing environments of the client. For IC testing, we usually recommend ultra-short pins, coaxial probes, and PCRs to accommodate the different types of ICs.

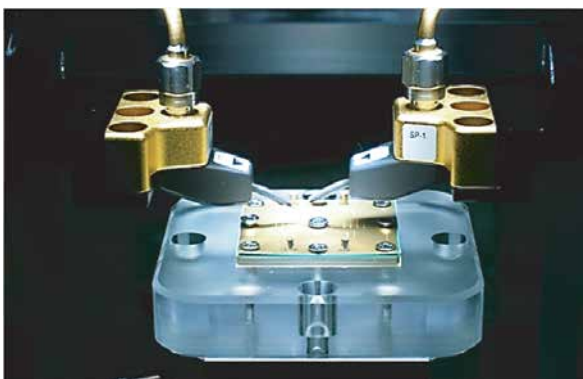
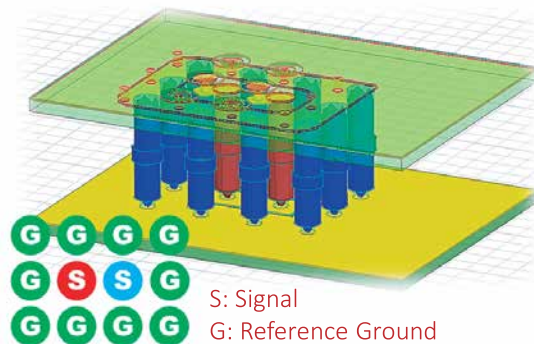
Design Concept



We have the ability to simulate 3D electromagnetic performance as well as S-parameters, inductance and impedance and by that improving SI characteristics.

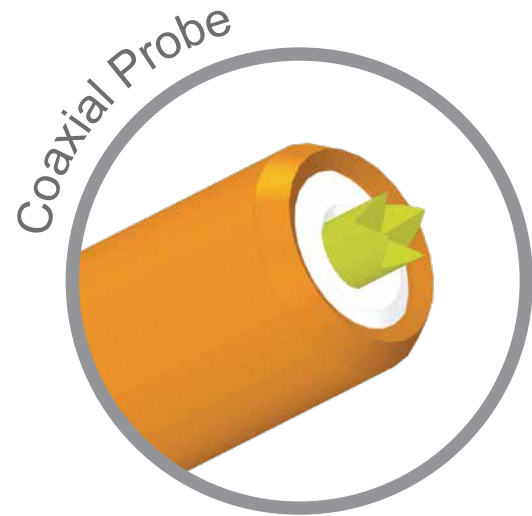
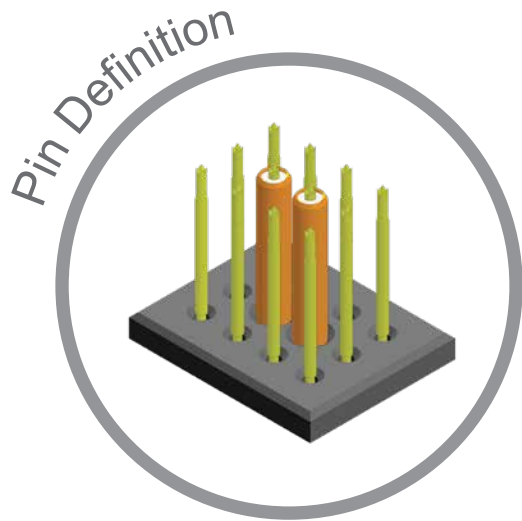
Performance Simulation

CCP utilizes HFSS to simulate the pin performance in the sockets. This allows us to choose the best pin before designing a customized sockets.



CCP has a dedicate high frequency lab that uses TDR, network analyzers and RF probe stations to measure the socket / pins actual performance and thereby verifying the simulation results. These are all indispensable equipments for developing new high-class products.

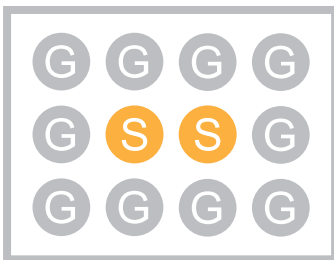
Probe Specifications (Coaxial Probe)



Pin Definition

S Signal Probe

G Ground Probe

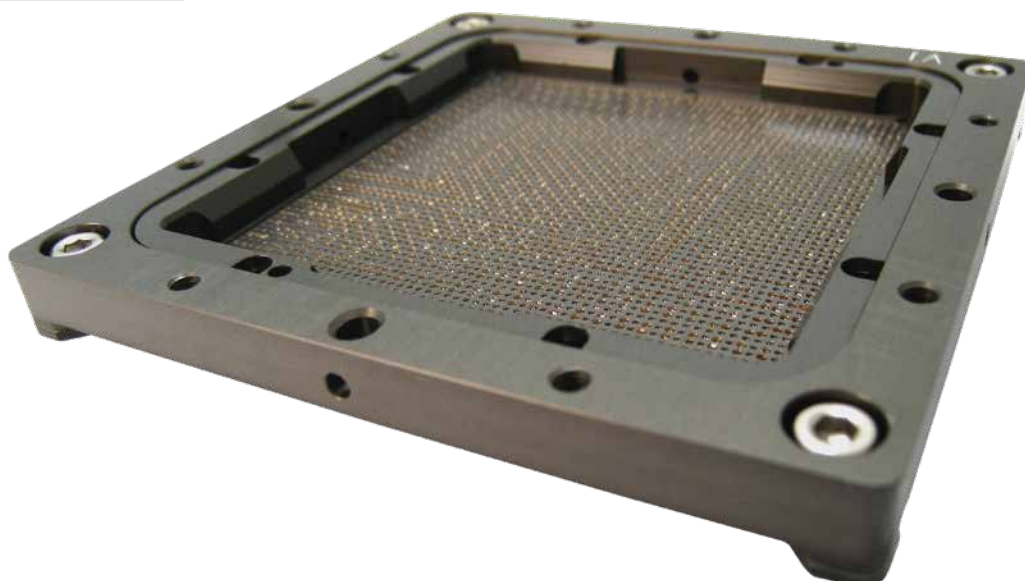


Application

Feature:
High Speed / High Frequency
DUT:
Bluetooth / GPS / LTE /
Wireless IC / 5G
Packaging:
BGA / CSP / QFN / QFP

Specification

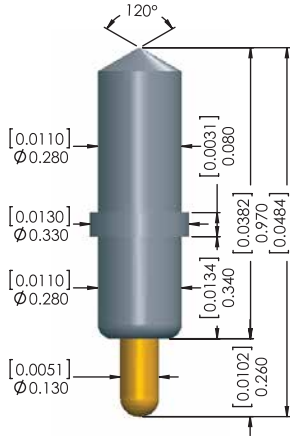
Insertion Loss:
-1dB @ >50 GHz
Return Loss:
-20dB @ >30 GHz
Impedance:
50 Ohm
Pitch:
0.65~1.00 mm



Probe Specifications (IC Test Probe)

Unit:mm; []:in

PE4-028DE09-01A0



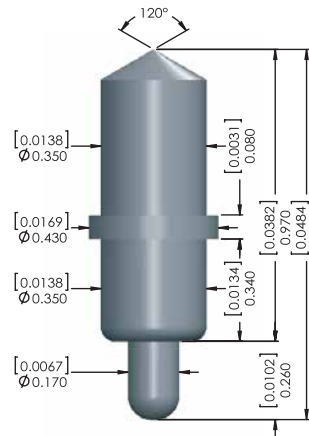
Material

- Barrel: Pd alloy
- Spring: SUS, Au plated
- Bottom Plunger: BeCu, Au plated

Mechanical Spec.

- Recommended Travel: 0.18mm
- Full Travel: 0.23mm
- Spring Force: $15g \pm 20\%$ @ 0.18mm
- Operating Temp.: $-55^{\circ}\text{C} \sim 150^{\circ}\text{C}$

PE4-035DE09-01H0



Material

- Barrel: Pd alloy
- Spring: SUS, Au plated
- Bottom Plunger: Pd alloy

Mechanical Spec.

