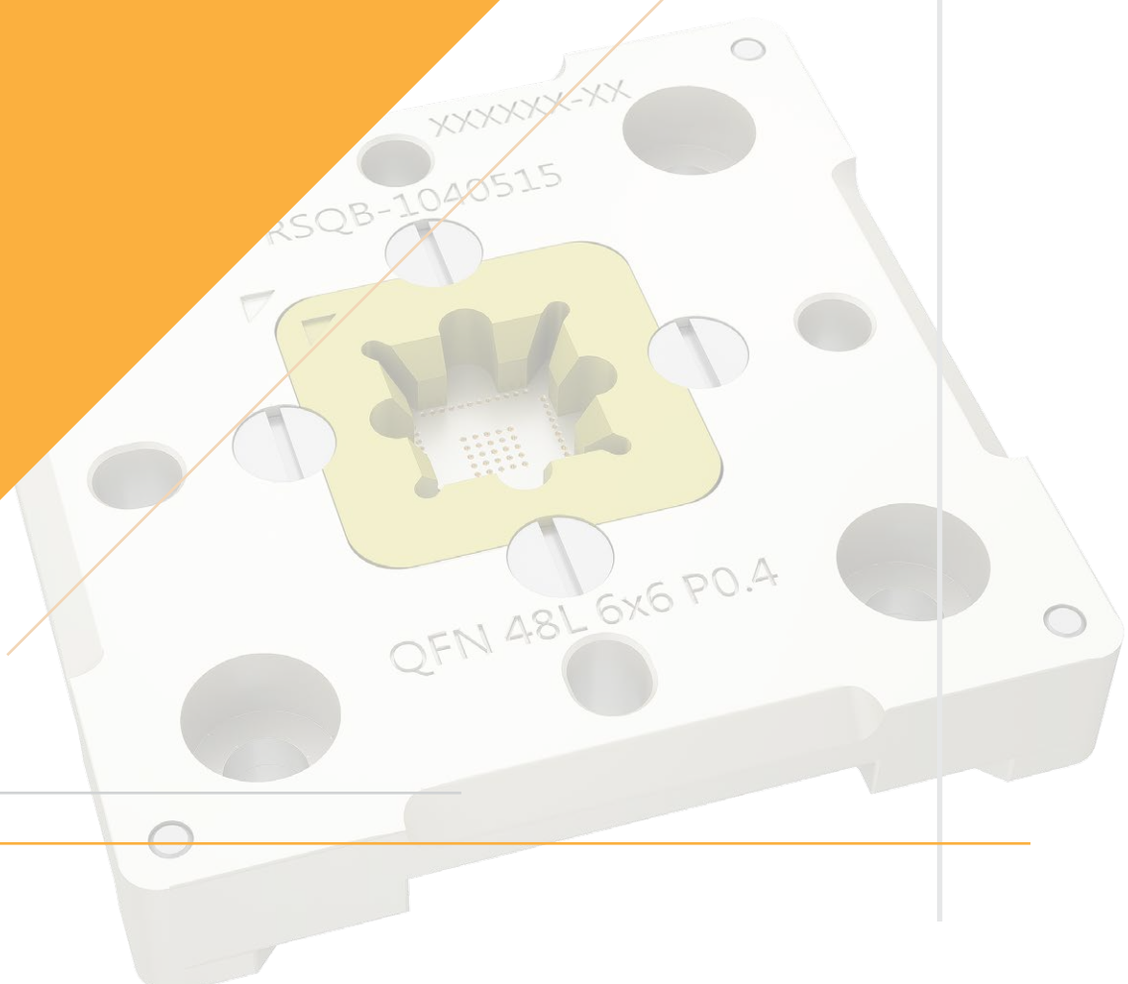
Semiconductor Testing Solutions

Testing Solutions
IC Testing Probes



C.C.P. CONTACT PROBES

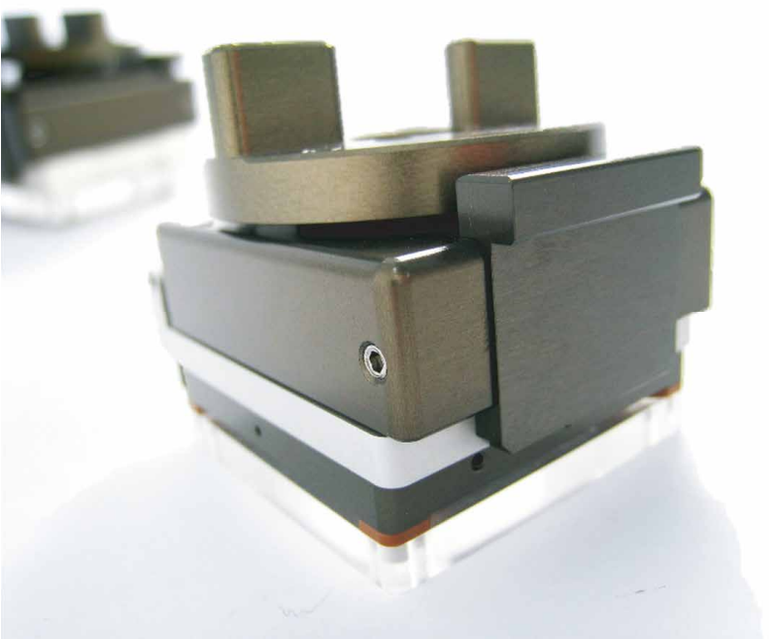
Content

- 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 58

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.

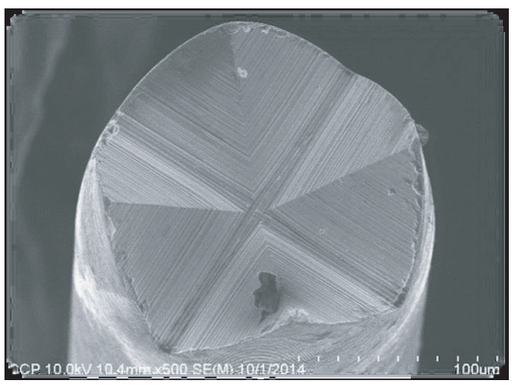
After years of continuous growth, C.C.P. went public in 2001 and got listed on the Taiwan Stock Exchange in 2003. As of today, C.C.P. has subsidiaries in the U.S.A., China, Germany, India, Singapore, Japan and Korea, meeting demands from customers around the globe.

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

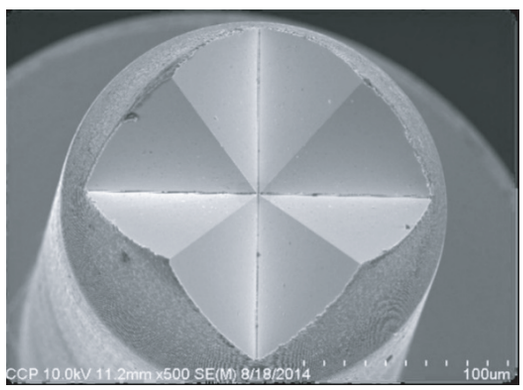


C.C.P. Strengths

Mirror process



Normal



Mirror process

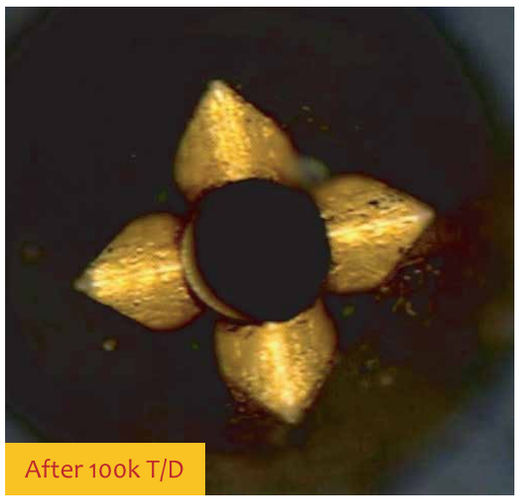
C.C.P. consistently delivers high-quality products by optimizing the production process. The results are extremely durable and reliable products that meet our client's expectations.
One of these cutting-edge technologies is called “Mirror Process” which significantly improves the surface quality of the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

- **Less chance for solder migrating**
- **Less probe cleaning neccessary**

Tip appearance comparison after 100,000 touchdowns



Normal



Mirror process

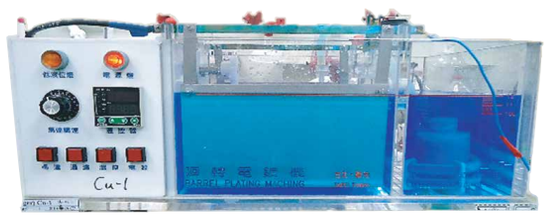
C.C.P. Strengths

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

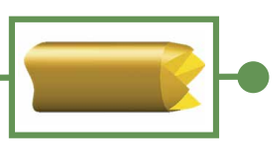
Structure Type
- 1 Double-active
- 2 Double-active with Ring
- 3 Single-active
- 4 Single-active with Ring

Serial Number

Barrel Outer Diameter Ex 031 corresponds with barrel OD Φ0.31mm

Barrel Length Ex 21 corresponds with barrel length 2.1mm

Head Type

F — 

Crown
Easily penetrates into solder ball or pad for improved contact.

P — 

Pyramid Crown
Easily penetrates into solder ball or pad with stronger tips for improved contact.

W — 

Serrated 5 Tips
Easily penetrates into solder ball or pad with more contact points than crown type.

S — 

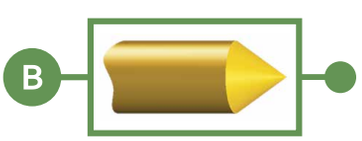
Serrated 8 Tips
Usually used for Kelvin Tests that have a very small pitch between the probe tips.

H — 

Serrated 9 Tips
Easily penetrates into solder ball or pad with more contact points than crown type.

A — 

Cup
Commonly used for testing PGA package types of IC.

B — 

Conical 60°
Sharper tip to strongly penetrate the oxide or particle on PCB.

E — 

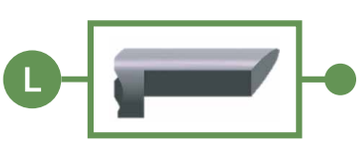
Conical 90 °, 120°
Sharper tip to softly penetrate the oxide or particle on PCB.

D — 

Sphere
For avoiding probe mark on PCB. It is usually used in bottom plunger.

G — 

Flat
Mostly used in bottom plunger to avoid scratching PCB gold pad and leaving no marks or indentations.

L — 

Half Moon
Used for Kelvin type. Pointing to ball / pad, half moon tip perfectly aims the testing area.

L — 

Blade
Sharper than half moon tip, blade type is more commonly used in Kelvin pin as for standard types.






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.

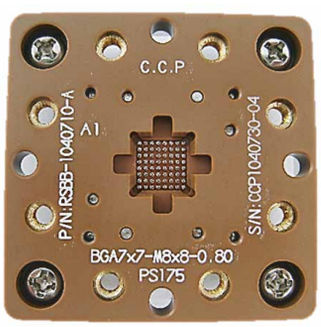
Design Concept

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

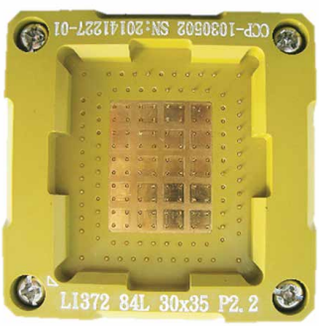
Pitch
0.2~2.2mm



QFN Socket
Pitch 0.3mm



BGA Socket
Pitch 0.8mm



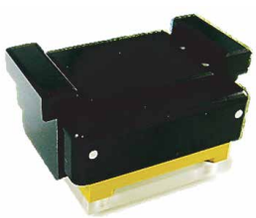
LGA Socket
Pitch:2.2mm

General IC Test Socket	Specification
IC Package Size	1.5X1.5~38X38 mm²
Min. Pitch	0.2mm
Material	Torlon 4203, Torlon 5530, PEEK, PEEK ceramic, SCP 5000
Data Rate	6 Gpbs/ 8 Gpbs/ 12 Gpbs Performance will be different according to testing condition
Life Time (Pin)	>200K

Lid



Knob



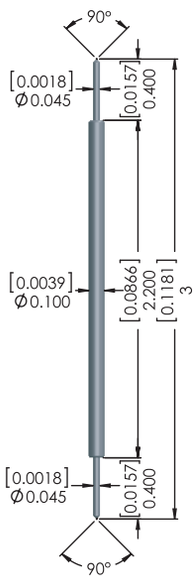
Block

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE1-010EE22-01A0



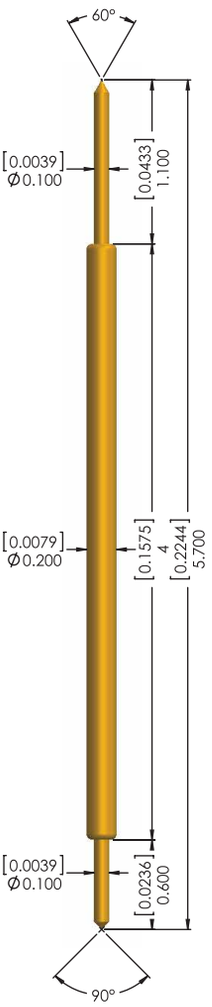
Material

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

Mechanical Spec.

Recommened Travel
0.35mm
Full Travel
0.50mm
Spring Force
7g±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.

Recommened Travel
0.60mm
Full Travel
0.90mm
Spring Force
12g±20%@0.60mm
Operating Temp.
-15°C~125°C

Electrical Spec.

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.

Pitch: 0.3mm Socket Material: Peek 1000

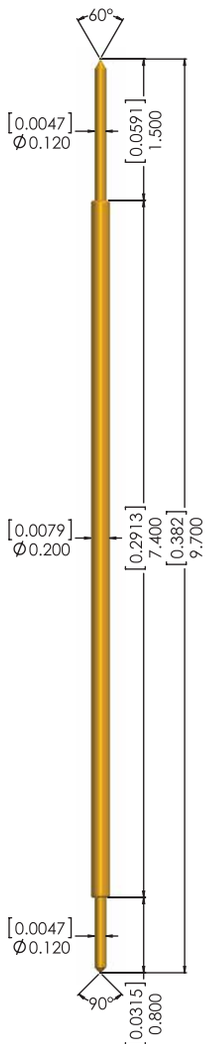
Current Rating 1A continuous
Contact Resistance <200mΩ(AVG)
Characteristic Impedance 55.9Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@12.88GHz
Time Delay 26.83 psec
Loop Inductance 1.5 nH
Capacitance 0.48 pF

*All specifications are subject to changes without prior notification

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.