- Recommended Travel: 0.18mm
- Full Travel: 0.23mm
- Spring Force: $14g \pm 20\%$ @ 0.18mm
- Operating Temp.: $-55^{\circ}\text{C} \sim 150^{\circ}\text{C}$

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000



- Current Rating: 1A continuous
- Contact Resistance: $<75\text{m}\Omega(\text{AVG})$
- Characteristic Impedance: $48.9\ \Omega$
- Insertion Loss: $-1\text{dB} > 20\text{GHz}$
- Return Loss: $-20\text{dB} > 20\text{GHz}$
- Time Delay: 7.3 psec
- Loop Inductance: 0.36 nH
- Capacitance: 0.15 pF

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000

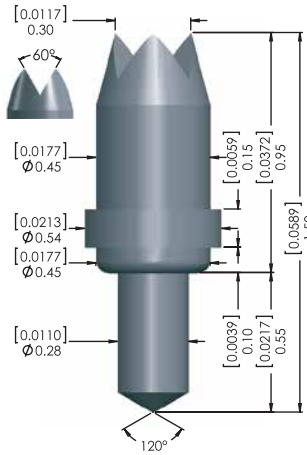


- Current Rating: 1A continuous
- Contact Resistance: $<75\text{m}\Omega(\text{AVG})$
- Characteristic Impedance: $37.4\ \Omega$
- Insertion Loss: $-1\text{dB} > 20\text{GHz}$
- Return Loss: $-20\text{dB} @ 7.62\text{GHz}$
- Time Delay: 7.48 psec
- Loop Inductance: 0.28 nH
- Capacitance: 0.2 pF

Probe Specifications (IC Test Probe)

Unit:mm; []in

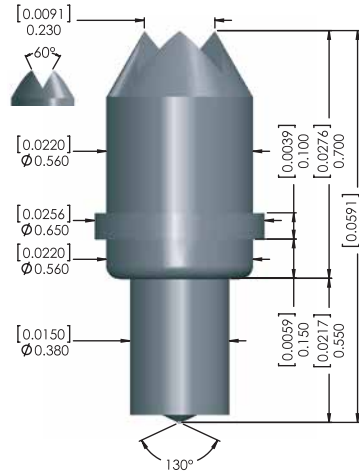
PE4-045EF09-01A0



Material
 Barrel Pd alloy
 Spring SUS, Au plated
 Bottom plunger Pd alloy

Mechanical Spec.
 Recommended travel 0.40mm
 Full travel 0.55mm
 Spring force 30g±20%@0.40mm
 Operating Temp. -55°C~150°C

PE4-056EF09-01H0



Material
 Barrel Pd alloy
 Spring SUS, Au plated
 Bottom plunger Pd alloy

Mechanical Spec.
 Recommended travel 0.40mm
 Full travel 0.55mm
 Spring force 31g±20%@0.40mm
 Operating Temp. -55°C~150°C

Electrical Spec.



Pitch: 0.65mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 35.9 Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@5.54GHz
 Time Delay 8.6 psec
 Loop Inductance 0.31 nH
 Capacitance 0.24 pF

Electrical Spec.



Pitch: 0.8mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 29.7Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@ 2.9 GHz
 Time Delay 10.4 psec
 Loop Inductance 0.31 nH
 Capacitance 0.35 pF

Kelvin Contact Solutions

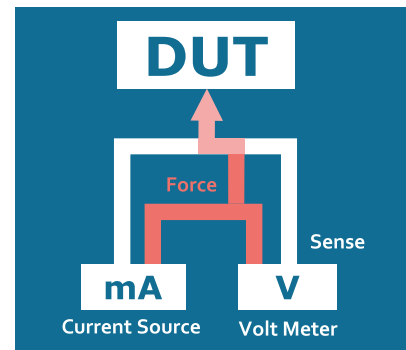
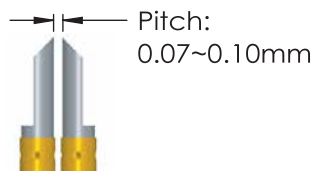
The term Kelvin Contact is derived from the English physicist Lord Kelvin who invented the Kelvin Bridge in 1861. The Kelvin Bridge is used to measure unknown electrical resistors below 1Ω and is a modification of the Wheatstone bridge. The Kelvin contact solution by C.C.P. is using one of the pins to measure the current while the other is adjusting the applied voltage. As with all our products our engineers will adjust the product according to your specific needs.

Design Concept

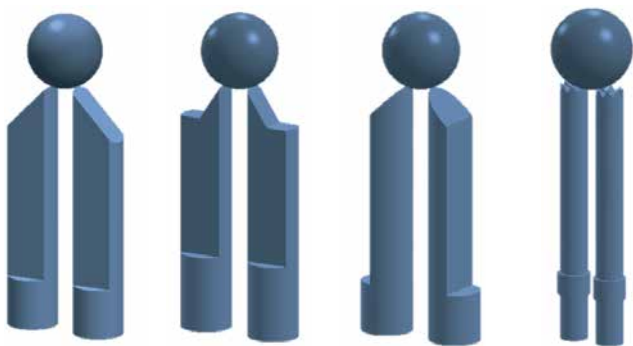
Kelvin Contact

Kelvin Contact is mostly used to test specific electrical signals, as well as be the route of current bypass when testing. C.C.P. innovated several types of kelvin pins to meet market demands.

Available in 70um~100um kelvin gap, allows precise contacts to balls / pads.



Different type of tip for various application



Blade Tip Ladder Tip Half Moon Tip Crown Tip

- Blade: Common tip type for kelvin testing
- Ladder: Similar with blade type but more accurate positioning
- Half Moon: Mostly applied in QFN, QFP
- Crown: No need to take the direction into account when manufacturing the socket and inserting the pins as each claw can prick the testing area.

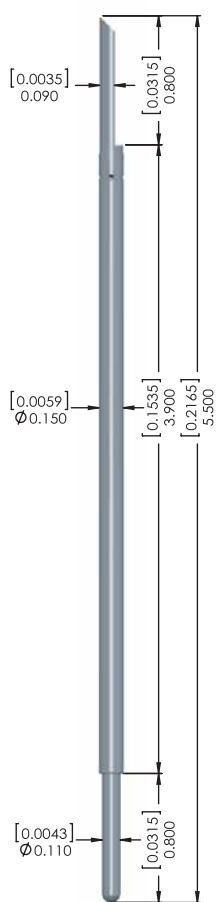
Kelvin Socket	Specification
IC Type	QFN, QFP, BGA
IC Size	2X2~20X20 mm ²
Min. Pitch	0.30mm
Life Time (Pin)	>200,000



Probe Specifications

Unit:mm; []in

PE3-015DL38-01A0

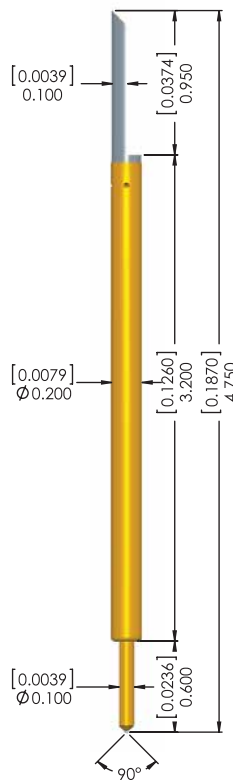


Material
 Top Plunger
 Pd alloy
 Barrel
 Ni alloy
 Spring
 SUS
 Bottom Plunger
 Pd alloy

Mechanical Spec.
 Recommended Travel
 0.40mm
 Full Travel
 0.70mm
 Spring Force
 20g±20%@0.40mm
 Operating Temp.
 -55°C~150°C

Electrical Spec.
 Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)

PE3-020EL31-01A0

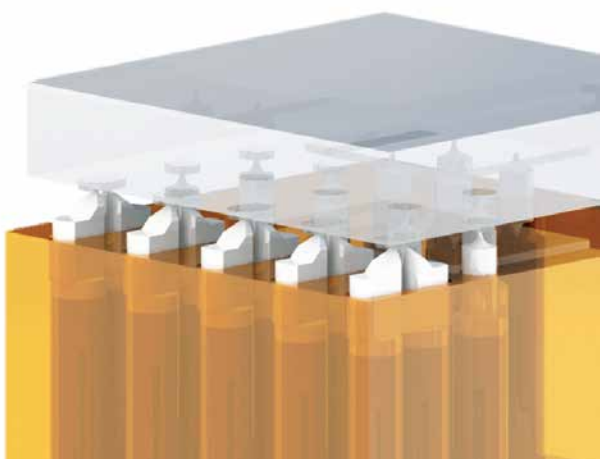


Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 BeCu, Au plated

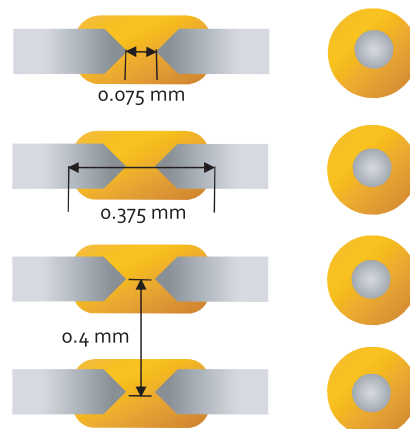
Mechanical Spec.
 Recommended Travel
 0.30mm
 Full Travel
 0.50mm
 Spring Force
 10g±20%@0.30mm
 Operating Temp.
 -15°C~125°C

Electrical Spec.
 Current Rating 2A continuous
 Contact Resistance <75mΩ(AVG)

Half Moon Kelvin Socket Example



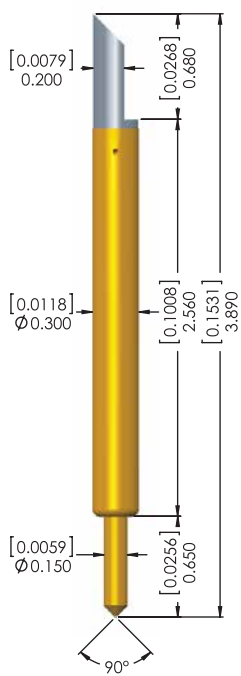
Pin Array



Probe Specifications

Unit:mm; []in

PE3-030EL25-01A0

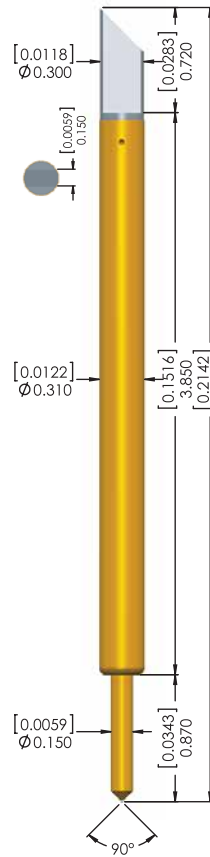


Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 BeCu, Au plated

Mechanical Spec.
 Recommended Travel
 0.45mm
 Full Travel
 0.60mm
 Spring Force
 25g±20%@0.45mm
 Operating Temp.
 -15°C~125°C

Electrical Spec.
 Current Rating 3A continuous
 Contact Resistance <75mΩ(AVG)

PE3-031EL38-01A0

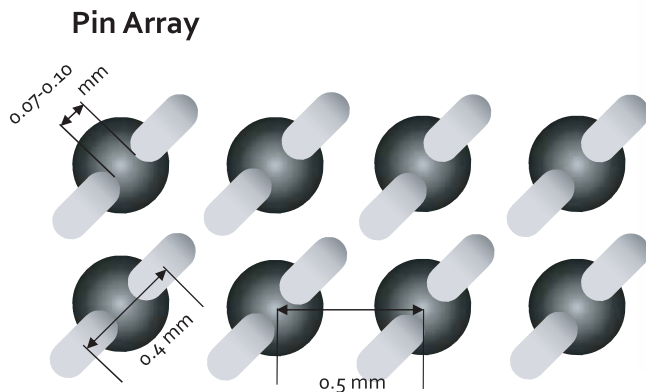


Material
 Top Plunger
 Pd alloy
 Barrel
 PhBz, Au plated
 Spring
 SUS, Au plated
 Bottom Plunger
 BeCu, Au plated

Mechanical Spec.
 Recommended Travel
 0.60mm
 Full Travel
 0.75mm
 Spring Force
 32g±20%@0.60mm
 Operating Temp.
 -55°C~150°C

Electrical Spec.
 Current Rating 3A continuous
 Contact Resistance <75mΩ(AVG)

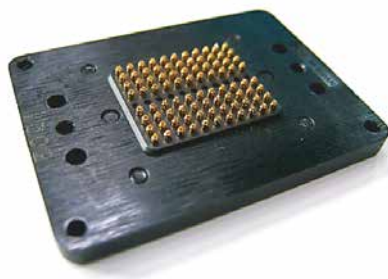
Blade Kelvin Socket Example



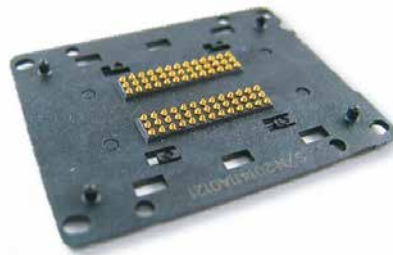
Memory Test Solutions

Memory ICs are a core component of nearly every electronic device. Memory ICs are usually categorized in volatile and non-volatile memory where volatile memory keeps its stored information when the power cycle is interrupted and volatile memory needs a constant power supply to retain its data. Most memory modules have a standardized format that can be tested with standardized test-pins. C.C.P. offers testing solutions for all common formats (DDR, Flash, eMCP, etc.) as well as customized testing solutions for your individual needs.

Design Concepts



DDR2/3 Socket



DDR3/4 Socket



eMCP Socket

Housing	Material
Injection molding	PES

Housing	Spec.
Min. Pitch	0.4mm



Manual DDR2/3 Testing Module
Single Side



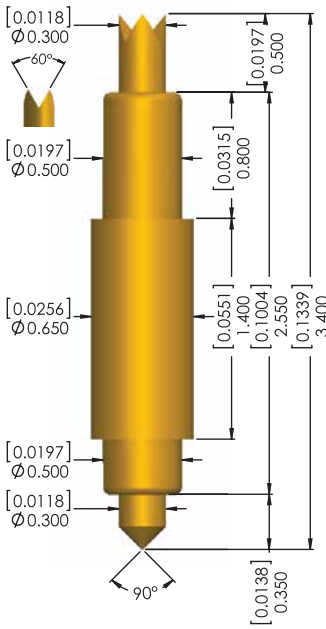
Manual DDR3 Testing Module
Double Side

Manual DDR2/3 Testing Module	Spec.
Max. Site Amount	8~16 (Single side/ Double side)
Transmission Rate (MT/s)	200MHz~1866MHz

Probe Specifications

Unit:mm; []:in

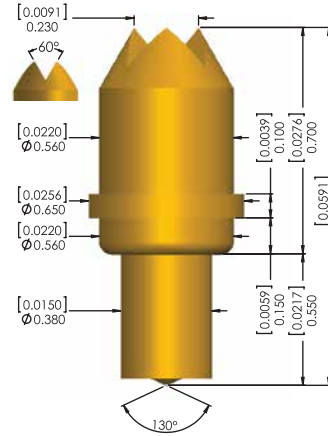
DE2-050EF25-120 DDR 2/3



Material
 Top Plunger
 BeCu, Au plated
 Barrel
 Brass, Au plated
 Spring
 SUS, Au plated
 Bottom Plunger
 BeCu, Au plated

Mechanical Spec.
 Recommended Travel
 0.40mm
 Full Travel
 0.60mm
 Spring Force
 35g±20%@0.40mm
 Operating Temp.
 -55°C~150°C

DE4-056EF09-03F0 DDR3



Material
 Top Plunger
 BeCu, Au plated
 Barrel
 SUS, Au plated
 Spring
 BeCu, Au plated
 Bottom Plunger
 BeCu, Au plated

Mechanical Spec.
 Recommended Travel
 0.40mm
 Full Travel
 0.50mm
 Spring Force
 30g±20%@0.40mm
 Operating Temp.
 -55°C~150°C

Electrical Spec. GSG

Pitch: 0.8mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 37Ω
 Insertion Loss -1dB@18.6GHz
 Return Loss -20dB@2.69GHz
 Time Delay 20.4 psec
 Loop Inductance 0.76 nH
 Capacitance 0.55 pF

Electrical Spec. GSG

Pitch: 0.8mm Socket Material: Peek 1000

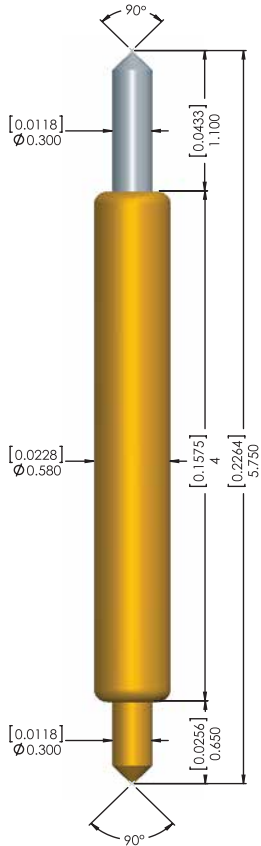
Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 36.16Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@5.11GHz
 Time Delay 9.4 psec
 Loop Inductance 0.34nH
 Capacitance 0.26pF

Probe Specifications

Unit:mm; []in

PE1-058EE40-01A0

Flash



Material

- Top Plunger: Pd alloy
- Barrel: PhBz, Au plated
- Spring: SUS, Au plated
- Bottom Plunger: BeCu, Au plated

Mechanical Spec.

- Recommended Travel: 0.80mm
- Full Travel: 1.1mm
- Spring Force: $28g \pm 20\% @ 0.80mm$
- Operating Temp.: $-55^{\circ}C \sim 150^{\circ}C$

Electrical Spec.

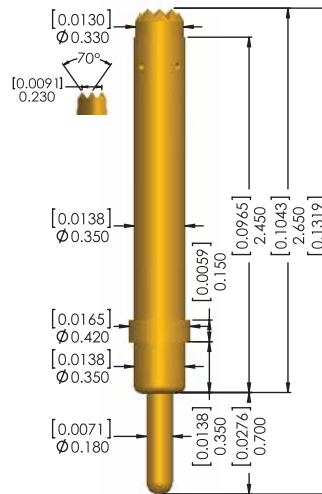
Pitch: 0.8mm Socket Material: Peek 1000



- Current Rating: 1A continuous
- Contact Resistance: $< 75m\Omega (AVG)$
- Characteristic Impedance: 41.2Ω
- Insertion Loss: -1dB > 20GHz
- Return Loss: -20dB @ 2.56GHz
- Time Delay: 32.2 psec
- Loop Inductance: 1.33nH
- Capacitance: 0.78pF

DE4-035DH24-01A0

eMCP



Material

- Top Plunger: BeCu, Au plated
- Barrel: PhBz, Au plated
- Spring: SWP, Au plated
- Bottom Plunger: BeCu, Au plated

Mechanical Spec.