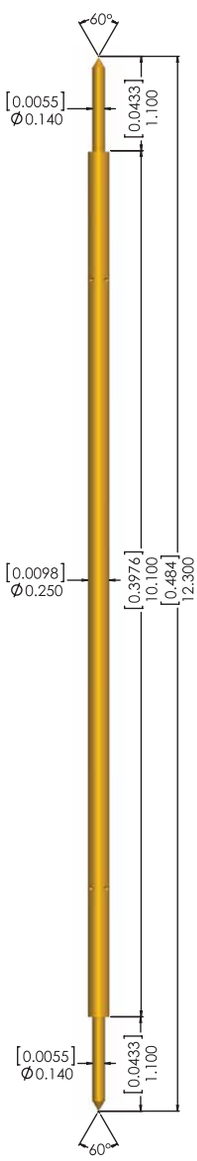
Recommened Travel
0.80mm
Full Travel
1.30mm
Spring Force
6g±20%@0.80mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.3mm Socket Material: Peek 1000 GSG

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.

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

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000 GSG

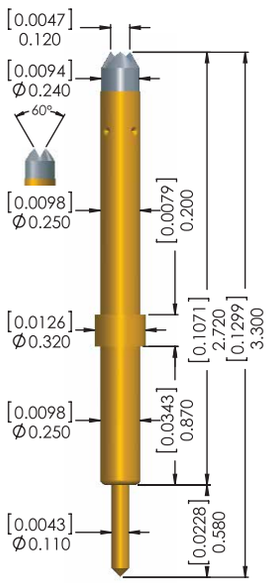
Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 51.31Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@7.63GHz
Time Delay 55.93 psec
Loop Inductance 2.87 nH
Capacitance 1.09 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE4-025EF24-01A0



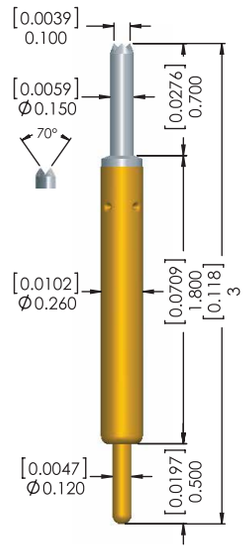
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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

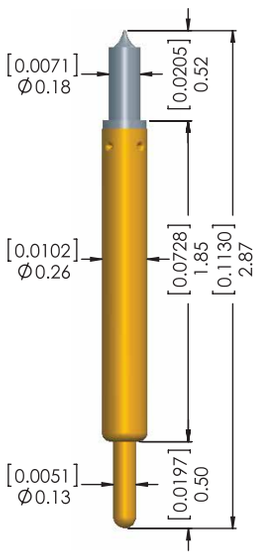
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 57.68Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@9.16GHz
Time Delay 13.31 psec
Loop Inductance 0.77 nH
Capacitance 0.23 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE3-026BD18-01A0



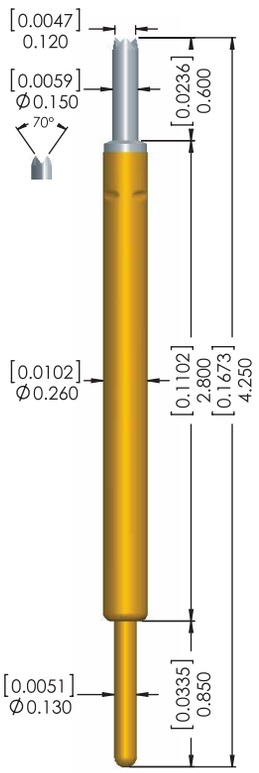
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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

G S G

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

G S G

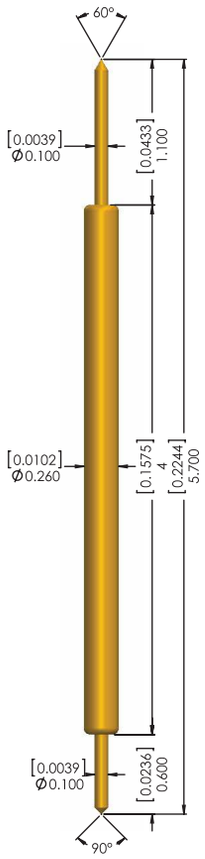
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 54Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@18.9GHz
Time Delay 21.7 psec
Loop Inductance 1.18 nH
Capacitance 0.40 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

DE1-026BE40-01A0



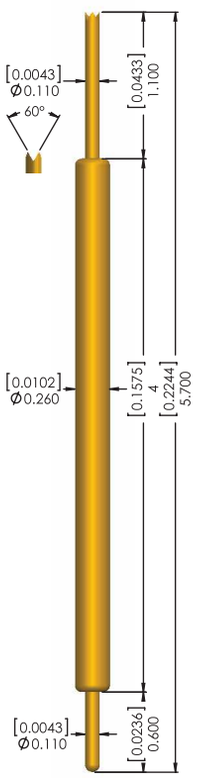
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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

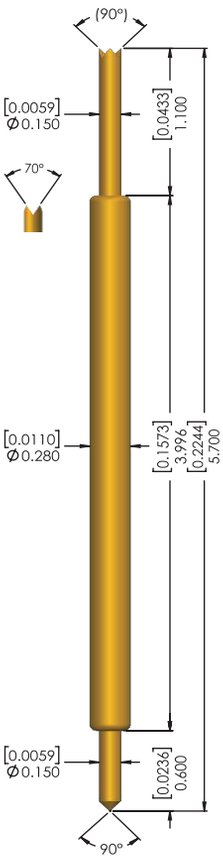
Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 47.71 Ω
Insertion Loss -1dB@17.81GHz
Return Loss -20dB@6.45GHz
Time Delay 27.67 psec
Loop Inductance 1.32 nH
Capacitance 0.58 pF

*All specifications are subject to changes without prior notification

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.

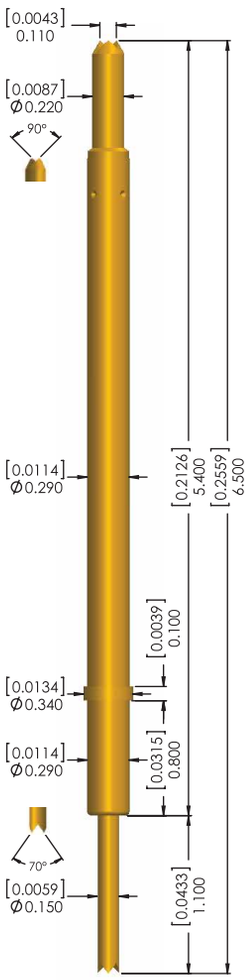
Recommened Travel
0.65mm
Full Travel
1.10mm
Spring Force
28g±20%@0.65mm
Operating Temp.
-15°C~125°C

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.

Recommened 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

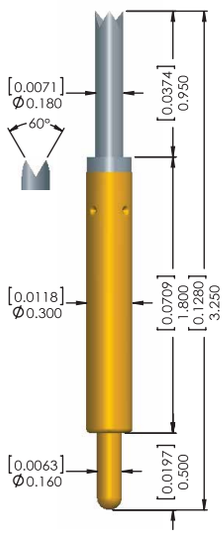
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 44.38Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@3.77GHz
Time Delay 28.84 psec
Loop Inductance 1.28 nH
Capacitance 0.65 pF

*All specifications are subject to changes without prior notification

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.

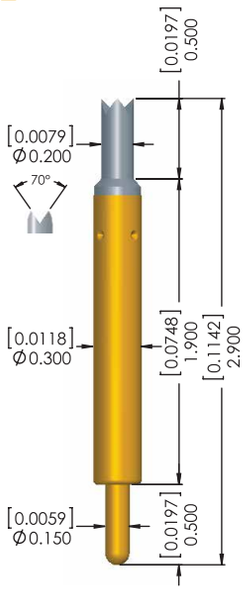
Recommened Travel
0.35mm

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.

Recommened Travel
0.40mm

Full Travel
0.50mm

Spring Force
35g±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 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.

Pitch: 0.4mm Socket Material: Peek 1000

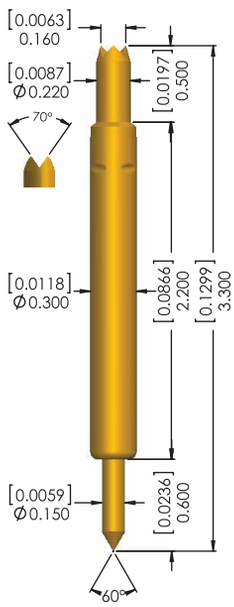
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 42.36Ω
Insertion Loss -1dB >20GHz
Return Loss -20dB@6.47GHz
Time Delay 14.4 psec
Loop Inductance 0.61 nH
Capacitance 0.34 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

DE3-030BF21-03F0



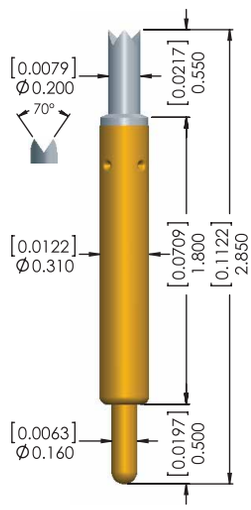
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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

G S G

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

G S G

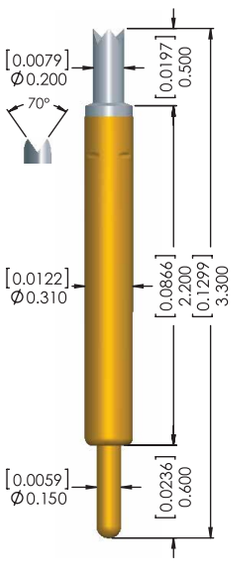
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 39.9Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@4.5GHz
Time Delay 14.7psec
Loop Inductance 0.59nH
Capacitance 0.37pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE3-031DF21-03F0



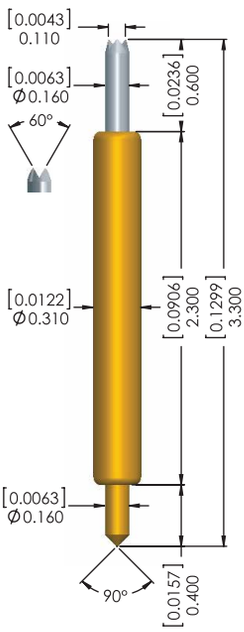
Material

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

Mechanical Spec.

Recommened Travel
0.35 mm
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.

Recommened Travel
0.40mm
Full Travel
0.65mm
Spring Force
30g±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 42.67Ω
Insertion Loss -1dB >20GHz
Return Loss -20dB@5.08GHz
Time Delay 16.64psec
Loop Inductance 0.71nH
Capacitance 0.39 pF

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

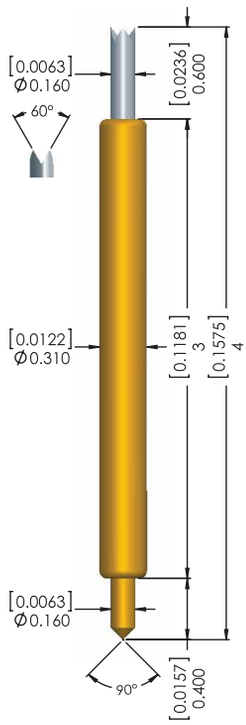
Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 40.14 Ω
Insertion Loss -1dB >20GHz
Return Loss -20dB@4.15GHz
Time Delay 14.45 psec
Loop Inductance 0.58 nH
Capacitance 0.36 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE1-031EF30-02F0



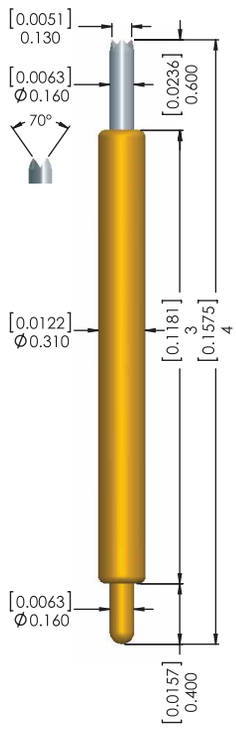
Material

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

Mechanical Spec.

Recommened Travel
0.6omm
Full Travel
0.8omm
Spring Force
31g±20%@0.6omm
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.

Recommened Travel
0.6omm
Full Travel
0.8omm
Spring Force
31g±20%@0.6omm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000 G S G

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 0.75 nH
Capacitance 0.48 pF

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000 G S G

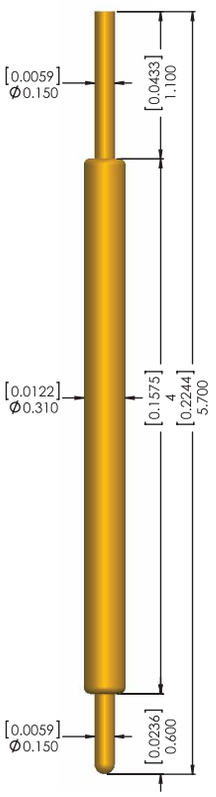
Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 40 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@3.9GHz
Time Delay 19.7 psec
Loop Inductance 0.8 nH
Capacitance 0.49 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

DE1-031DG40-01A0



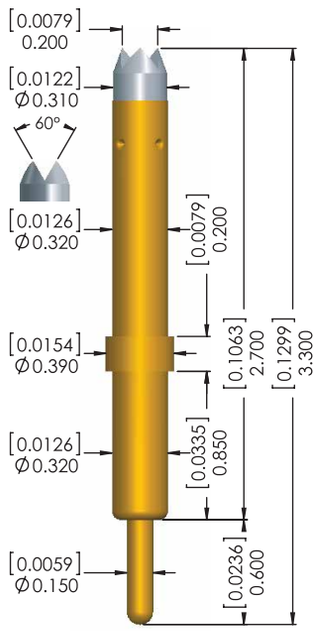
Material

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

Mechanical Spec.

Recommened 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.

Recommened Travel
0.40mm
Full Travel
0.60mm
Spring Force
30g±20%@0.40mm
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 42.8Ω
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.

Pitch: 0.5mm Socket Material: Peek 1000

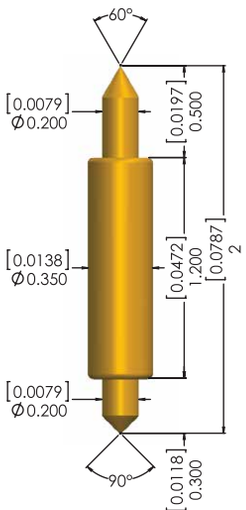
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 43.3 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@5.44GHz
Time Delay 18.2 psec
Loop Inductance 0.79 nH
Capacitance 0.42 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

DE1-035BE12-01A0



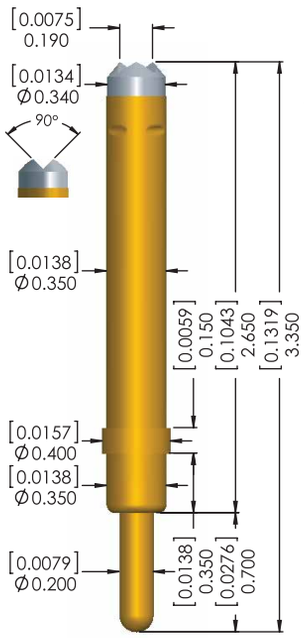
Material

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

Mechanical Spec.

Recommened 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.

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

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000 G S G

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.

Pitch: 0.5mm Socket Material: Peek 1000 G S G

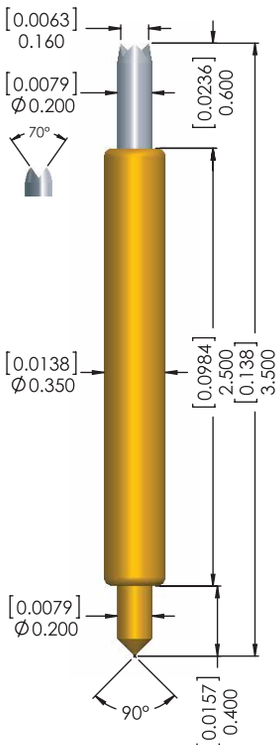
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 39.8 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@3.94GHz
Time Delay 17.5 psec
Loop Inductance 0.70 nH
Capacitance 0.44 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE1-035EF25-01F0



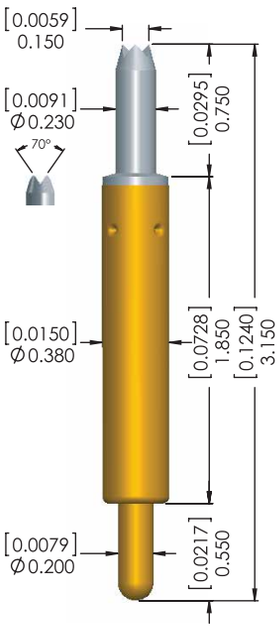
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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

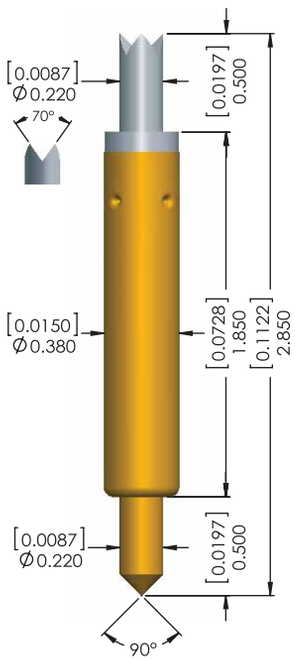
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 45.08 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@5.69GHz
Time Delay 13.97 psec
Loop Inductance 0.63 nH
Capacitance 0.31 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE3-038EF17-04A0



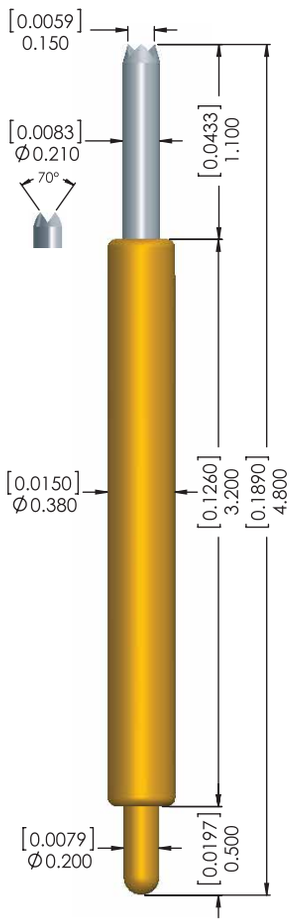
Material

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

Mechanical Spec.

Recommened Travel
0.35mm
Full Travel
0.50mm
Spring Force
30g±20%@0.35mm
Operating Temp.
-55°C~150°C

PE1-038DF32-02F0



Material

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

Mechanical Spec.

Recommened Travel
0.65mm
Full Travel
0.85mm
Spring Force
37g±20%@0.65mm
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 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.

Pitch: 0.5mm Socket Material: Peek 1000

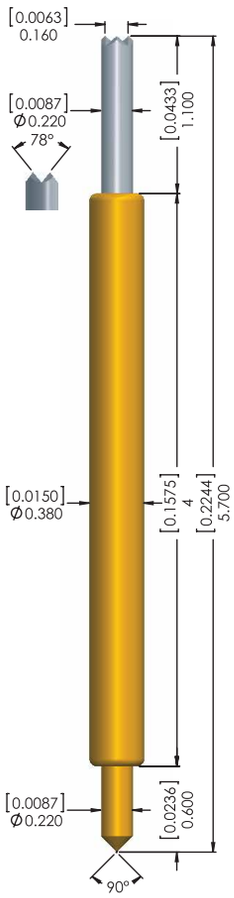
Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 39.5 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@3 GHz
Time Delay 25.2 psec
Loop Inductance 1 nH
Capacitance 0.64 pF

*All specifications are subject to changes without prior notification

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.

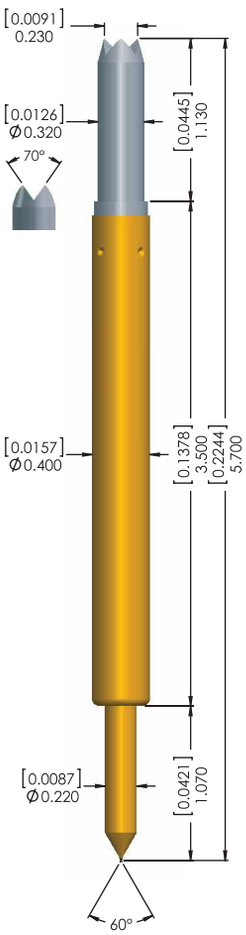
Recommened Travel
0.65mm
Full Travel
1.10mm
Spring Force
40g±20%@0.65mm
Operating Temp.
-55°C~150°C

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

PE3-040BF34-01A0



Material

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

Mechanical Spec.

Recommened 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

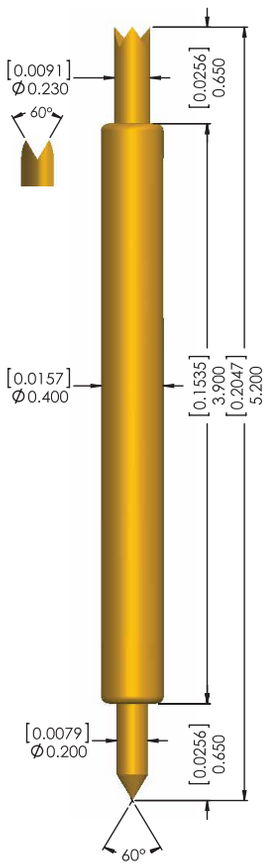
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 38.29 Ω
Insertion Loss 1dB>20GHz
Return Loss -20dB@2.16GHz
Time Delay 27.95 psec
Loop Inductance 1.07 nH
Capacitance 0.73 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

DE1-040BF39-030



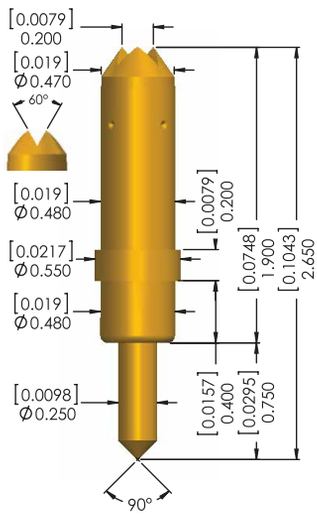
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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 G S G

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 G S G

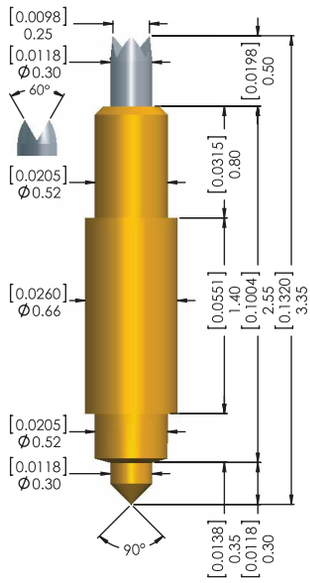
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 36.5Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@3.54GHz
Time Delay 14.2psec
Loop Inductance 0.52nH
Capacitance 0.39pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE2-050EF25-01F0



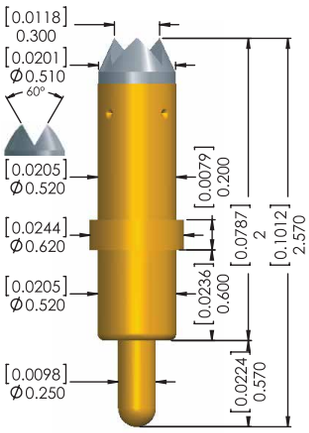
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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

GSG

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

GSG

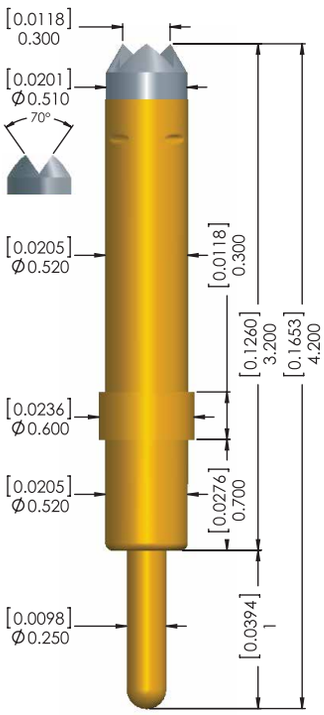
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 38.7 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@4.45GHz
Time Delay 15.4psec
Loop Inductance 0.6nH
Capacitance 0.4pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE4-052DF28-01F0



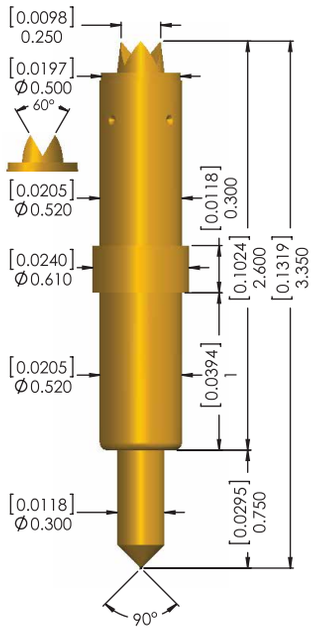
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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 G S G

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 G S G

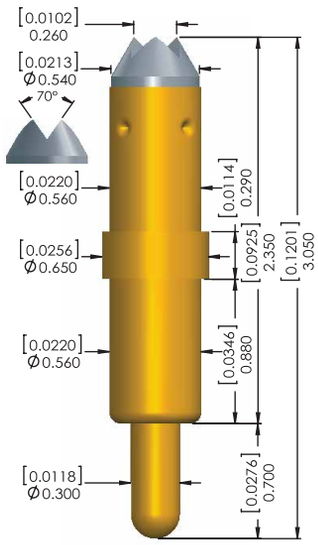
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 41.5 Ω
Insertion Loss -1dB >20GHz
Return Loss -20dB@3.45GHz
Time Delay 19.9 psec
Loop Inductance 0.83 nH
Capacitance 0.48 pF

*All specifications are subject to changes without prior notification

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.

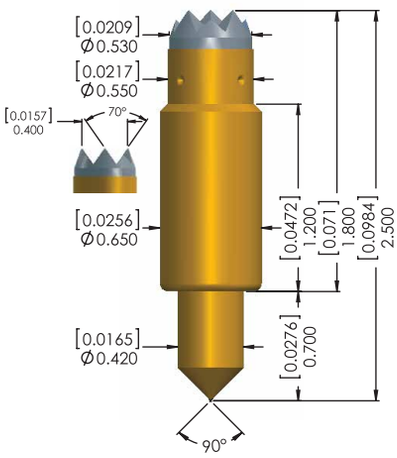
Recommened Travel
0.50mm

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.

Recommened Travel
0.50mm

Full Travel
0.70mm

Spring Force
32g±20%@0.50mm

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 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.

Pitch: 0.8mm Socket Material: Peek 1000

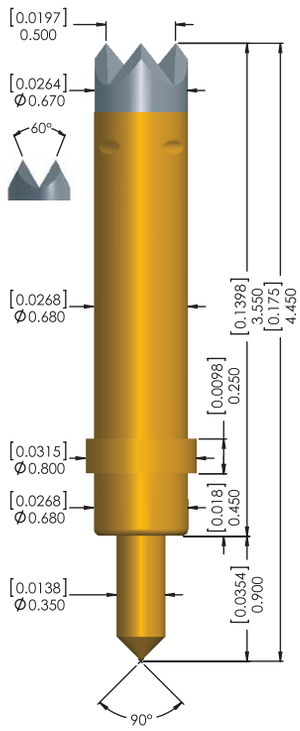
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 29 Ω
Insertion Loss -1dB@10.3GHz
Return Loss -20dB@1.79GHz
Time Delay 16 psec
Loop Inductance 0.47 nH
Capacitance 0.55 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE4-068EP35-01F0



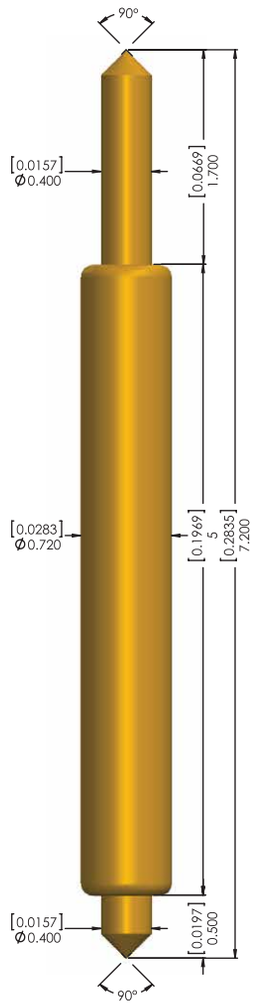
Material

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

Mechanical Spec.