- Recommended Travel: 0.50mm
- Full Travel: 0.70mm
- Spring Force: $27g \pm 20\% @ 0.50mm$
- Operating Temp.: $-15^{\circ}C \sim 125^{\circ}C$

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000



- Current Rating: 1A continuous
- Contact Resistance: $< 75m\Omega (AVG)$
- Characteristic Impedance: 40.06Ω
- Insertion Loss: -1dB > 20GHz
- Return Loss: -20dB @ 4.5GHz
- Time Delay: 17.22 psec
- Loop Inductance: 0.69 nH
- Capacitance: 0.43 pF

Burn In Test

The Burn-In test will expose the DUT (device under test) to harsh conditions: 150°C; relative humidity (RH): 85 rh; current rating: 1A continuous for 1000 hrs. In order to withstand conditions like that, C.C.P. modifies the plating material and core material. C.C.P. splits the socket into two parts: The standard part and the machining part. The standard part is manufactured by insert molding and holds the machining part which is customized according to the customers' IC design and made by CNC. The pins for the burn-in solution use a special material (WJ3) that shows an exceptional hardness and is able to withstand the demanding conditions posed by the Burn-In test.

Design Concept



Pogo Type Burn-in Socket

Burn in Socket	Specification
IC Size	<15x15 mm ²
Min. Pitch	0.3
Body Material	PES (Black)
Housing Material	Ultem2300
Operating Temperature	-55°C~180°C

C.C.P. splits the socket into a standard part and a machining part. The standard part is processed by insert molding while the machining part is manufactured by CNC according to IC's size. This shortens the development time and reduces the mold tooling cost. C.C.P. can customize the sockets according to your needs.



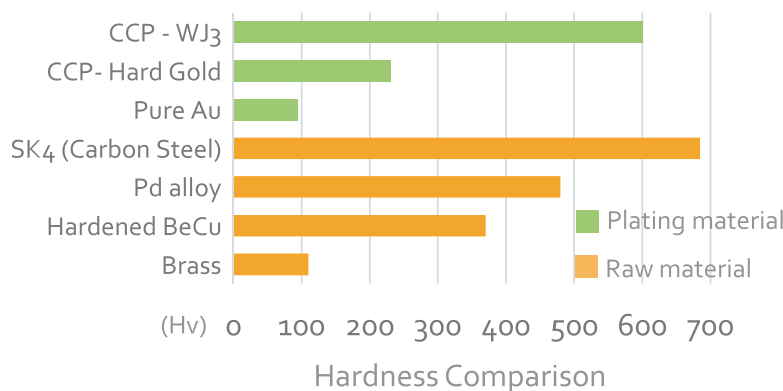
Standard Part



Customized part

Manufactured according to IC size

Plating / Raw Material

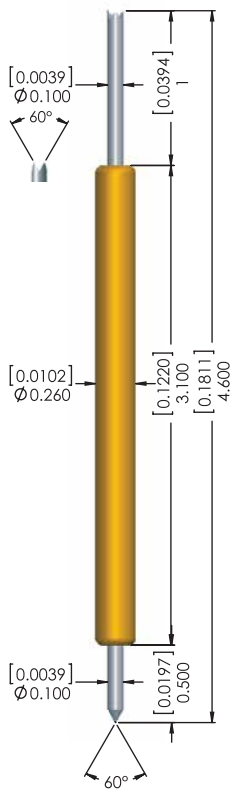


Commonly used in burn in test solution, WJ3 is a special plating material developed by C.C.P. and usually plated on the DUT side plunger. Besides high hardness, WJ3 is able to perform steadily in severe testing environments that reach 150°C for 1000 hours possibly even for 3000 hours.

Probe Specifications

Unit:mm; []:in

WE1-026EF31-01A0



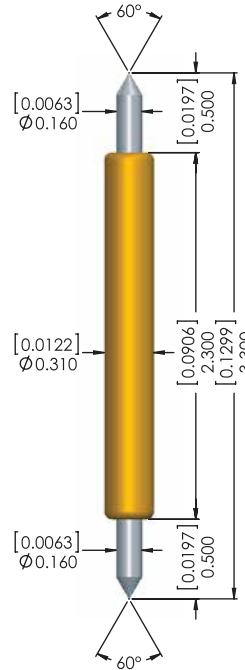
Material

- Top Plunger: BeCu, WJ₃ plated
- Barrel: PhBz, Au plated
- Spring: SUS, Au plated
- Bottom Plunger: BeCu, WJ₃ plated

Mechanical Spec.

- Recommended Travel: 0.50mm
- Full Travel: 0.80mm
- Spring Force: 20g±20%@0.50mm
- Operating Temp.: -55°C~175°C

WE1-031BB23-01A0



Material

- Top Plunger: BeCu, WJ₃ plated
- Barrel: PhBz, Au plated
- Spring: SUS, Au plated
- Bottom Plunger: BeCu, WJ₃ plated

Mechanical Spec.

- Recommended Travel: 0.50mm
- Full Travel: 0.70mm
- Spring Force: 30g±20%@0.50mm
- Operating Temp.: -55°C~175°C

Electrical Spec.



Pitch: 0.4mm Socket Material: Peek 1000

- Current Rating: 1A continuous
- Contact Resistance: <175mΩ(AVG)
- Characteristic Impedance: 57Ω
- Insertion Loss: -1dB>20GHz
- Return Loss: -20dB@8.38GHz
- Time Delay: 23.4 psec
- Loop Inductance: 1.34 nH
- Capacitance: 0.41 pF

Electrical Spec.



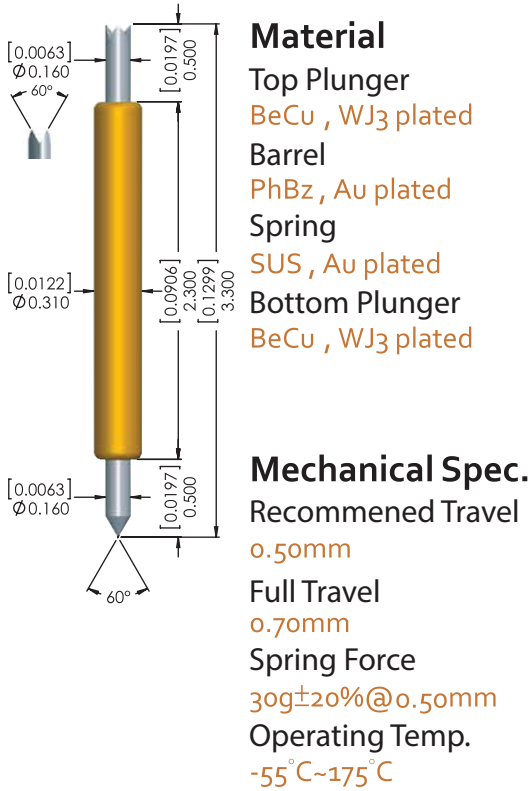
Pitch: 0.4mm Socket Material: Peek 1000

- Current Rating: 1.5A continuous
- Contact Resistance: <175mΩ(AVG)
- Characteristic Impedance: 40.8Ω
- Insertion Loss: -1dB>20GHz
- Return Loss: -20dB@5.3GHz
- Time Delay: 15.9 psec
- Loop Inductance: 0.65 nH
- Capacitance: 0.39 pF

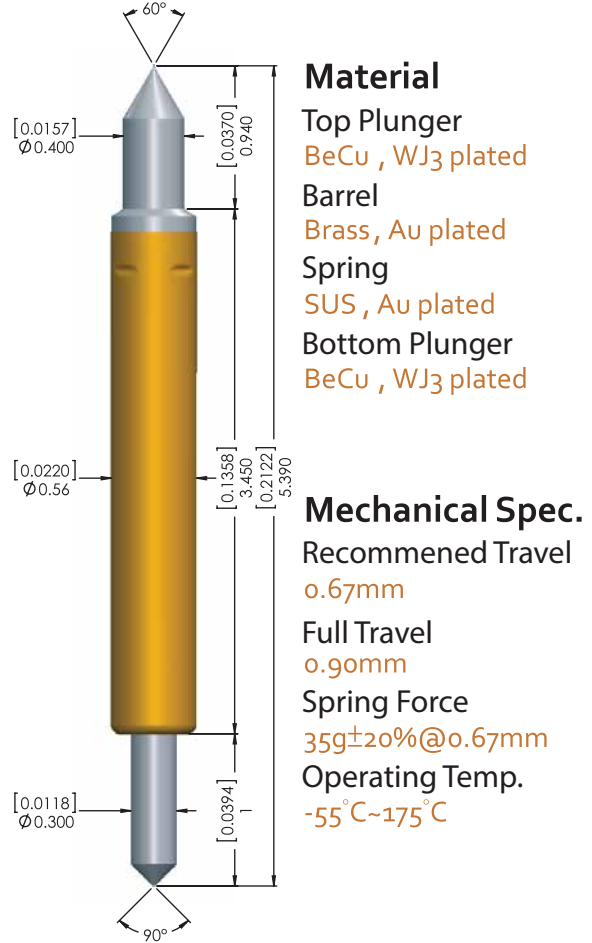
Probe Specifications

Unit:mm; []:in

WE1-031BF23-01A0



WE3-056BE34-02A0



Electrical Spec. **G S G**

Pitch: 0.4mm Socket Material: Peek 1000

- Current Rating 1.5A continuous
- Contact Resistance <175mΩ(AVG)
- Characteristic Impedance 33.72Ω
- Insertion Loss -1dB@12.51GHz
- Return Loss -20dB@2.49GHz
- Time Delay 17.2 psec
- Loop Inductance 0.58 nH
- Capacitance 0.51 pF

Electrical Spec. **G S G**

Pitch: 0.8mm Socket Material: Peek 1000

- Current Rating 5A continuous
- Contact Resistance <75mΩ(AVG)
- Characteristic Impedance 32.1Ω
- Insertion Loss -1dB@7 GHz
- Return Loss -20dB@1.19 GHz
- Time Delay 29.5 psec
- Loop Inductance 0.95nH
- Capacitance 0.92 pF

Fin Pitch Conn. / FPC Test

A board to board connection requires fine-pitch pogo sockets to achieve the required accuracy. Pogo-Pin testing solutions have a significantly increased lifetime with more than 300,000 touchdowns. The excellent connectivity reduces the coplanarity error that occurs with traditional testing pins and results in improved efficiency of the testing procedures. C.C.P. has developed different kinds of testing pins that can be customized according to the customer's needs.