Recommened Travel
0.65mm
Full Travel
0.90mm
Spring Force
40g±20%@0.65mm
Operating Temp.
-15°C~125°C

DE1-072EE50-01A0



Material

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

Mechanical Spec.

Recommened Travel
1.20mm
Full Travel
1.40mm
Spring Force
20g±20%@1.20mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 1.0mm Socket Material: Peek 1000

G S G

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

Pitch: 1.0mm Socket Material: Peek 1000

G S G

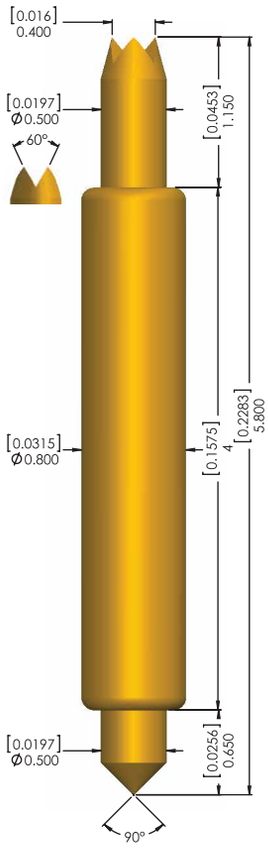
Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 40.7 Ω
Insertion Loss -1dB@13.9GHz
Return Loss -20dB@2.37GHz
Time Delay 38.7 psec
Loop Inductance 1.58 nH
Capacitance 0.95 pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

DE1-080BF40-010



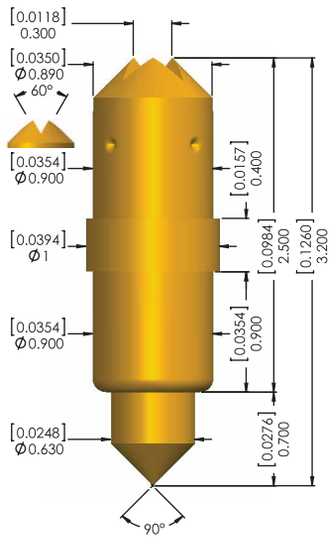
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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

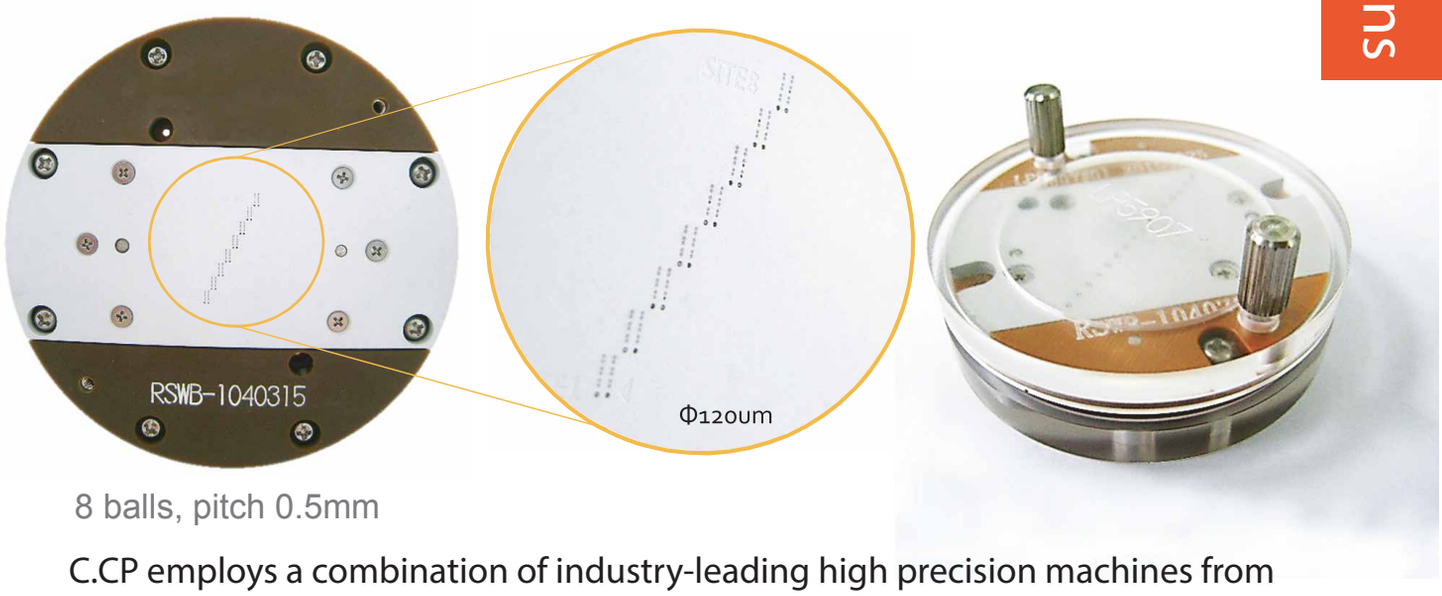
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 34.6 Ω
Insertion Loss -1dB@17.27GHz
Return Loss -20dB@2.16GHz
Time Delay 20.4 psec
Loop Inductance 0.71 nH
Capacitance 0.59 pF

*All specifications are subject to changes without prior notification

Wafer-Level CSP Test

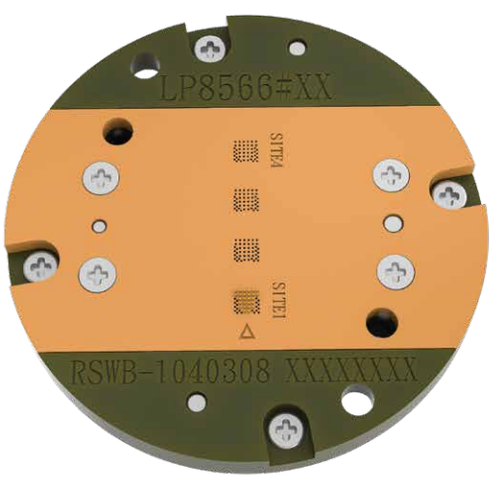
With the massive growth of WLCSP in the semiconductor market, C.C.P. has designed over 30 different kinds of probe heads to meet the demand of the market. A pogo pin design improves the durability of the probe head. Additionally, coplanarity errors induced by differently sized solder balls can be avoided 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.CP 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 Φ 60μm.



36 balls, pitch 0.4mm

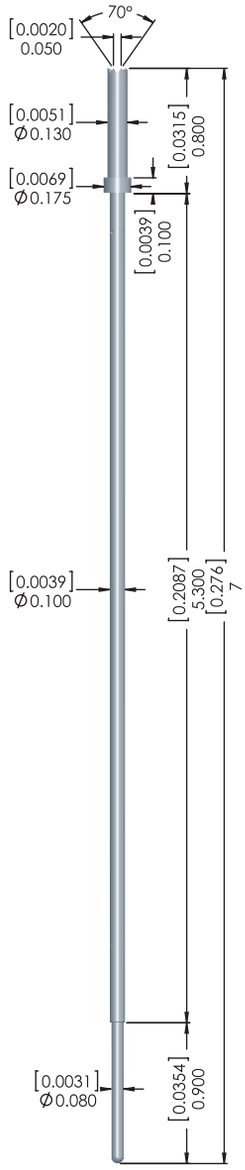
Probe Head	Specification
Min. Pitch	0.15mm
Max. Site Counts	32 sites
Top Housing Material	Photoveel® /VESPEL®SCP5000
Mounting Plate Material	Torlon® 5530
Bottom Housing Material	VESPEL®SCP5000
Life Time (Pin)	>300,000

*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.

Recommened Travel
0.55mm

Full Travel
0.85mm

Spring Force
6g±20%@0.55mm

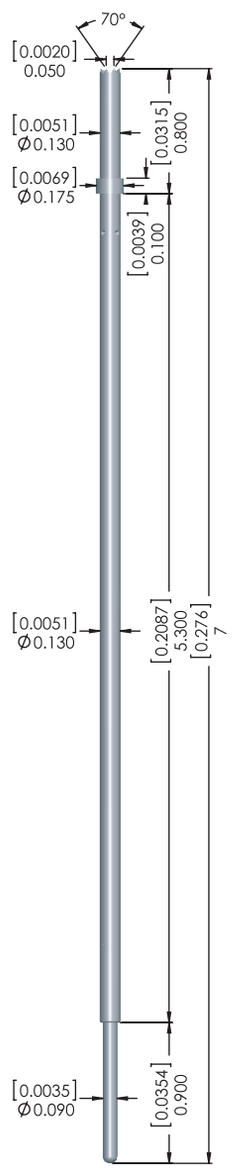
Operating Temp.
-15°C~125°C

Electrical Spec.

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

PE3-013DS53-01F0



Material

Top Plunger
Pd alloy

Barrel
Ni alloy

Spring
SWP, Au plated

Bottom Plunger
Pd alloy

Mechanical Spec.

Recommened Travel
0.55mm

Full Travel
0.85mm

Spring Force
7g±20%@0.55mm

Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.3mm Socket Material: Peek 1000

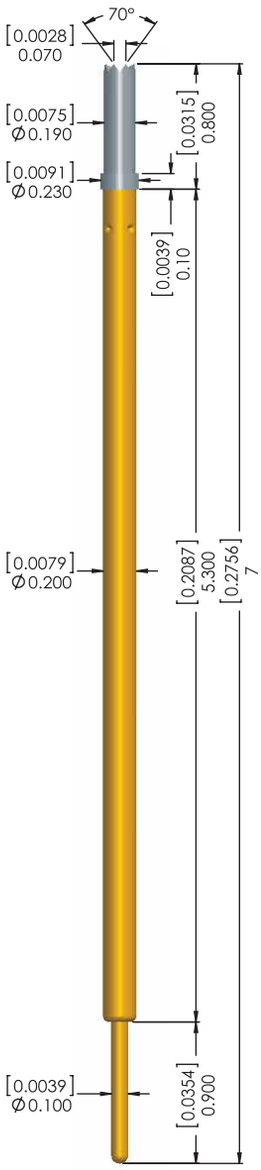
Current Rating 0.4 A continuous
Contact Resistance <500mΩ(AVG)
Characteristic Impedance 91.3Ω
Insertion Loss -1dB@1.47 GHz
Return Loss -20dB@0.43 GHz
Time Delay 42.9 psec
Loop Inductance 3.92 nH
Capacitance 0.47pF

*All specifications are subject to changes without prior notification

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.

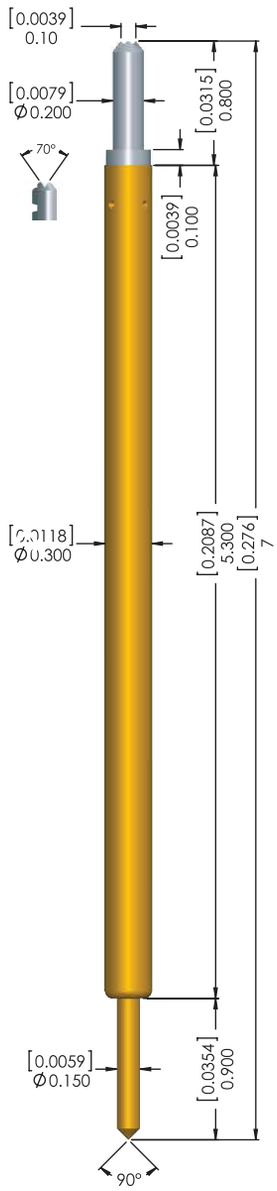
Recommened Travel
0.55mm
Full Travel
0.90mm
Spring Force
25g±20%@0.55mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000 G S G

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.

Recommened 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 G S G

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

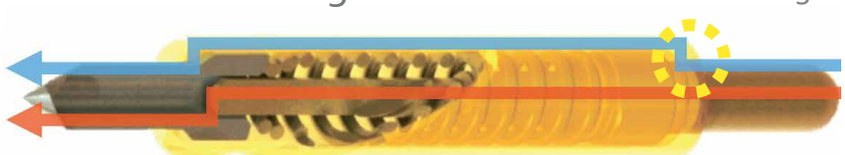
*All specifications are subject to changes without prior notification

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



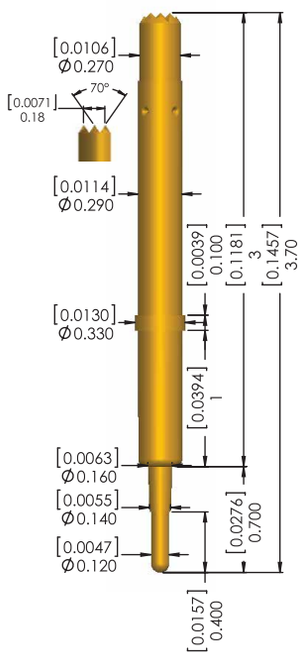
This coaxial high current pin combines a sensor pin with a current test pin in one probe design. The one-piece design of the current test pin improves the electrical resistance significantly.

*All specifications are subject to changes without prior notification

Probe Specifications (IC Testing Probe)

Unit:mm; [ ]:in

DE4-029DW25-01A0



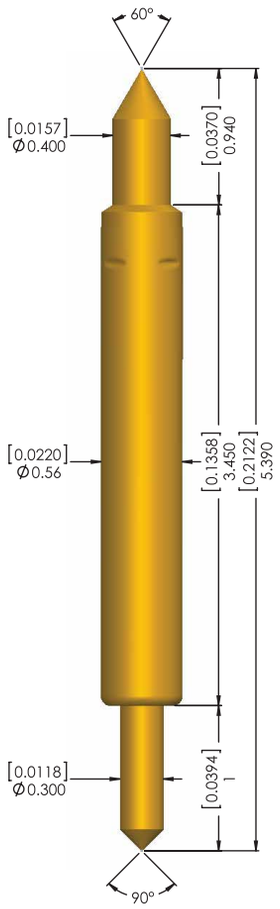
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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

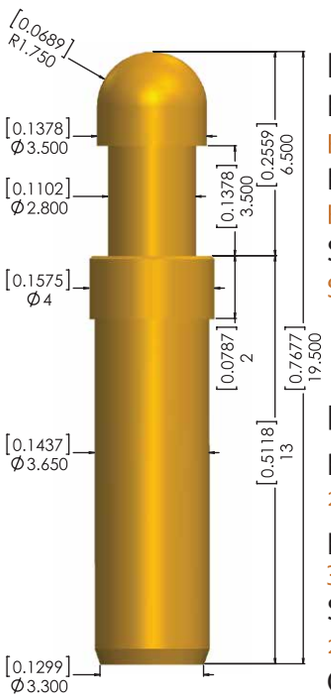
Current Rating 5A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 32.1Ω
Insertion Loss -1dB@6.27 GHz
Return Loss -20dB@1.2GHz
Time Delay 29.5 psec
Loop Inductance 0.95 nH
Capacitance 0.92 pF

*All specifications are subject to changes without prior notification

Probe Specifications (Battery Testing Probe)

Unit:mm; [ ]:in

H101001M1



Material

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

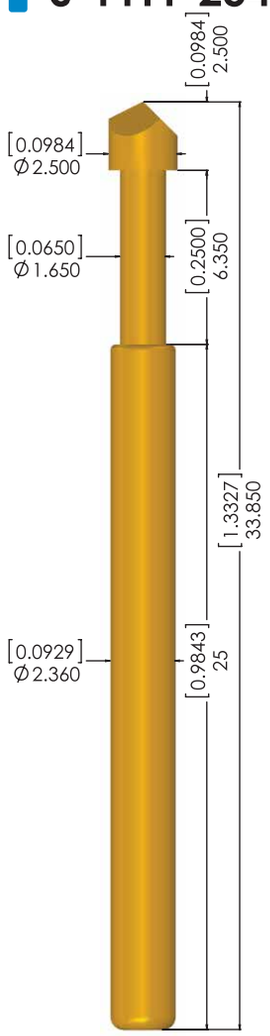
Mechanical Spec.

Recommened 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

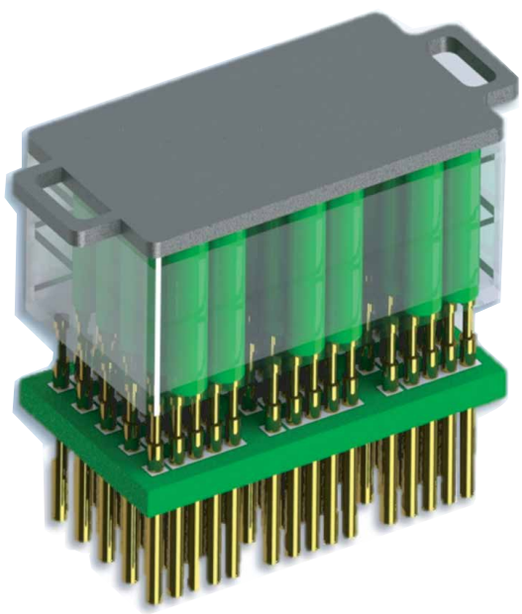
Plunger
BeCu , Au plated
Barrel
Brass , Au plated
Spring
SUS , Au plated

Mechanical Spec.

Recommened Travel
4.20mm
Full Travel
6.35mm
Spring Force
450g±20%@4.20mm
Operating Temp.
-55°C~150°C

Current Rating

6 A



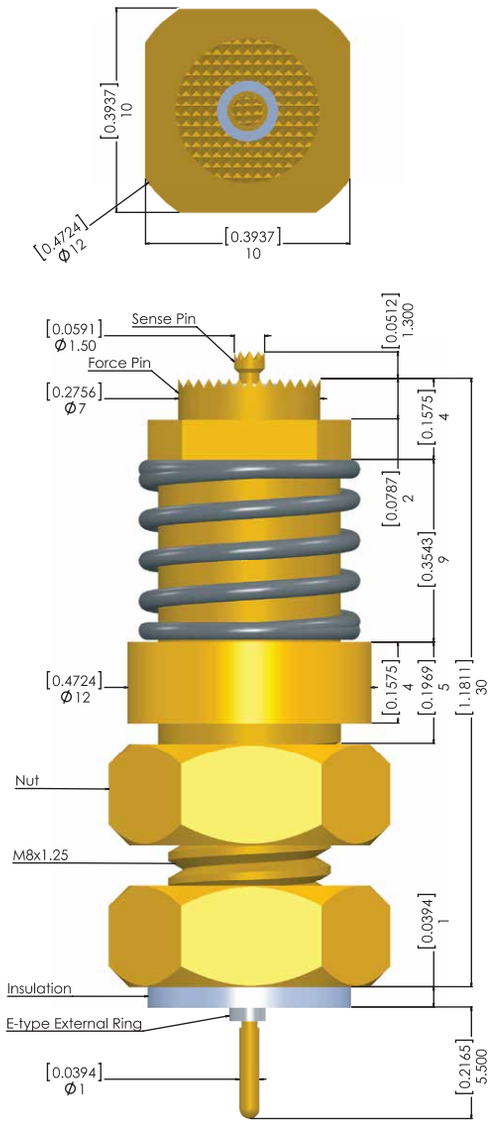
Application Demonstration

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

*All specifications are subject to changes without prior notification

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

Nut

BeCu , Au plated

Insulation

Teflon

Mechanical Spec.

Sense Pin

Recommened Travel
1.00mm

Full Travel
1.50mm

Spring Force
90g±20%@1.00mm

Force Pin

Recommened Travel
4.00mm

Full Travel
6.00mm

Spring Force
700g±20%@4.00mm

Current Rating

50 A



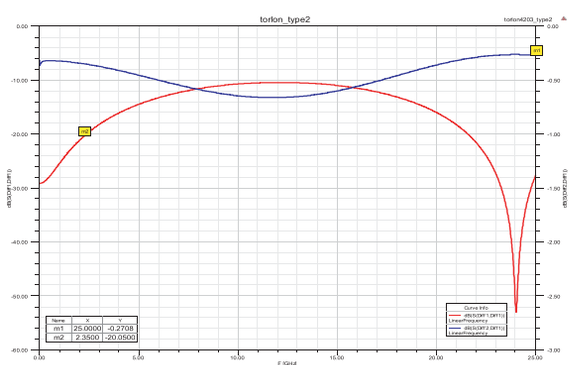
Application Demonstration

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 transmission 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.

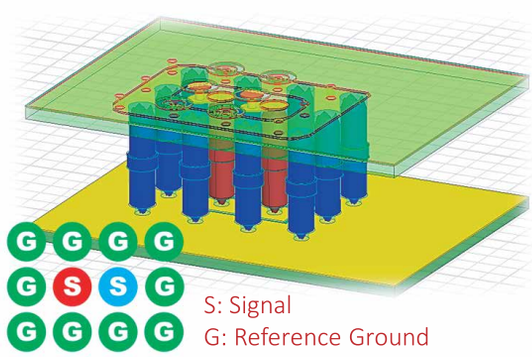
Design Concept



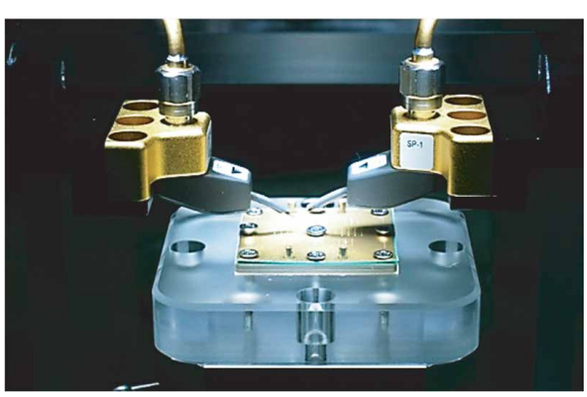
We have the ability to simulate 3D electromagnetic performance as well as S-parameters, inductance and impedance and by that improving SI characteristics.

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.



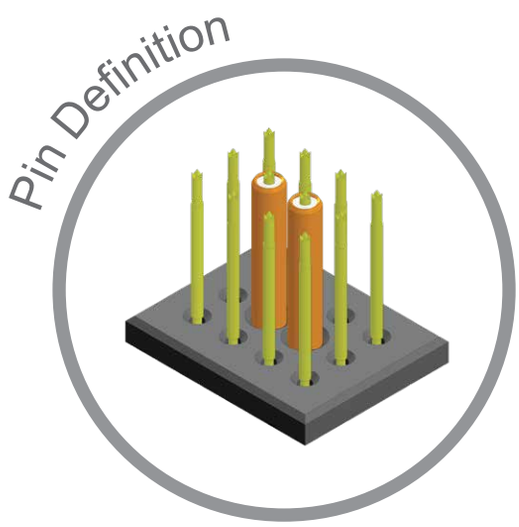
S: Signal
G: Reference Ground



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

*All specifications are subject to changes without prior notification

Probe Specifications (Coaxial Probe)

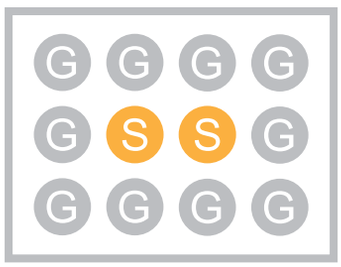




Pin Definition

S Signal Probe

G Ground Probe

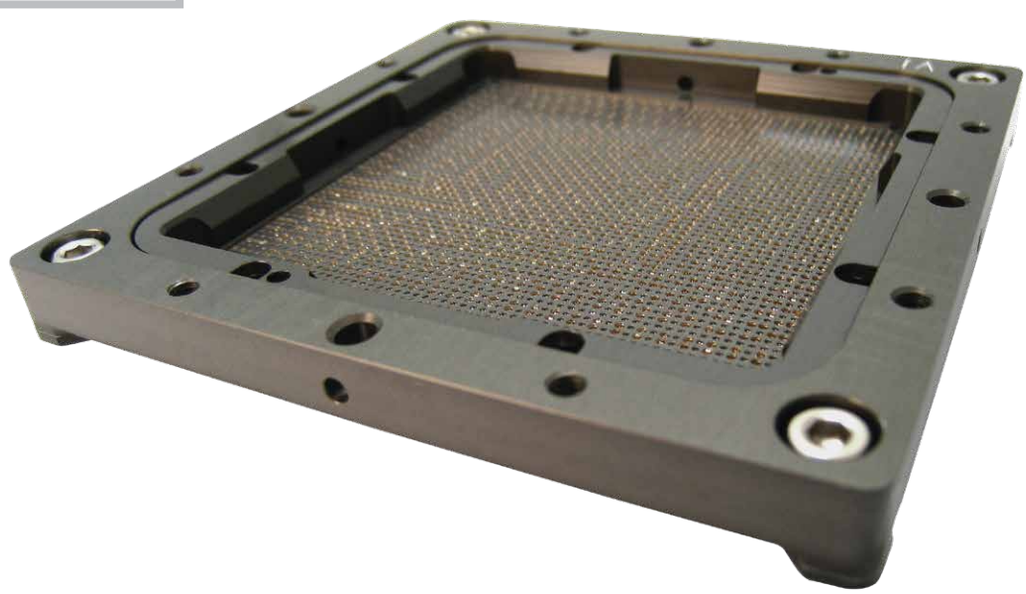


Application

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

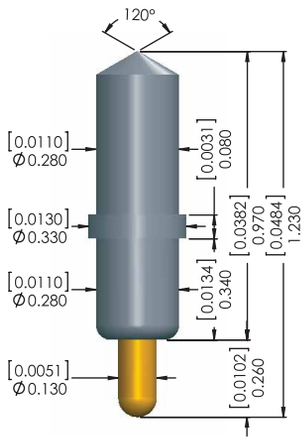


*All specifications are subject to changes without prior notification

Probe Specifications (IC Test Probe)

Unit:mm; [ ]:in

PE4-028DE09-01A0



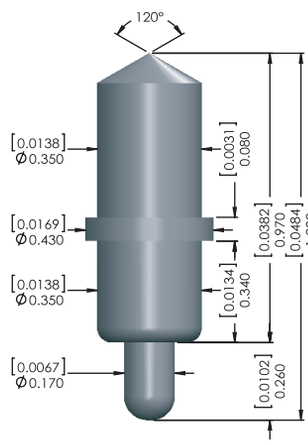
Material

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

Mechanical Spec.

Recommened Travel
0.18mm
Full Travel
0.23mm
Spring Force
15g±20%@0.18mm
Operating Temp.
-55°C~150°C

PE4-035DE09-01H0



Material

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

Mechanical Spec.

Recommened Travel
0.18mm
Full Travel
0.23mm
Spring Force
14g±20%@0.18mm
Operating Temp.
-55°C~150°C

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000

Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 48.9 Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB>20GHz
Time Delay 7.3 psec
Loop Inductance 0.36 nH
Capacitance 0.15 pF

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000

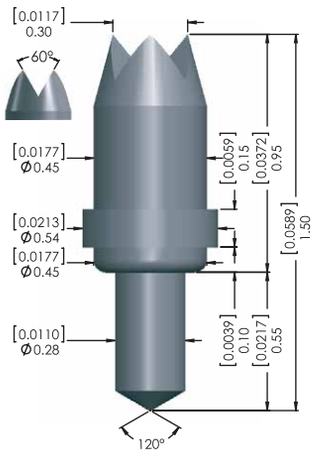
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 37.4Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@7.62GHz
Time Delay 7.48 psec
Loop Inductance 0.28 nH
Capacitance 0.2 pF

*All specifications are subject to changes without prior notification

Probe Specifications (IC Test Probe)

Unit:mm; [ ]:in

PE4-045EF09-01A0



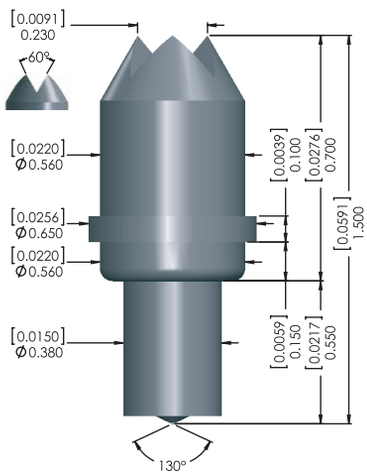
Material

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

*All specifications are subject to changes without prior notification

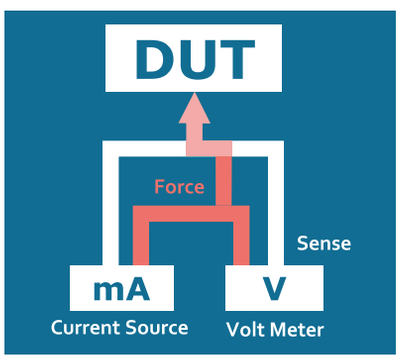
Kelvin Contact Solutions

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

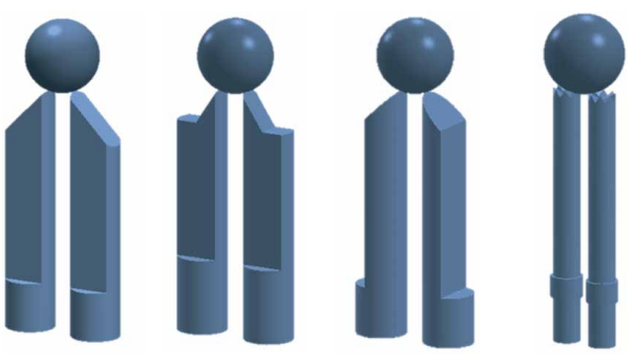
Kelvin Contact is mostly used to test specific electrical signals, as well as be the route of current bypass when testing. C.C.P. innovated several types of kelvin pins to meet market demands.