Design Concept



Single-site pogo socket
Pitch: 0.4mm



Fine Pitch Connector
Device under Test



Dual-site pogo socket
with fine pitch connector (DUT)

Clip Pogo Socket

Clip pogo socket can hold the gold finger part on a PCB or an FPC. This solution is especially efficient and easy for PCB/FPC testing.



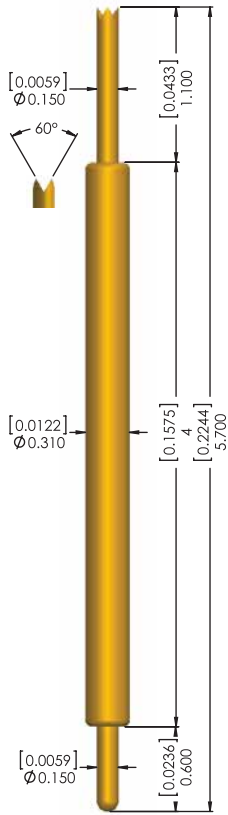
Pogo Socket Parts	Specification
Min. Pitch	0.35mm
Lid Material	Acrylic/ Aluminum
Floating Plate/ Top, Bottom Housing Material	Peek Ceramic
Mounting Plate Material	Aluminum
Life Time	30,000



Gold Finger
Device under Test

Probe Specifications

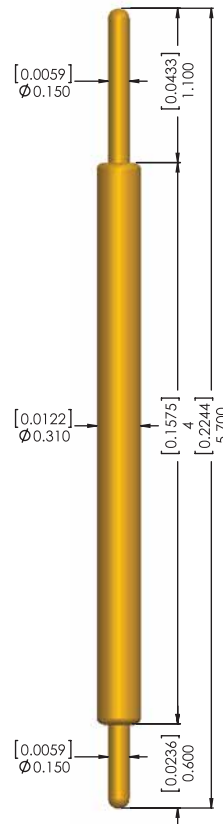
DE1-030DF40-05A0



Material
 Top Plunger
 SK4, Au plated
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 BeCu, WJ3 plated

Mechanical Spec.
 Recommended Travel
 0.50mm
 Full Travel
 1.00mm
 Spring Force
 25g±20%@0.50mm
 Operating Temp.
 -15°C~125°C

DE1-031DD40-01W1



Material
 Top Plunger
 SK4, Au plated
 Barrel
 PhBz, Au plated
 Spring
 SWP, Au plated
 Bottom Plunger
 SK4, Au plated

Mechanical Spec.
 Recommended Travel
 0.80mm
 Full Travel
 1.00mm
 Spring Force
 25g±20%@0.80mm
 Operating Temp.
 -15°C~125°C

Electrical Spec. **G S G**

Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 44.8Ω
 Insertion Loss -1dB>20GHz
 Return Loss -20dB@4.5GHz
 Time Delay 28.2 psec
 Loop Inductance 1.27nH
 Capacitance 0.63 pF

Electrical Spec. **G S G**

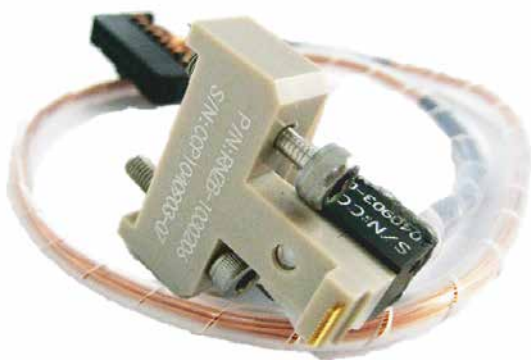
Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <175mΩ(AVG)
 Characteristic Impedance 42.54Ω
 Insertion Loss -1dB@18.82GHz
 Return Loss -20dB@3.41GHz
 Time Delay 26.8 psec
 Loop Inductance 1.14 nH
 Capacitance 0.63 pF

Panel Test

Most electronic devices use displays to interact with the user. Those displays are often fragile which requires appropriate testing solutions. Pogo pins are especially suitable for this type of application due to their customized tip, which protects the DUT from scratches.

Design Concept

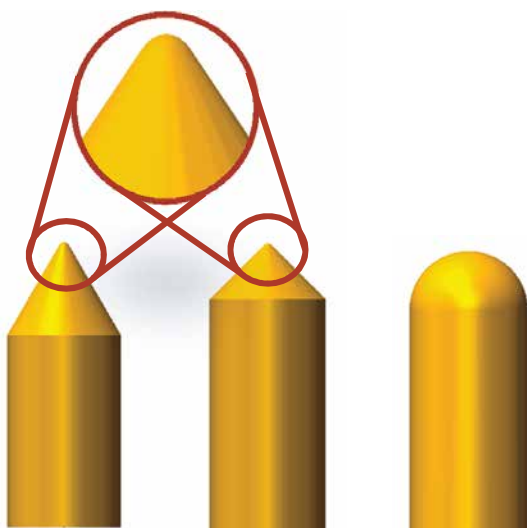


Panel Pin Housing

Panel Test Housing

The housing is installed on a test head which contacts the panel directly. To protect the panel from damage, the head is rounded which prevents scratching of the panel surface.

Panel Pin Housing	Specification
Min. Pitch	0.45 mm
Panel Size	50"~85"
Housing Material	Peek
Life Time (Pin)	>200,000



B type

E type

D type

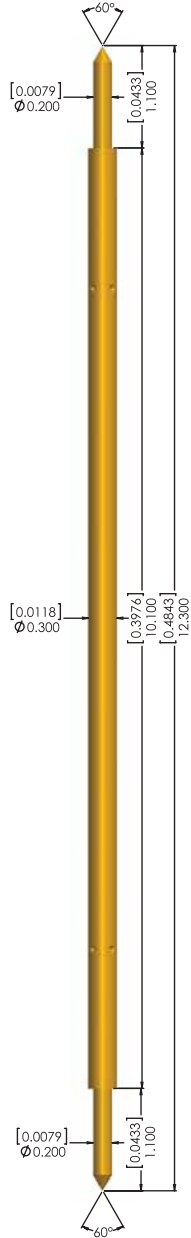
Panel Pin Head Type

A conical tip is able to puncture oxide layers and has a low chance to leave scratches on the display. We usually recommend the D type for panel tests, to eliminate the chance of scratches.

Probe Specifications

Unit:mm; []:in

DE1-030BB10-01A0



Material

- Top Plunger: Sk4, Au plated
- Barrel: PhBz, Au plated
- Spring: SWP, Au plated
- Bottom Plunger: Sk4, Au plated

Mechanical Spec.

- Recommended Travel: 1.25mm
- Full Travel: 1.90mm
- Spring Force: 20g±20%@1.25mm
- Operating Temp.: -15°C~125°C

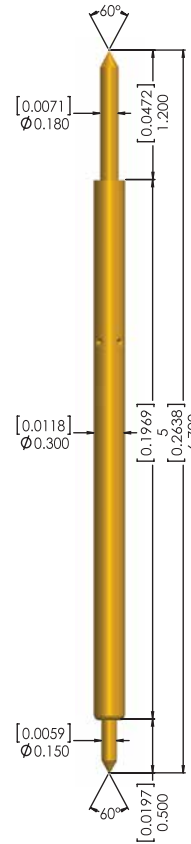
Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000



- Current Rating: 1A continuous
- Contact Resistance: <175mΩ(AVG)
- Characteristic Impedance: 67Ω
- Insertion Loss: -1dB@3.34GHz
- Return Loss: -20dB@0.87GHz
- Time Delay: 67.01 psec
- Loop Inductance: 4.49 nH
- Capacitance: 1 pF

DE1-030BB50-01A0



Material

- Top Plunger: Sk4, Au plated
- Barrel: PhBz, Au plated
- Spring: SWP, Au plated
- Bottom Plunger: BeCu, Au plated

Mechanical Spec.