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 mm²
Min. Pitch	0.30mm
Life Time (Pin)	>200,000

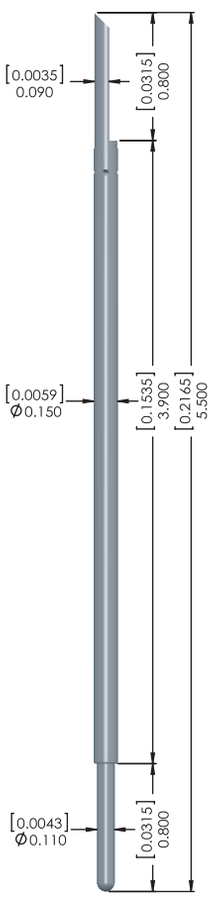


*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

PE3-015DL38-01A0



Material

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

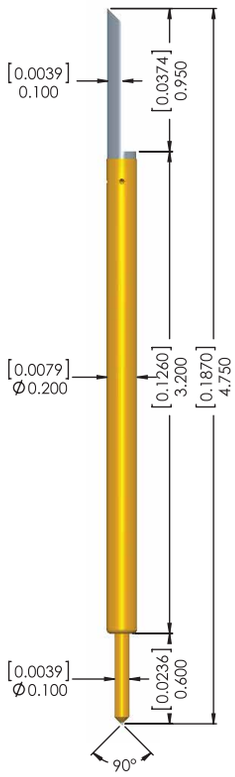
Mechanical Spec.

Recommened 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

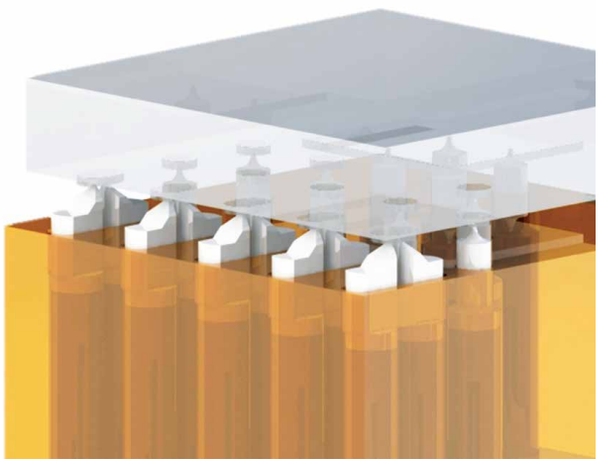
Mechanical Spec.

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

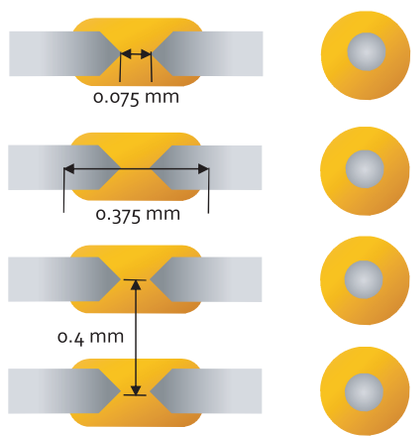
Electrical Spec.

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

Half Moon Kelvin Socket Example



Pin Array

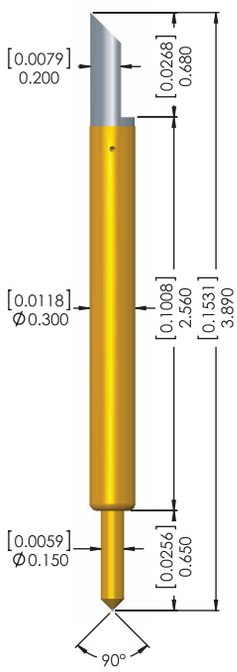


*All specifications are subject to changes without prior notification

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

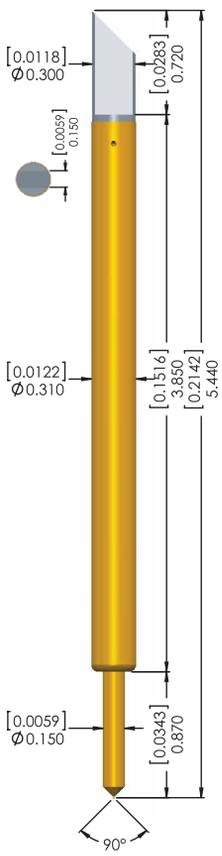
Mechanical Spec.

Recommened 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.

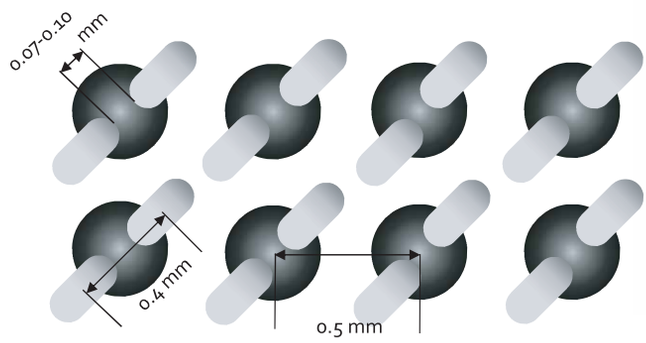
Recommened Travel
0.60mm
Full Travel
0.75mm
Spring Force
32g±20%@0.60mm
Operating Temp.
-55˚C~150˚C

Electrical Spec.

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

Blade Kelvin Socket Example

Pin Array



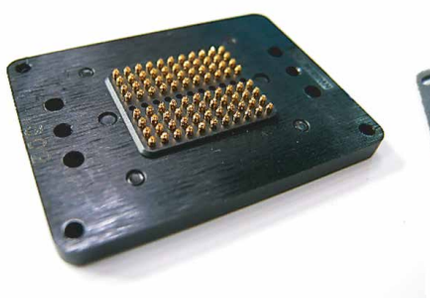


*All specifications are subject to changes without prior notification

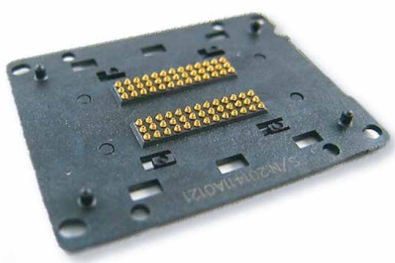
Memory Test Solutions

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

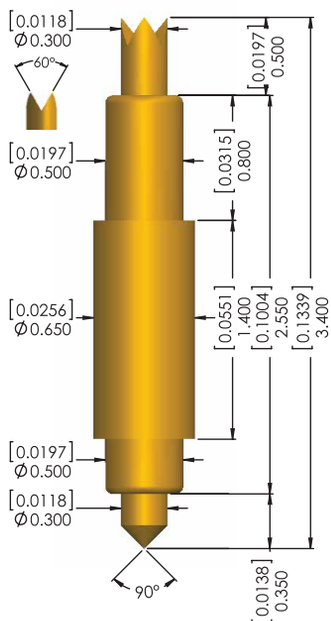
*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

DE2-050EF25-120

DDR 2/3



Material

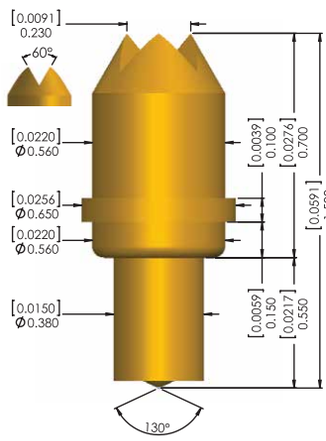
Top Plunger
BeCu , Au plated
Barrel
Brass , Au plated
Spring
SUS , Au plated
Bottom Plunger
BeCu , Au plated

Mechanical Spec.

Recommened 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

Mechanical Spec.

Recommened 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

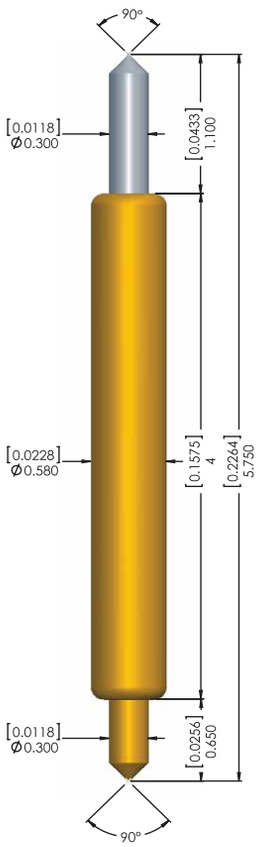
Current Rating 1A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 36.16Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@5.11GHz
Time Delay 9.4psec
Loop Inductance 0.34nH
Capacitance 0.26pF

*All specifications are subject to changes without prior notification

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.

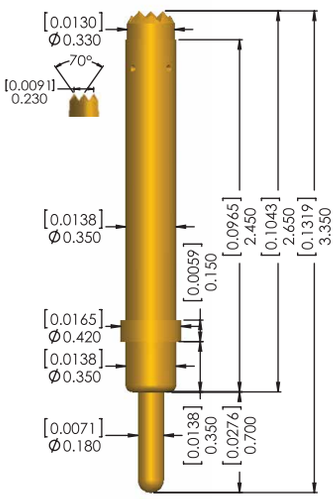
Recommened Travel
0.80mm

Full Travel
1.1mm

Spring Force
28g±20%@0.80mm

Operating Temp.
-55°C~150°C

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.

Recommened Travel
0.50mm

Full Travel
0.70mm

Spring Force
27g±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 41.2Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@ 2.56GHz
Time Delay 32.2 psec
Loop Inductance 1.33nH
Capacitance 0.78pF

Electrical Spec. G S G

Pitch: 0.5mm Socket Material: Peek 1000

Current Rating 1A continuous
Contact Resistance <75mΩ(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

*All specifications are subject to changes without prior notification

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 mm²
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.

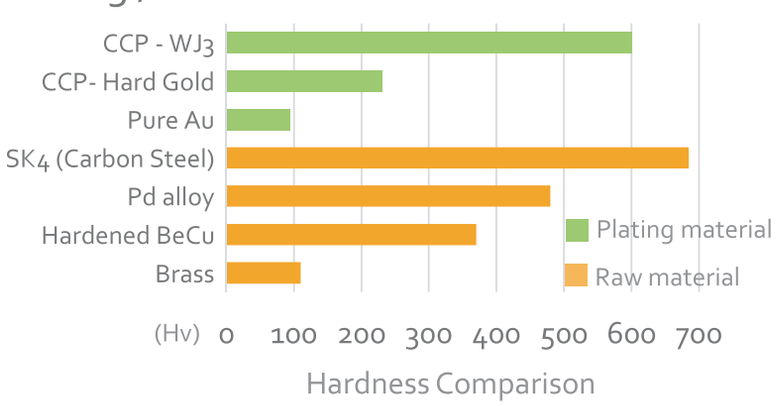


Standard Part



Customized part
Manufactured according to IC size

Plating / Raw Material



Hardness Comparison

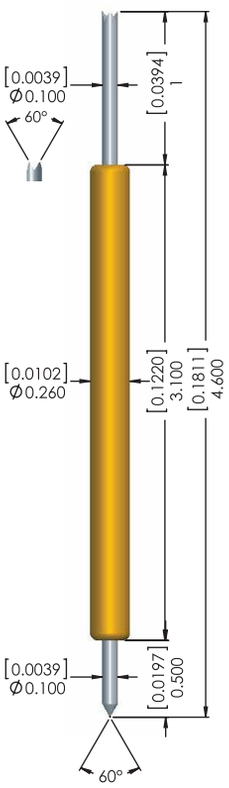
Commonly used in burn in test solution, WJ3 is a special plating material developed by C.C.P. and usually plated on the DUT side plunger. Besides high hardness, WJ3 is able to perform steadily in severe testing environments that reach 150°C for 1000 hours possibly even for 3000 hours.

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

WE1-026EF31-01A0



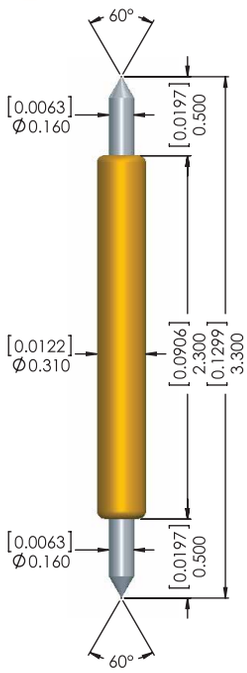
Material

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

Mechanical Spec.

Recommened 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.

Recommened 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 G S G

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

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000 G S G

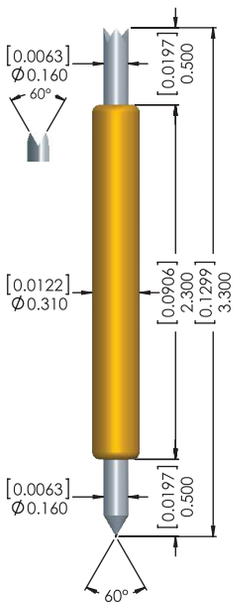
Current Rating 1.5A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 40.8Ω
Insertion Loss -1dB>20GHz
Return Loss -20dB@5.3GHz
Time Delay 15.9psec
Loop Inductance 0.65nH
Capacitance 0.39pF

*All specifications are subject to changes without prior notification

Probe Specifications

Unit:mm; [ ]:in

WE1-031BF23-01A0



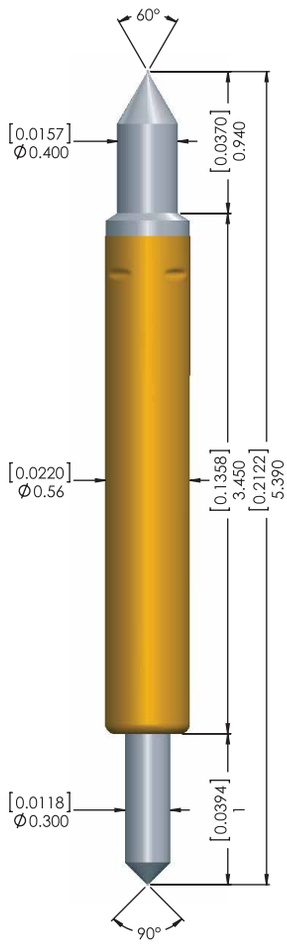
Material

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

Mechanical Spec.

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

WE3-056BE34-02A0



Material

Top Plunger
BeCu , WJ3 plated
Barrel
Brass , Au plated
Spring
SUS , Au plated
Bottom Plunger
BeCu , WJ3 plated

Mechanical Spec.

Recommened Travel
0.67mm
Full Travel
0.90mm
Spring Force
35g±20%@0.67mm
Operating Temp.
-55°C~175°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000 GSG

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.

Pitch: 0.8mm Socket Material: Peek 1000 GSG

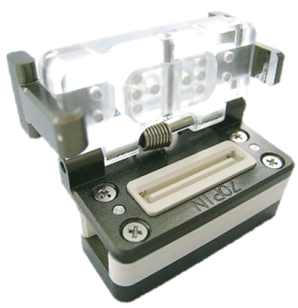
Current Rating 5A continuous
Contact Resistance <75mΩ(AVG)
Characteristic Impedance 32.1Ω
Insertion Loss -1dB@7 GHz
Return Loss -20dB@1.19 GHz
Time Delay 29.5 psec
Loop Inductance 0.95nH
Capacitance 0.92 pF

*All specifications are subject to changes without prior notification

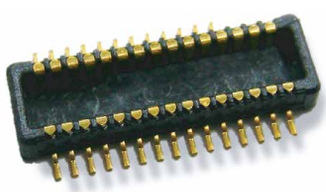
Fin Pitch Conn. / FPC Test

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

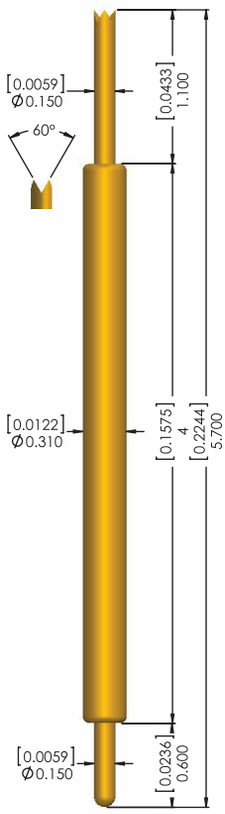


Gold Finger
Device under Test

*All specifications are subject to changes without prior notification

Probe Specifications

DE1-030DF40-05A0



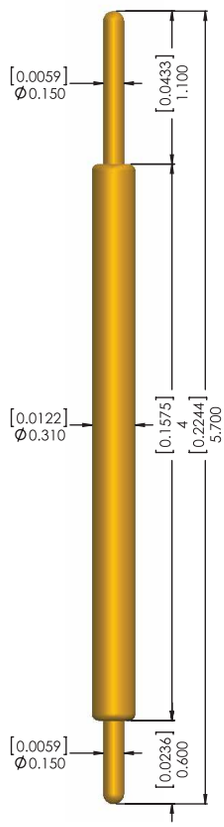
Material

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

Mechanical Spec.

Recommened 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.

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

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000

GSG

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.

Pitch: 0.4mm Socket Material: Peek 1000

GSG

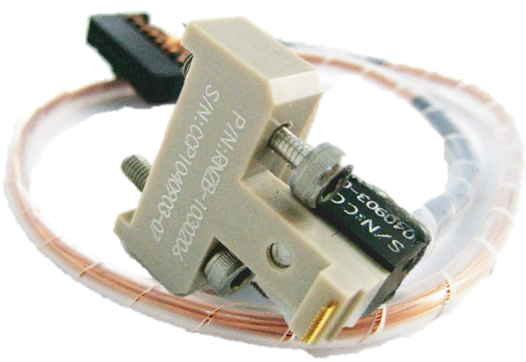
Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 42.54Ω
Insertion Loss -1dB@18.82GHz
Return Loss -20dB@3.41GHz
Time Delay 26.8 psec
Loop Inductance 1.14 nH
Capacitance 0.63 pF

*All specifications are subject to changes without prior notification

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

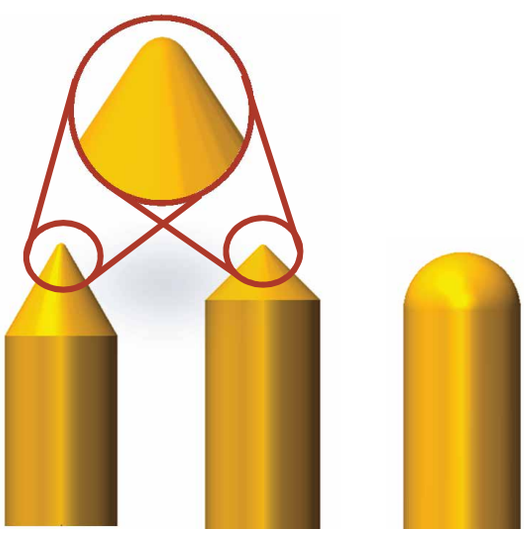


Panel Pin Housing

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

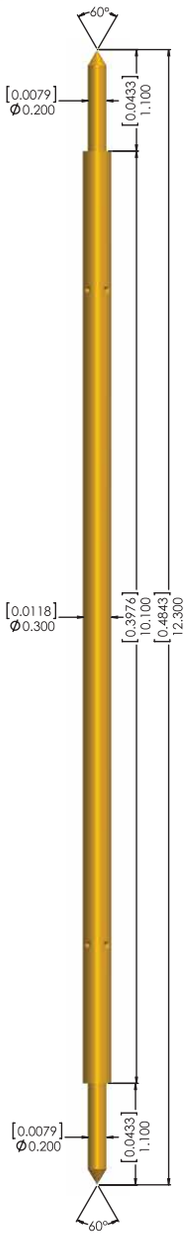
Panel Pin Head Type

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.

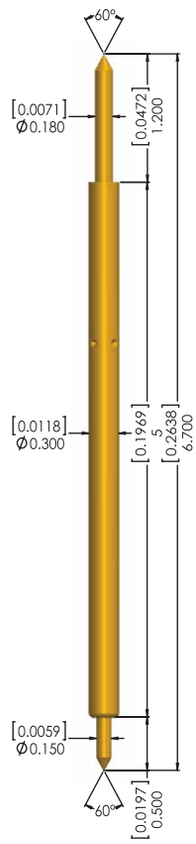
Recommened Travel
1.25mm
Full Travel
1.90mm
Spring Force
20g±20%@1.25mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000 GSG

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.

Recommened 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 GSG

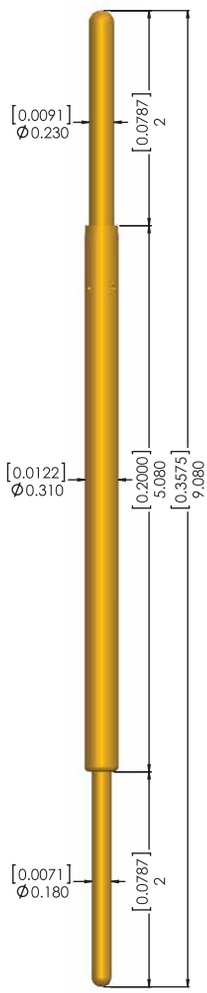
Current Rating 1A continuous
Contact Resistance <175mΩ(AVG)
Characteristic Impedance 45Ω
Insertion Loss -1dB >20GHz
Return Loss -20dB@3.35GHz
Time Delay 32.8 psec
Loop Inductance 1.48 nH
Capacitance 0.73 pF

*All specifications are subject to changes without prior notification

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.

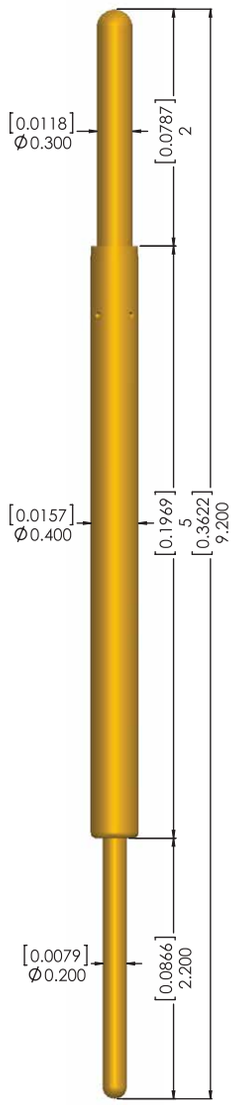
Recommened Travel
1.00mm
Full Travel
2.00mm
Spring Force
20g±20%@1.00mm
Operating Temp.
-15°C~125°C

Electrical Spec.

Pitch: 0.4mm Socket Material: Peek 1000 GSG

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

DE3-040DD50-01A0



Material

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

Mechanical Spec.

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

Electrical Spec.

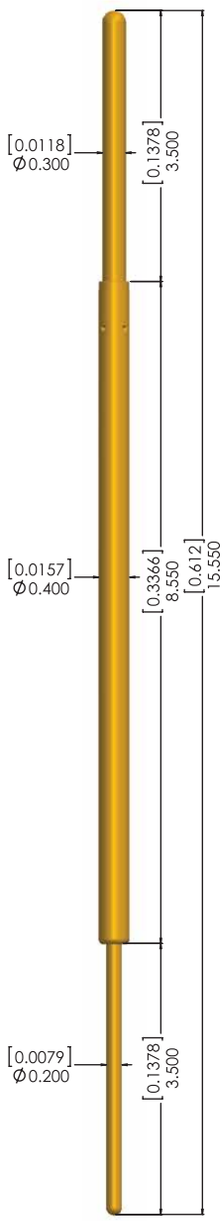
Pitch: 0.5mm Socket Material: Peek 1000 GSG

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.

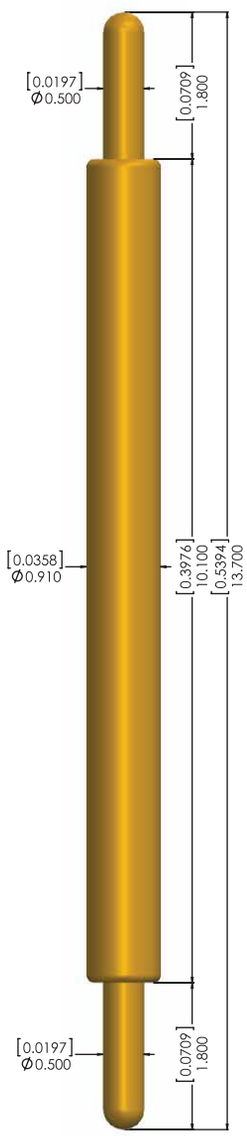
Recommened Travel
2.50mm
Full Travel
3.00mm
Spring Force
20g±20%@2.50mm
Operating Temp.
-55°C~150°C

Electrical Spec.

Pitch: 0.5mm Socket Material: Peek 1000 G S G

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

DE1-091DD10-01A0



Material

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

Mechanical Spec.

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

Electrical Spec.

Pitch: 1.0mm Socket Material: Peek 1000 G S G

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

*All specifications are subject to changes without prior notification

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



Pogo tower (ring)

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



Pogo Tower (Cable)

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

*All specifications are subject to changes without prior notification

Cleaning Tools



Nylon Brush

SSP-SSN-906500

Wire Diameter: Φ0.1mm

Size: 2.1 mm*4.0 mm*L145 mm



Steel Brush

SSP-SSS-SST6SS

Wire Diameter: Φ0.1mm

Size: 3.5mm*6.5 mm*L130 mm



Steel Brush

SSP-SSS-SST2SS

Wire Diameter: Φ0.1mm

Size: 2.0 mm*4.5mm*L93 mm



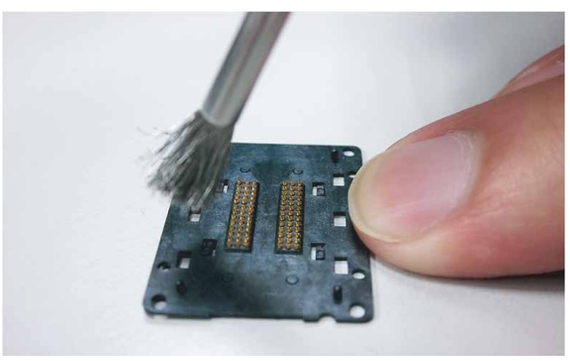
Tungsten Steel Brush

SSP-BR-TS002-094

Wire Diameter: Φ0.0 mm

Size: 1.7 mm*4.2 mm*L94 mm

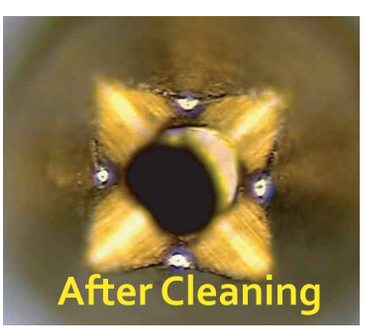
Probe Cleaning



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:

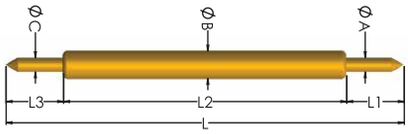
Nylon brush

< Nano Tungsten steel brush

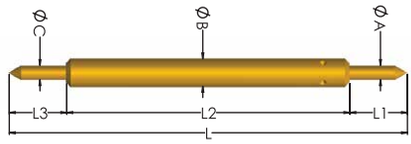
< Steel Brush (smaller brush size)

< Steel Brush (bigger brush size)