- Recommended Travel: 0.65mm
- Full Travel: 1.00mm
- Spring Force: 13g±20%@0.65mm
- Operating Temp.: -15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

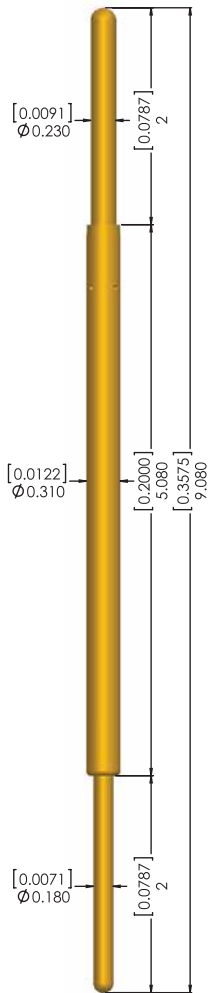


- Current Rating: 1A continuous
- Contact Resistance: <175mΩ(AVG)
- Characteristic Impedance: 45Ω
- Insertion Loss: -1dB>20GHz
- Return Loss: -20dB@3.35GHz
- Time Delay: 32.8 psec
- Loop Inductance: 1.48 nH
- Capacitance: 0.73 pF

Probe Specifications

Unit:mm; []:in

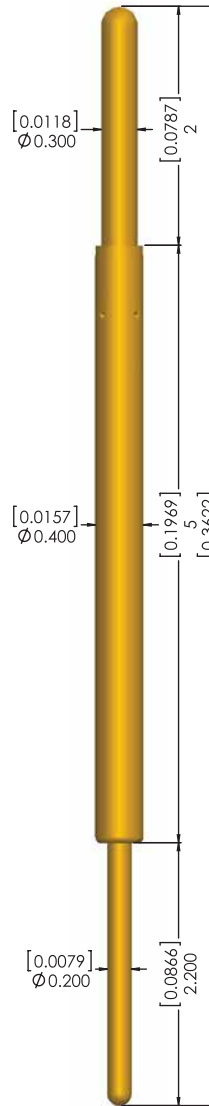
DE3-031DD50-01A0



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 1.00mm
 Full Travel
 2.00mm
 Spring Force
 20g±20%@1.00mm
 Operating Temp.
 -15°C~125°C

DE3-040DD50-01A0



Material
 Top Plunger
 BeCu , Au plated
 Barrel
 PhBz , Au plated
 Spring
 SWP , Au plated
 Bottom Plunger
 BeCu , Au plated

Mechanical Spec.
 Recommended Travel
 1.00mm
 Full Travel
 2.00mm
 Spring Force
 20g±20%@1.00mm
 Operating Temp.
 -15°C~125°C

Electrical Spec.



Pitch: 0.4mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 41.54 Ω
 Insertion Loss -1dB@14.66GHz
 Return Loss -20dB@2.03GHz
 Time Delay 42.37 psec
 Loop Inductance 1.76 nH
 Capacitance 1.02 pF

Electrical Spec.



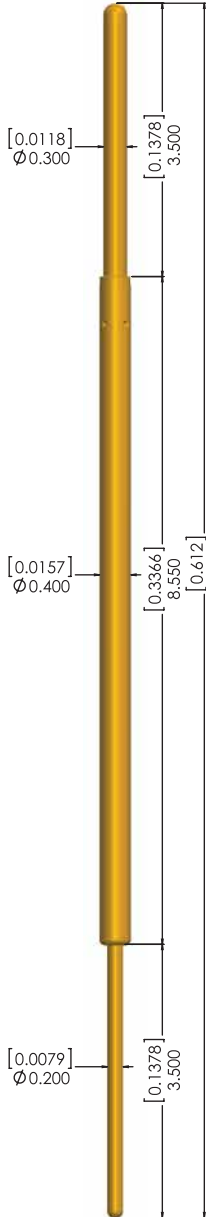
Pitch: 0.5mm Socket Material: Peek 1000

Current Rating 1A continuous
 Contact Resistance <75mΩ(AVG)
 Characteristic Impedance 42.13Ω
 Insertion Loss -1dB@10.93GHz
 Return Loss -20dB@2.05GHz
 Time Delay 46.76 psec
 Loop Inductance 1.97 nH
 Capacitance 1.11 pF

Probe Specifications

Unit:mm; []:in

DE3-040DD85-01A0



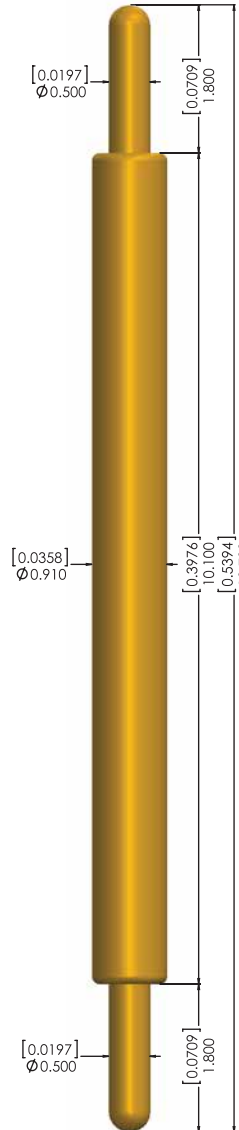
Material

Top Plunger
BeCu , Au plated
Barrel
PhBz , Au plated
Spring
SUS, Au plated
Bottom Plunger
BeCu , Au plated

Mechanical Spec.

Recommended Travel
2.50mm
Full Travel
3.00mm
Spring Force
20g±20%@2.50mm
Operating Temp.
-55°C~150°C

DE1-091DD10-01A0



Material

Top Plunger
BeCu , Au plated
Barrel
PhBz , Au plated
Spring
SWP , Au plated
Bottom Plunger
BeCu , Au plated

Mechanical Spec.

Recommended Travel
2.00mm
Full Travel
3.00mm
Spring Force
20g±20%@2.00mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000



Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 40 Ω
Insertion Loss -1dB@6.08GHz
Return Loss -20dB@1.06GHz
Time Delay 74.8 psec
Loop Inductance 3 nH
Capacitance 1.87 pF

Electrical Spec.

Pitch: 1.0mm Socket Material: Peek 1000



Current Rating 2A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 24.2Ω
Insertion Loss -1dB@1.52GHz
Return Loss -20dB@0.28GHz
Time Delay 72.6 psec
Loop Inductance 1.76 nH
Capacitance 3 pF

ATE Connection

Pogo towers and adapters are usually used to connect a motherboard and a daughterboard in automatic testing equipment. C.C.P. has developed ATE connecting solutions for several years. Testing equipment such as J750 and V93000 are well-established solutions.

Design Concept

A pogo tower can be customized according to you requirements such as frequency or pitch.



Pogo tower (line)



Pogo tower (ring)



Pogo Tower (Cable)

Pogo tower (line)	Specification
Housing Material	FR4
Pitch	2.54
Insertion Loss	-3dB@2.4GHz

Pogo tower (ring)	Specification
Housing Material	FR4
Pitch	2.54
Insertion Loss	-3dB@2.4GHz

Pogo cable	Specification
Housing Material	FR4
Pitch	2.54
Insertion Loss	-3dB@2.4GHz
Impedance	50Ω

Cleaning Tools



Nylon Brush
SSP-SSN-906500

Wire Diameter: $\Phi 0.1\text{mm}$

Size: 2.1 mm*4.0 mm*L145 mm



Steel Brush
SSP-SSS-SST6SS

Wire Diameter: $\Phi 0.1\text{mm}$

Size: 3.5mm*6.5 mm*L130 mm



Steel Brush
SSP-SSS-SST2SS

Wire Diameter: $\Phi 0.1\text{mm}$

Size: 2.0 mm*4.5mm*L93 mm

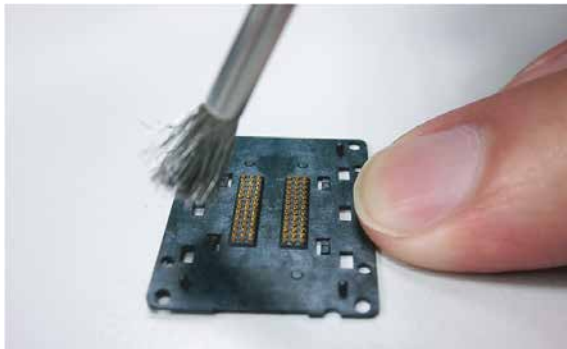


Tungsten Steel Brush
SSP-BR-TS002-094

Wire Diameter: $\Phi 0.02\text{mm}$

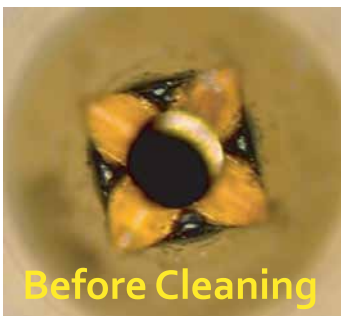
Size: 1.7 mm*4.2 mm*L94 mm

Probe Cleaning



Particles can interfere with the test result and decrease the yield rate. Probe cleaning can avoid this situation from happening. We can provide various cleaning tooling for persistent solder splashes or particles on the probe tip.

Slightly brush the probe tip to remove particle or tin on it.



No Damage

Probe damage level:

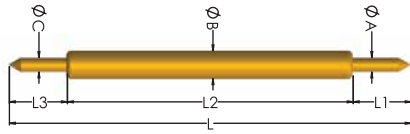
Nylon brush

< Nano Tungsten steel brush

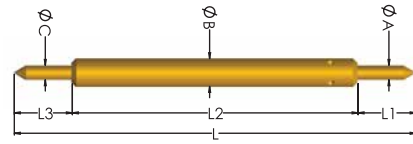
< Steel Brush (smaller brush size)

< Steel Brush (bigger brush size)

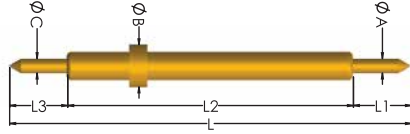
Type 1
Double Active



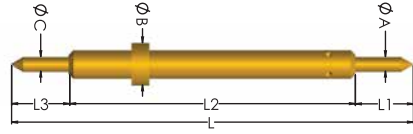
Type 3
Single Active



Type 2
Double Active
W/ Ring



Type 4
Single Active
W/ Ring

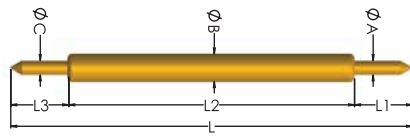


Unit: mm

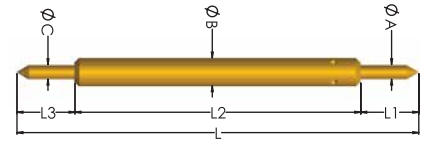
Pitch	P/N	Type	Total Length (L)	Barrel /Ring OD (φB)	Plunger A Type/ Length (L1)	Plunger A OD (φA)	Plunger C Type/ Length (L3)	Plunger C OD (φC)	Working Stroke	Spring Force ±20% @Working Stroke	Detail Spec (page)
0.2	PE1-010EE20-01Ao	1	3.00	0.10	Conical/ 0.40	0.045	Conical/ 0.40	0.045	0.35	7g	6
	PE3-010DS53-02Ao	3	7.00	0.175	Serrated/ 0.70	0.13	Round/ 0.90	0.08	0.55	6g	28
	PE3-013DS53-01Fo	3	7.00	0.175	Serrated/ 0.70	0.13	Round/ 0.90	0.09	0.55	6g	28
0.3	PE3-015DL38-01Ao	3	5.50	0.15	Blade/ 0.80	0.14	Round/ 0.80	0.11	0.40	20g	39
	PE3-020EL31-01Ao	3	4.75	0.20	Blade/ 0.95	0.19	Conical/ 0.60	0.10	0.30	10g	39
	DE1-020BE40-01Ao	1	5.70	0.20	Conical/ 1.10	0.10	Conical/ 0.60	0.10	0.60	12g	6
	PE3-020DS53-01Ao	3	7.00	0.23	Serrated/ 0.70	0.19	Round/ 0.90	0.10	0.55	25g	29
	DE1-020BE74-01Ao	1	9.70	0.20	Conical/ 1.50	0.12	Conical/ 0.80	0.12	0.80	6g	7
	DE1-025BB10-02Ao	1	12.20	0.25	Conical/ 1.10	0.13	Conical/ 1.10	0.13	1.45	30g	7
0.4	PE4-025EF24-01Ao	4	3.30	0.32	Crown/ 0.25	0.24	Conical/ 1.10	0.11	0.40	23g	8
	PE3-026DF17-01Fo	3	3.00	0.26	Crown/ 0.70	0.15	Conical/ 0.50	0.12	0.35	20g	8
	PE3-026BD18-01Ao	3	2.87	0.18	Conical/ 0.52	0.18	Round/ 0.50	0.13	0.30	24g	9
	PE3-026DF27-01Fo	3	4.25	0.26	Crown/ 0.60	0.15	Round/ 0.85	0.13	0.40	22g	9
	WE1-026EF31-01Ao	1	4.60	0.26	Crown/ 1.00	0.10	Conical/ 0.50	0.10	0.50	20g	45
	DE1-026BE40-01Ao	1	5.70	0.26	Conical/ 1.10	0.10	Conical/ 0.60	0.10	0.65	14g	10
	DE1-026DF40-02Ao	1	5.70	0.26	Crown/ 1.10	0.11	Round/ 0.60	0.11	0.65	18g	10
	DE1-028EF40-05Ao	1	5.70	0.28	Crown/ 0.15	0.15	Conical/ 0.60	0.15	0.65	28g	11
	PE4-028DE09-01Ao	4	1.23	0.33	-	-	Round/ 0.26	0.13	0.18	15g	36
	DE4-029DW25-01Ao	4	3.70	0.33	Serrated/ 0.45	0.27	Round/ 0.70	0.12	0.40	25g	31
	DE4-029FF45-01Ao	4	6.50	0.34	Crown/ 0.75	0.22	Crown/ 1.10	0.15	0.70	30g	11
	DE1-030BB10-01Ao	1	12.30	0.30	Conical/ 1.10	0.20	Conical/ 1.10	0.20	1.25	20g	50
	DE1-030BB50-01Ao	1	6.7	0.30	Conical/ 1.20	0.18	Conical/ 0.50	0.15	0.65	13g	50
	PE3-030DF17-03Ao	3	3.25	0.30	Crown/ 0.95	0.18	Round/ 0.50	0.16	0.35	27g	12
	PE3-030DF18-01Ao	3	2.90	0.30	Crown/ 0.60	0.20	Round/ 0.50	0.15	0.40	35g	12
	DE3-030BF21-03Fo	3	3.30	0.30	Crown/ 0.60	0.22	Conical/ 0.60	0.15	0.40	30g	13
	PE3-030EL25-01Ao	3	3.89	0.30	Blade/ 0.68	0.20	Conical/ 0.65	0.15	0.45	25g	40
	DE1-030DF40-05Ao	3	5.70	0.30	Crown/ 1.10	0.15	Round/ 0.60	0.15	0.50	25g	48
	PE3-030EF53-01Ao	3	7.00	0.30	Crown/ 0.70	0.20	Conical/ 0.90	0.15	0.55	25g	29
	PE3-031DF17-03Fo	3	2.85	0.31	Crown/ 0.55	0.20	Round/ 0.50	0.16	0.35	35g	13
	PE3-031DF21-03Fo	3	3.30	0.31	Crown/ 0.50	0.20	Round/ 0.60	0.16	0.40	35g	14
	WE1-031BB23-01Ao	1	3.30	0.31	Conical/ 0.50	0.16	Conical/ 0.50	0.16	0.50	25g	45
	WE1-031BF23-01Ao	1	3.30	0.31	Crown/ 0.50	0.16	Conical/ 0.50	0.16	0.50	30g	46
	PE1-031EF23-02Fo	1	3.30	0.31	Crown/ 0.60	0.16	Conical/ 0.40	0.16	0.40	30g	14
	PE1-031EF30-02Fo	1	4.00	0.31	Crown/ 0.60	0.16	Conical/ 0.40	0.16	0.60	31g	15
	PE1-031DF30-01Fo	1	4.00	0.31	Crown/ 0.60	0.16	Round/ 0.40	0.16	0.60	31g	15
	DE1-031DG40-01Ao	1	5.70	0.31	Cup/ 0.15	0.15	Round/ 0.15	0.15	0.65	37g	16
	PE3-031EL38-01Ao	3	5.44	0.31	Blade/ 0.77	0.30	Conical/ 0.87	0.15	0.60	35g	40
	DE1-031DD40-01W1	3	5.70	0.31	Round/ 1.10	0.15	Round/ 0.60	0.15	0.80	25g	48
	DE3-031DD50-01Ao	3	9.08	0.31	Round/ 2.00	0.23	Round/ 2.00	0.18	1.00	20g	51
	PE4-032DF24-03Fo	4	3.30	0.39	Crown/ 0.30	0.31	Round/ 0.60	0.15	0.40	30g	16

Except the specifications in the table, we provide customization according to your specifications.