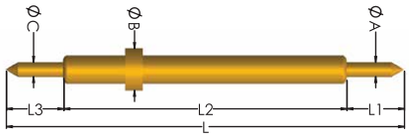
Type 1
Double Active



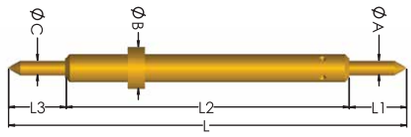
Type 3
Single Active



Type 2
Double Active
W/ Ring



Type 4
Single Active
W/ Ring



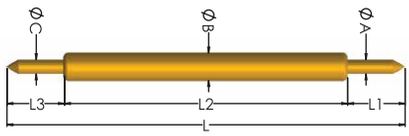
Unit: mm

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	PE1-010EE20-01A0	1	3.00	0.10	Conical/ 0.40	0.045	Conical/ 0.40	0.045	0.35	7g	6
	PE3-010DS53-02A0	3	7.00	0.175	Serrated/ 0.70	0.13	Round/ 0.90	0.08	0.55	6g	28
	PE3-013DS53-01F0	3	7.00	0.175	Serrated/ 0.70	0.13	Round/ 0.90	0.09	0.55	6g	28
0.3	PE3-015DL38-01A0	3	5.50	0.15	Blade/ 0.80	0.14	Round/ 0.80	0.11	0.40	20g	39
	PE3-020EL31-01A0	3	4.75	0.20	Blade/ 0.95	0.19	Conical/ 0.60	0.10	0.30	10g	39
	DE1-020BE40-01A0	1	5.70	0.20	Conical/ 1.10	0.10	Conical/ 0.60	0.10	0.60	12g	6
	PE3-020DS53-01A0	3	7.00	0.23	Serrated/ 0.70	0.19	Round/ 0.90	0.10	0.55	25g	29
	DE1-020BE74-010	1	9.70	0.20	Conical/ 1.50	0.12	Conical/ 0.80	0.12	0.80	6g	7
0.4	DE1-025BB10-02A0	1	12.20	0.25	Conical/ 1.10	0.13	Conical/ 1.10	0.13	1.45	30g	7
	PE4-025EF24-01A0	4	3.30	0.32	Crown/ 0.25	0.24	Conical/ 1.10	0.11	0.40	23g	8
	PE3-026DF17-01F0	3	3.00	0.26	Crown/ 0.70	0.15	Conical/ 0.50	0.12	0.35	20g	8
	PE3-026BD18-01A0	3	2.87	0.18	Conical/ 0.52	0.18	Round/ 0.50	0.13	0.30	24g	9
	PE3-026DF27-01F0	3	4.25	0.26	Crown/ 0.60	0.15	Round/ 0.85	0.13	0.40	22g	9
	WE1-026EF31-01A0	1	4.60	0.26	Crown/ 1.00	0.10	Conical/ 0.50	0.10	0.50	20g	45
	DE1-026BE40-01A0	1	5.70	0.26	Conical/ 1.10	0.10	Conical/ 0.60	0.10	0.65	14g	10
	DE1-026DF40-02A0	1	5.70	0.26	Crown/ 1.10	0.11	Round/ 0.60	0.11	0.65	18g	10
	DE3-026EF49-01A0	3	7.20	0.26	Crown/ 1.30	0.17	Conical/ 0.90	0.12	0.70	20g	11
	PE4-028DE09-01A0	4	1.23	0.33	-	-	Round/ 0.26	0.13	0.18	15g	36
	DE4-029DW25-01A0	4	3.70	0.33	Serrated/ 0.45	0.27	Round/ 0.70	0.12	0.40	25g	31
	DE4-029FF45-01A0	4	6.50	0.34	Crown/ 0.75	0.22	Crown/ 1.10	0.15	0.70	30g	11
	DE1-030BB10-01A0	1	12.30	0.30	Conical/ 1.10	0.20	Conical/ 1.10	0.20	1.25	20g	50
	DE1-030BB50-01A0	1	6.7	0.30	Conical/ 1.20	0.18	Conical/ 0.50	0.15	0.65	13g	50
	PE3-030DF17-03A0	3	3.25	0.30	Crown/ 0.95	0.18	Round/ 0.50	0.16	0.35	27g	12
	PE3-030DF18-01A0	3	2.90	0.30	Crown/ 0.60	0.20	Round/ 0.50	0.15	0.40	35g	12
	DE3-030BF21-03F0	3	3.30	0.30	Crown/ 0.60	0.22	Conical/ 0.60	0.15	0.40	30g	13
	PE3-030EL25-01A0	3	3.89	0.30	Blade/ 0.68	0.20	Conical/ 0.65	0.15	0.45	25g	40
	DE1-030DF40-05A0	3	5.70	0.30	Crown/ 1.10	0.15	Round/ 0.60	0.15	0.50	25g	48
	PE3-030EF53-01A0	3	7.00	0.30	Crown/ 0.70	0.20	Conical/ 0.90	0.15	0.55	25g	29
	PE3-031DF17-03F0	3	2.85	0.31	Crown/ 0.55	0.20	Round/ 0.50	0.16	0.35	35g	13
	PE3-031DF21-03F0	3	3.30	0.31	Crown/ 0.50	0.20	Round/ 0.60	0.16	0.40	35g	14
	WE1-031BB23-01A0	1	3.30	0.31	Conical/ 0.50	0.16	Conical/ 0.50	0.16	0.50	25g	45
	WE1-031BF23-01A0	1	3.30	0.31	Crown/ 0.50	0.16	Conical/ 0.50	0.16	0.50	30g	46
	PE1-031EF23-02F0	1	3.30	0.31	Crown/ 0.60	0.16	Conical/ 0.40	0.16	0.40	30g	14
	PE1-031EF30-02F0	1	4.00	0.31	Crown/ 0.60	0.16	Conical/ 0.40	0.16	0.60	31g	15
	PE1-031DF30-01F0	1	4.00	0.31	Crown/ 0.60	0.16	Round/ 0.40	0.16	0.60	31g	15
	DE1-031BF32-02A0	1	4.75	0.31	Conical/ 1.10	0.16	Crown/ 0.45	0.16	0.60	25g	16
	PE3-031EL38-01A0	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
	DE3-031DD50-01A0	3	9.08	0.31	Round/ 2.00	0.23	Round/ 2.00	0.18	1.00	20g	51
	PE4-032DF24-03F0	4	3.30	0.39	Crown/ 0.30	0.31	Round/ 0.60	0.15	0.40	30g	16

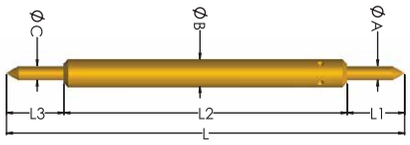
Except the specifications in the table, we provide customization according to your specifications.

*All specifications are subject to changes without prior notification

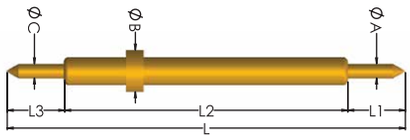
Type 1
Double Active



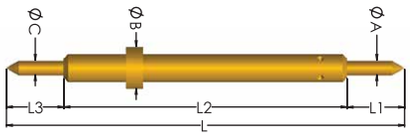
Type 3
Single Active



Type 2
Double Active
W/ Ring



Type 4
Single Active
W/ Ring

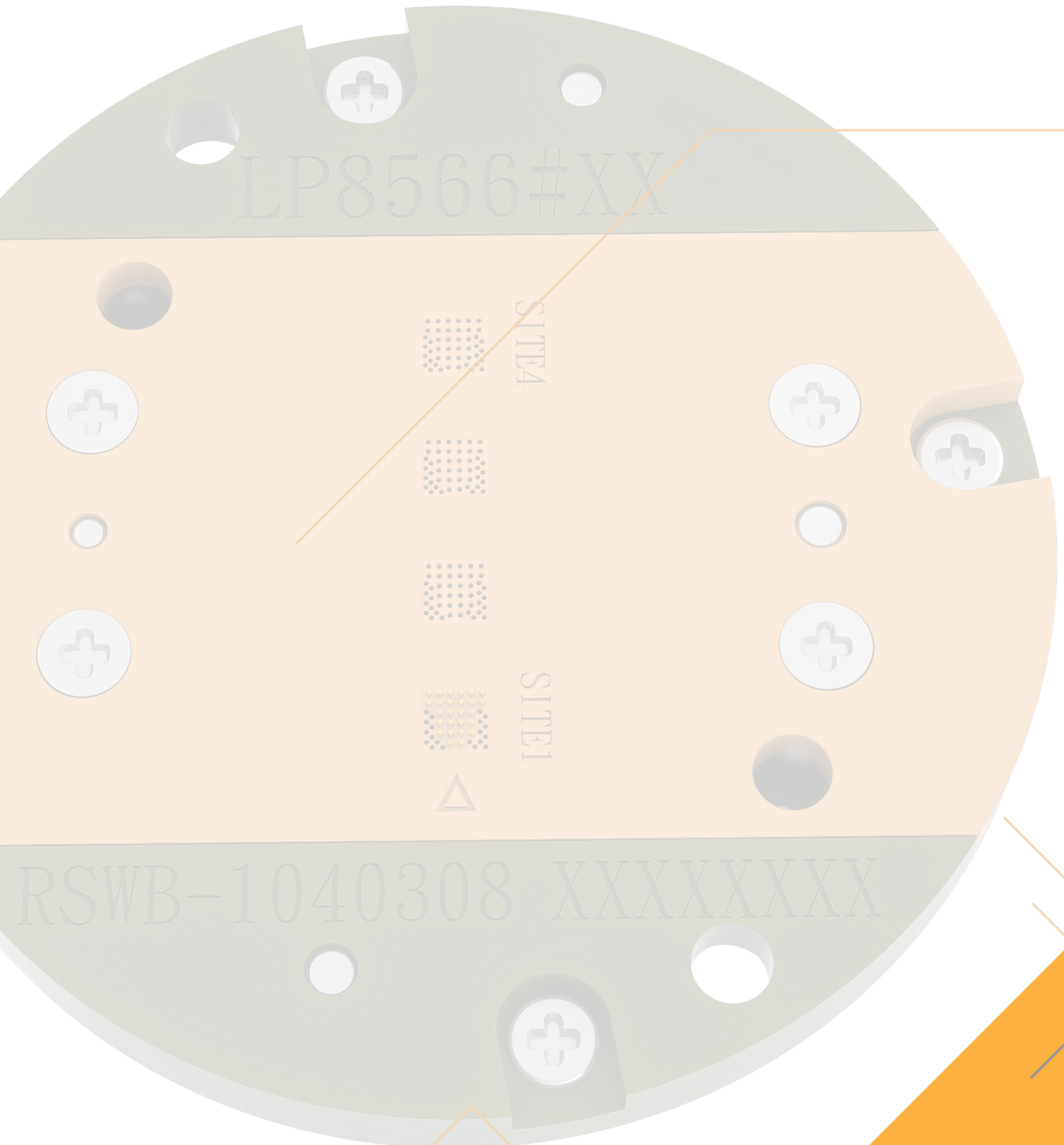


Unit: mm

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	PE4-035DE09-01H0	4	1.23	0.43	-	-	Round/ 0.26	0.17	0.18	15g	36
	DE1-035BE12-01A0	1	2.00	0.35	Conical/ 0.50	0.20	Conical/ 0.30	0.20	0.30	18g	17
	DE4-035DH24-01A0	4	3.35	0.42	Serrated/ 0.25	0.33	Round/ 0.70	0.18	0.50	27g	43
	PE4-035DF24-01F0	4	3.35	0.40	Crown/ 0.25	0.34	Round/ 0.70	0.20	0.45	32g	17
	PE1-035EF25-01F0	1	3.50	0.35	Crown/ 0.60	0.20	Conical/ 0.40	0.20	0.60	32g	18
	PE3-038DF17-03F0	3	3.15	0.38	Crown/ 0.75	0.23	Round/ 0.55	0.20	0.38	38g	18
	PE3-038EF17-04A0	3	2.85	0.38	Crown/ 0.50	0.22	Conical/ 0.50	0.22	0.35	30g	19
	PE1-038DF32-02F0	1	4.80	0.38	Crown/ 1.10	0.21	Round/ 0.55	0.20	0.65	37g	19
	PE1-038EP40-01A0	1	5.70	0.38	Crown/ 1.10	0.22	Conical/ 0.60	0.22	0.65	40g	20
	PE3-040BF34-01A0	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
	DE3-040DD50-01A0	3	9.20	0.40	Round/ 2.00	0.30	Round/ 2.20	0.20	1.00	20g	51
	DE3-040DD85-01A0	3	15.55	0.40	Round/ 3.50	0.30	Round/ 3.50	0.20	2.50	22g	52
0.6	PE4-045EF09-01A0	4	1.50	0.54	-	-	Conical/ 0.55	0.28	0.40	30g	37
	DE4-048EF17-01F0	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
	PE2-050EF25-01F0	2	3.35	0.66	Crown/ 0.50	0.30	Conical/ 0.30	0.30	0.45	35g	22
	PE4-052DF17-01F0	4	2.57	0.62	Crown/ 0.30	0.51	Round/ 0.57	0.25	0.40	30g	22
	PE4-052DF28-01F0	4	4.20	0.60	Crown/ 0.40	0.51	Round/ 1.00	0.25	0.60	40g	23
	DE4-052EF23-02F0	4	3.35	0.61	Crown/ 0.30	0.50	Conical/ 0.75	0.30	0.45	35g	24
0.7	DE4-056EF09-03F0	4	1.50	0.65	-	-	Conical/ 0.55	0.38	0.40	31g	42
	PE4-056EF09-01H0	4	1.50	0.65	-	-	Conical/ 0.55	0.38	0.40	31g	37
	PE4-056DF20-02F0	4	3.05	0.65	Crown/ 0.30	0.54	Round/ 0.70	0.30	0.50	35g	24
	DE3-056BE34-01A0	3	5.39	0.56	Conical/ 0.94	0.40	Conical/ 1.00	0.30	0.67	35g	31
	WE3-056BE34-02A0	4	5.39	0.56	Conical/ 0.94	0.40	Conical/ 1.00	0.30	0.67	35g	46
	PE1-058EE40-01A0	1	5.75	0.58	Conical/ 1.10	0.30	Conical/ 0.65	0.30	0.80	28g	43
0.8	PE4-065EW15-01A0	4	2.5	0.65	Serrated/ 0.60	0.53	Conical/ 0.70	0.42	0.50	32g	24
	PE4-068EP35-01F0	4	4.45	0.80	Crown/ 0.40	0.67	Conical/ 0.90	0.35	0.65	40g	25
	DE1-072EE50-01A0	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	DE4-090EF25-02F0	4	3.20	1.00	Crown/ 0.40	0.90	Conical/ 0.70	0.63	0.50	30g	26
	DE1-091DD10-01A0	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



Taipei HQ
+886-2-29612525

Kaohsiung
+886-7-3601161

Zhubei
+886-3-5506368

San Jose
+1-408-3341981

Frankfurt
+49-171-3669549

Bangalore
+91-7619689680

Singapore
+65-81391296

Seoul
+070-7543-2531

Tokyo
+81-5295-7090

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

Hong Kong
+852-23014671

Hanoi
+843-8805-1121

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