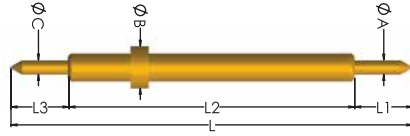
Type 1
Double Active



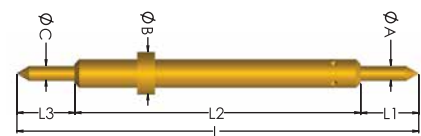
Type 3
Single Active



Type 2
Double Active
W/ Ring



Type 4
Single Active
W/ Ring

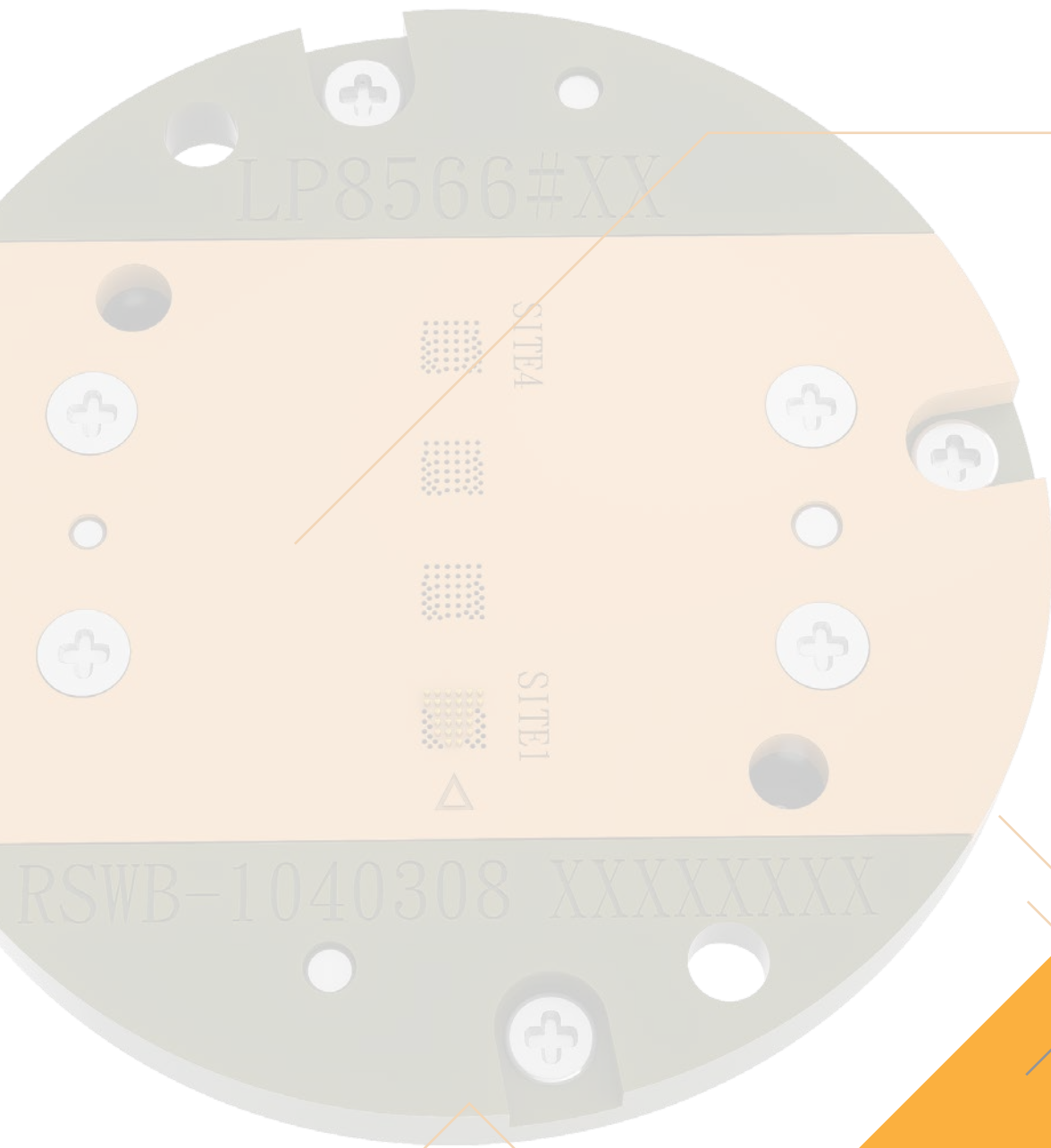


Unit: mm

Pitch	P/N	Type	Total Length (L)	Barrel /Ring OD (φB)	Plunger A Type/ Length (L1)	Plunger A OD (φA)	Plunger C Type/ Length (L3)	Plunger C OD (φC)	Working Stroke	Spring Force ±20% @Working Stroke	Detail Spec (page)
0.5	PE4-035DE09-01Ho	4	1.23	0.43	-	-	Round/ 0.26	0.17	0.18	15g	36
	DE1-035BE12-01Ao	1	2.00	0.35	Conical/ 0.50	0.20	Conical/ 0.30	0.20	0.30	18g	17
	DE4-035DH24-01Ao	4	3.35	0.42	Serrated/ 0.25	0.33	Round/ 0.70	0.18	0.50	27g	43
	PE4-035DF24-01Fo	4	3.35	0.40	Crown/ 0.25	0.34	Round/ 0.70	0.20	0.45	32g	17
	PE1-035EF25-01Fo	1	3.50	0.35	Crown/ 0.60	0.20	Conical/ 0.40	0.20	0.60	32g	18
	PE3-038DF17-03Fo	3	3.15	0.38	Crown/ 0.75	0.23	Round/ 0.55	0.20	0.38	38g	18
	PE3-038EF17-04Ao	3	2.85	0.38	Crown/ 0.50	0.22	Conical/ 0.50	0.22	0.35	30g	19
	PE1-038DF32-02Fo	1	4.80	0.38	Crown/ 1.10	0.21	Round/ 0.55	0.20	0.65	37g	19
	PE1-038EP40-01Ao	1	5.70	0.38	Crown/ 1.10	0.22	Conical/ 0.60	0.22	0.65	40g	20
	PE3-040BF34-01Ao	3	5.70	0.40	Crown/ 1.13	0.32	Conical/ 1.07	0.22	0.70	30g	20
	DE1-040BF39-030	1	5.20	0.40	Crown/ 0.65	0.23	Conical/ 0.65	0.20	0.65	25g	21
	DE3-040DD50-01Ao	3	9.20	0.40	Round/ 2.00	0.30	Round/ 2.20	0.20	1.00	20g	51
DE3-040DD85-01Ao	3	15.55	0.40	Round/ 3.50	0.30	Round/ 3.50	0.20	2.50	22g	52	
0.6	PE4-045EF09-01Ao	4	1.50	0.54	-	-	Conical/ 0.55	0.28	0.40	30g	37
	DE4-048EF17-01Fo	4	2.65	0.55	Crown/ 0.20	0.47	Conical/ 0.75	0.25	0.50	27.5g	21
	DE2-050EF25-120	2	3.40	0.65	Crown/ 0.50	0.30	Conical/ 0.35	0.30	0.40	35g	42
	PE2-050EF25-01Fo	2	3.35	0.66	Crown/ 0.50	0.30	Conical/ 0.30	0.30	0.45	35g	22
	PE4-052DF17-01Fo	4	2.57	0.62	Crown/ 0.30	0.51	Round/ 0.57	0.25	0.40	30g	22
	PE4-052DF28-01Fo	4	4.20	0.60	Crown/ 0.40	0.51	Round/ 1.00	0.25	0.60	40g	23
DE4-052EF23-02Fo	4	3.35	0.61	Crown/ 0.30	0.50	Conical/ 0.75	0.30	0.45	35g	24	
0.7	DE4-056EF09-03Fo	4	1.50	0.65	-	-	Conical/ 0.55	0.38	0.40	31g	42
	PE4-056EF09-01Ho	4	1.50	0.65	-	-	Conical/ 0.55	0.38	0.40	31g	37
	PE4-056DF20-02Fo	4	3.05	0.65	Crown/ 0.30	0.54	Round/ 0.70	0.30	0.50	35g	24
	DE3-056BE34-01Ao	3	5.39	0.56	Conical/ 0.94	0.40	Conical/ 1.00	0.30	0.67	35g	31
	WE3-056BE34-02Ao	4	5.39	0.56	Conical/ 0.94	0.40	Conical/ 1.00	0.30	0.67	35g	46
PE1-058EE40-01Ao	1	5.75	0.58	Conical/ 1.10	0.30	Conical/ 0.65	0.30	0.80	28g	43	
0.8	PE4-065EW15-01Ao	4	2.5	0.65	Serrated/ 0.60	0.53	Conical/ 0.70	0.42	0.50	32g	24
	PE4-068EP35-01Fo	4	4.45	0.80	Crown/ 0.40	0.67	Conical/ 0.90	0.35	0.65	40g	25
	DE1-072EE50-01Ao	1	7.20	0.72	Conical/ 1.70	0.40	Conical/ 0.50	0.40	1.20	20g	25
0.9	DE1-080BF40-010	1	5.80	0.80	Crown/ 1.15	0.50	Conical/ 0.65	0.50	0.70	30g	26
1.0	DE4-090EF25-02Fo	4	3.20	1.00	Crown/ 0.40	0.90	Conical/ 0.70	0.63	0.50	30g	26
	DE1-091DD10-01Ao	1	13.70	0.91	Round/ 1.80	0.50	Round/ 1.80	0.50	2.00	50g	52

Except the specifications in the table, we provide customization according to your specifications.

*All specifications are subject to changes without prior notification



Dongguan
+86-769-85151668

Beijing
+86-10-53856584

Chengdu
+86-28-87440813

Chongqing
+86-158-23468769

Shenzhen
+86-755-82794229

Kunshan
+86-512-57378981

Wuhan
+86-139-73919421

Hongkong
+852-23014671

HaNoi
+843-8805-1121

San Jose
+1-408-3341981

Frankfurt
+49-171-3669549

Bangalore
+91-7619689680

Singapore
+65-81391296

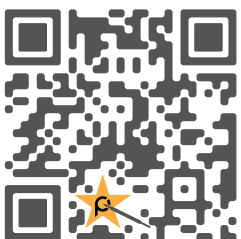
Seoul
+070-7543-2531

Tokyo
+81-5295-7090

Taipei HQ
+886-2-29612525

Kaohsiung
+886-7-3601161

Zhubei
+886-3-5506368



www.ccpcontactprobes.com
ccp_service@pccp.com.tw